



ZÁVĚREČNÁ ZPRÁVA PROJEKTU

specifického výzkumu - zakázka č. **2104**

(pracoviště 01240, činnost 1210)

Není zač, nebo Rádo se stalo? Primingový experiment v oblasti lexikální negace a větného záporu

Odpovědný řešitel:

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Celková částka přidělené dotace: 72 000,- Kč

Stručný popis výzkumného problému

Obecný cíl: Připravit a pilotně realizovat lexikální experiment v oblasti školní praxe.

Výzkumný cíl: Ověřit vztah mezi expozicí lexikálně negativních slov a jejich incidencí v následném verbálním chování žáků. Nezávislá proměnná: negativní/pozitivní indukce. Závislá proměnná: počet lexikálně negativních slov ve verbálním chování žáka (operacionalizováno na slovesa s předponou ne-).

Stručný popis postupu řešení

- 1) Byl vytvořen induktivní materiál pro dosud netestované druhostupňové subjekty (indukce = na základě literatury bylo formulováno 14 stejných příkladů, proč lidé *realizují* /pozitivní indukce/, resp. *nerealizují* /negativní indukce/ dobročinné chování).
- 2) Byl realizován experiment v přirozených školních podmínkách (žáci 9. třídy, probírané téma Dobročinnost, žáci dostali náhodně pozitivní nebo negativní induktivní materiál a měli za úkol napsat esej, ve které popíší, co znamená dobročinnost).
- 3) Transkripce získaných dat.
- 4) Lemmatizace.
- 5) Statistické zpracování.
- 6) Sepsání získaných výsledků do článku stručně shrnujícího stěžejní výsledky (viz publikační výstupy).
- 7) Tvorba a prezentace posteru na mezinárodní konferenci ICEEPsy.

Splnění kontrolovatelných výsledků řešení

Výsledky výzkumu byly prezentovány na The 5th International Conference on Education and Educational Psychology (21. – 25. října 2014, Kyrenia, Kypr) a publikovány v Procedia-Social and Behavioral Journal (ISSN 1877-0428, v tisku). Výstup je zadaný v OBD jako rozpracovaný s vazbou na RIV. Kromě teoretických výstupů byly formulovány praktické



workshop Pozitivní komunikace v MŠ v rámci dalšího vzdělávání pedagogických pracovníků (7.11.2014, ŠZ DVPP KHK Náchod).

Výstupy

HAVIGEROVÁ, J. M., LOUDOVÁ, I., NOVOTNÝ R., & KRUPIČKOVÁ M. (2014, in print). You're welcome or Not at all? Experimental influencing using of un- verbs. *Procedia – Social and Behavioral Sciences*, ???, ISSN 1214-9187.

Přehled realizovaných výdajů

Název kategorie	Uskutečněné výdaje	Plánované výdaje	Konkretizace
Stipendia a DPP pro studenty	12 508,40	12 000	6000,- stipendia 6000,- mzdy 500,- pojištění soc 8,40 pojištění zák.
Odměna řešitelům	4986,96	5 000	3710,- mzdy 333,87 pojištění zdr. 927,50 pojištění soc. 15,59 pojištění zák.
Elektronická čtečka	3 488	3 000	El. čtečka Kindl
Cestovné a platby na konferenci	38 889,90	44 000	13 572,90 konf. poplatky 11 524 letenka Kypr 13 529 cestovné, stravné, ubytování 264 cest. pojištění - ICEEPsy Bc. Novotný
Materiální náklady	10 714	10000	Tonery, papíry
Ostatní služby	960	0	Tisk posteru
Jiné	745,24 -22,05	0	Kurzové ztráty, bankovní poplatky, haléřové vyrovnání, kurzové zisky
Celkem	72 270,45 CZK	72 000,- CZK	

Celkem realizované výdaje **72 270,45 CZK**

Seznam příloh

Příloha č. 1 - Příspěvek v *Procedia – social and behavioral sciences*

Vyúčtování

Příloha č. 2 – Výsledovka po účtech s pohyby - výpis z Magionu (pracoviště 01240, zakázka 2104, činnost 1204)

