

Double Inference in the Processes of Comprehension of Russian and English Discourse Complicated by an Idiom

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ABSTRACT

The paper briefly surveys contemporary studies in the field of secondary nomination and idiom comprehension in discourse. The research mainly focuses on the inferential processes which occur at the moment of perceiving a discourse containing an idiom. Although the inference phenomenon has received much attention in recent years, the majority of scientific works on the topic are targeted at the inferential processes in text comprehension while such a challenging area as inference in secondary nomination remains unrevealed. The aim