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Podpis

Dne 28. listopadu 2014

You're welcome or not at all? Experimental influencing using of un- verbs

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Abstract

Purpose of study is to verify that the type of teacher's instruction (affirmative or negative induction) affects pupils' active vocabulary (incidence of negative verbs, i.e. verbs with the prefix *ne-*). Participants: 24 pupils, 9th grade (age 14-15). Procedure: during standard EDC/HRE lesson all students had the instruction to write essay on charity. Students were randomly divided into A and N group and were induced by 2 types of stimuli: a list with 14 positively formulated reasons Why people do charity (group A, affirmative induction) and a list of the same reasons but negatively formulated Why people are not doing charity (group N, negative induction). Thereafter essays were transcribed, lemmatized and coded. Totally 2351 words were used in essays ($m=97.95$ per essay). Results demonstrated that young students have in their active vocabulary higher proportion of negative verbs if they are induced by negatively formulated teacher's instructions (15 % of all words), compared with students who were induced positively (9 %). On the other hand this study proved that type of instruction influences cognitive processes and performance: positive induction lead to increase production of the text (1488 words used), while the negative induction led to inhibition of production (only 883 words used).

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1. *Keywords*: negation; negative verbs; priming; experiment; adolescents

Introduction

The project is based on the concept of positive psychology and follows up our previous researches of lexical negation (Havigerová, Karásková, 2012 and Havigerová, Křováčková, Karásková, Krupičková, Vítová, 2013).

Positive psychology posited at the turn of the millennium following the current of humanistic psychology (Seligman, Csikszentmihalyi, 2000). Previous research from the field of cognitive psychology points out inter alia the direct coherency between experiencing and thinking (Sternberg, 2009). The change in thinking demonstrably affects the change of experiencing and this relation is reciprocal. Frederickson (2009) describes this relation with the help of a metaphor of a radio receiver – we are sending and receiving such impulse which we are tuned to. The tuning is while often influenced by insignificant stimuli as a few words or a nice cup of a hot drink as has been repeatedly done by experimental evidence see conceptual, postural or sequence priming (e.g. Kantowitz, Roediger, & Elmes, 2009) and has many other different consequences.

The preponderance of negative thoughts leads to negative experiencing (see depression research) and vice versa. Analogically the research has repeatedly shown that there exists a direct coherence between thinking and paying attention (Sternberg, 2009). The basic characteristic of attention is selectivity. We choose from a never ending current of impulse those which are at that moment important. The focus of attention is influenced by interpretation of events and a type of induced memories in mind – positive thinking is connected with positive interpretation of events and is supported by recalling memories in mind (Diener, & Biswas-Diener, 2008).

External expression of thinking is a speech, which is made by linguistic utterances (e.g. Plhánková, 2004). The sentences in Czech language have the positive or negative form. The positive sentence can be used to express a

predication, a command or a wish. Negative sentence is used by the speaker when denying the validity content or

he/she forbids realization of the sentence content or does not want to wish its realization at all.

The variability of linguistic means allows that the same thoughts could be formulated by more than one way. Several formations might have different impact on the receiver. Negative and affirmative sentences increase activation in different areas in the brain (Christensen, 2009); negation caused changes in activation levels (MacDonald & Just, 1989).

The speech is the primary means of pedagogical communication (Bendová, 2011) and as Bartošová (2008) mentioned, is the basis of communication in spoken and written form too. Hornáčková (2014) also adds creative elements of communication that provokes a child to develop imagination and creativity when composing words and creating sentences. Number of observations in pedagogical practice can be measured in terms of valence as positively or a negatively formulated statement. Based on the findings from the field of positive psychology can proceed inter alia following assumptions:

- Negative teacher's statements are indicators of
 - negatively oriented teacher's experience,
 - negatively oriented teacher's attention,
 - negatively oriented thinking,
- Negative teacher's statements influence
 - focus of pupils' attention towards negative phenomenon,
 - pupils' experiencing towards negative emotions,
 - pupils' thinking towards negative interpretations,
 - pupils' memorizing (less extend of memorizing, memory storing with the connection to negative emotion),
 - classroom climate.

We have focused in this research on the problem of negation phenomenon – negative verbs. The negations in the Czech language are created by a typical national morpheme in a prefix: *-ne* (*-no*, *-un* in English language). This is a relic of proto-Indo-European time (Kosta, 2001). Lexical negation is understood by using negation morpheme (prefix, negation *ne-*) to create negative formation of words, e.g. substantive (*nepřítel*, *nedochvilnost* – enemy, tardiness), adjectives (*nelaskavý*, *nestálý* – unkind, unstable) and adverbs (*nedobře*, *nezajímavě* – no good, uninteresting) (Mikulová et al., 2005). The negative sentence can be made by negative morpheme *ne-*, which has kept its characteristic position standing before a verb (*nebude*, *nevěřím* – not will be, I do not believe).

For further understanding look at these following statements:

- Proč myslíte, že autor *nepíše* o (), ale o ()? Why do you think that the author does not write about (), but about ()?
- *Nezapomeň splnit všechny úkoly v testu.* Do not forget to complete all tasks in the test.
- *Nedívej se do poznámek, mluv z paměti.* Do not look at my notes, speak from memory.
- *Neopisuj od souseda.* Do not cheat and copy from your partner.
- *Nepoužívej pero, ale pastelku.* Do not use a pen, but crayon.
- *Nevykřikuj.* Do not shout.

What do these statements have in common? Firstly all of them come from school. Secondly all of them have been said by the teacher towards students. Thirdly and this is essential that they have the monitored phenomenon of negation. We are aware that this system also works in the family (e.g. Skutil, Faberová, & Bartošová, 2011), but it is not at this stage the subject of our research. This study is focused on negative verbs made by this prefix *ne-* (*-no*, *not*, *-un* in English) and their transmission from teacher instruction to student's choice of words when filling instructions and writing essays.

2. Method

2.1. Purpose of study

Purpose of study is to verify that the type of teacher's instruction (affirmative or negative induction) affects pupils' active vocabulary. The measured criterion is the incidence of lexical verbs in the negative form (verbs with the prefix *ne-*). We assume that the positive instruction will result in a larger number of verbs in positive form (affirmative), while the use of negative instruction will result in a larger number of verbs in the negative form (negative) used in student essays.

2.2. Participants

This part of research was conducted in one 9th class with 24 children present (13 females, 11 males). Students were 14-15 years old.

Research is carried out in the natural conditions of primary school (9 grade) practice, during the standard lesson of *Citizenship education* (EDC/HRE) subject. All students had the same task: to write essay on charity. Students were randomly divided into two groups. Students in the first group were given (as a guide) a list of 14 positively formulated reasons *why people do charity* (affirmative induction), students from the second group were given as a reference list of the same 14 reasons negatively formulated, reasons *why people are not doing charity* (negative induction). Full text of induction sentences is shown in Table 1.

Table 1 Lists of sentences used as affirmative or negative induction

AFFIRMATIVE	INDUCTION	NEGATIVE
<i>Why people ARE doing charity?</i>		<i>Why people ARE NOT doing charity?</i>
It brings them a good feeling.	A	It does not bring them a good feeling.
They care about others.	B	They do not care about others.
They are encouraged to do.	C	They are not encouraged to.
They were brought up to do.	D	They were not brought up to.
They know how to do it.	E	They do not know how to do it.
They have enough resources to use for.	F	They do not have many resources to give.
They have something to atone for.	G	They do not have anything to atone for.
They believe that if something happened to them they will also be helped.	H	They do not believe that if something happened to them they will also be helped.
They consider it important to look good in the eyes of others.	I	They do not consider it important to look good in the eyes of others.
They consider it to be modern (to help).	J	They do not consider it to be modern (to help).
They are active ones.	K	They are not active.
It brings them a sense of usefulness.	L	It does not bring them a sense of usefulness.
They feel sorry for people in certain situations.	M	They are not feeling sorry for people in certain situations.
They are subject to pressure from the collectors.	N	They do not succumb to pressure from the collectors.

The texts of individual student essays were transcribed. Subsequently lemmatization of all words was done. Then it was done coding of all verbs in terms of affirmation / negation. Thus obtained data was analyzed and here are most important results.

Results

There were obtained 24 essays, 12 from affirmative inducing students, 12 from negative inducing students. Statistical computations are always carried out with the whole subset of twelve essays by the type of instruction, hereinafter labelled as **affirmative group (A group)** and **negative group (N group)**.

There were used totally 2351 words in all 24 essays (mean 97.95 words per essay). The most frequent word classes were in both groups: 1. verbs, 2. pronouns, 3. substantives, 4. conjunctions. Fifth to seventh place ranking differs (see Table 2): A group is in order: adjectives, adverbs, preposition, while the N group has order the opposite of this.

Table 2 Representation of word classes: Frequency analysis (N=24 essays, 2351 words)

Word class	A group	N group	All
A adjectives	114	47	161
C numerals	8	14	22
D adverbs	110	64	174
I interjections	1	0	1
J conjunctions	190	110	300
N substantives	216	168	384
P pronouns	311	174	485
R prepositions	104	73	177
T particles	37	18	55
V verbs	377	215	592
<i>Suma</i>	<i>1468</i>	<i>883</i>	<i>2351</i>



For further analysis modal verbs (35 A group, 19 N group) were excluded, and therefore further we work with a total of 538 verbs only. The essence of this study is monitoring of the incidences of two types of verbs: affirmative and negative verb form. Table 3 shows how many affirmative and negative verbs were used in each group.

Table 3: The total number of A and N verbs in essays of A and N research group: Frequency analysis (N=24)

Induction group	Total verbs used	A verbs	N verbs	N verbs in %
A group	342	313	29	8.48
N group	196	167	29	14.79
Suma	538	480	58	10.78

From the Table 3 it can be seen that approximately 10 % of the total number of verbs is used in negative form (with the prefix *ne-*). However, **there is an obvious difference between groups**: the group, which was induced by the negatively negative verb consists of almost 15%, while in the group positively induced verbs of negative form constitutes only less than 9%!

Interestingly we can mention the top quintuplets of negative verbs of both differently induced research groups. Affirmative group top five is (not to): 1. be, 2. realize, 3. prove, 4. have, 5. help. Negative group top five is (not to): 1. have, 2. help, 3. be, 4. donate, 5. believe / give.

3. Discussion

Many of priming-based experiments and researches (f.e. Huttenlocher, Vasilyeva, & Shimpi, 2004) shows that there is a demonstrable effect between the way adults speak and instruct children and speech of those children. Effects like this are independent of the child's intelligence (Havigerová, Burešová, Smetanová, & Haviger, 2013). The presented study demonstrated that **young students induced by negatively formulated teacher's instructions have in their active vocabulary higher proportion of negative verbs (almost 15 % verbs with the prefix *ne-*) if they are, compared with students who were induced positively.**

This result seems to be fully in line with our expectations. But, in absolute values, both groups have indicated the same (even exactly the same!) number of negative verbs. This in turn means that the type of instruction does not affect the number of negative verbs used by students. How is it possible that the results in absolute frequency are vastly different from the results of the relative frequency numbers? The secret of such difference is hidden in the number of positive verbs produced by students of both groups. Students from affirmative groups were generally more productive than students from the negative group. Although the instructions were for both groups quite the same, **this study proved that positive induction led to increased production of the text, while the negative induction led to limited production of the text.**

The explanation for this critical difference may provide the current state of knowledge about the unfavourable effects of negation on cognitive processes and performances. For instance, *using negative word in instruction slows performance*. Jones study from 1966 investigates this effect on using a qualifying negative "except" on performance of a task, for which an equivalent positive form of instruction was available. *Negation increases error rates*: for example a meta-analytic review of research comparing biased and unbiased instructions in eyewitness identification experiments showed an asymmetry; specifically, that biased instructions led to a large and consistent decrease in accuracy in target-absent lineups (Clark, 2005). Just, & Clark (1973) found that subjects found *it easier to verify positive components as true, but negative components as false*. Also, subjects of Just and Clark's research took longer on negative verbs, but by an equal amount on both components, even though such negation does not logically affect presuppositions, what suggests that people may examine implications before presuppositions regardless of which component is interrogated (ibid.). *Negative instruction suppressed the association*: Langfeld already in 1910 states that the negative Aufgabe acted as a block against definite association; it was found that the force of suppression not only inhibited the name of the pictures, but frequently inhibited words closely related to the picture and that such a suppression process may be strengthened by practice (Langfeld, 1910: 208). MacDonald and Just (1989: 633) verified and extended these statements with their own experiments. Their results suggest that *negation affects the discourse focus of a noun phrase, and hence the activation level of its representation*: subjects were slower to indicate that a probe had been in the sentence when the probe corresponded to a negated noun (e.g. no bread). Some researches indicate that *negative instructions produces reports of poorer imagery* (Ashton, & White, 1975), but results are not conclusive.

4. Conclusion



Negation in language is indeed a phenomenon that occurs in many forms at many languages (e. g. Laka, 1991; Miestamo, 2007; Horn, & deGruyter, 2010), but for a person (especially a child) it is a complex and not easy phenomenon. Using negation implicates many negative consequences. **The results of our research lead to the conclusion that negatively postulated instruction (based on the use of negative verbs) inhibits cognitive processes, at least verbal production on a given topic and generating of ideas and the development of associations.**

Acknowledgements

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Příloha č. 2 – Výsledovka

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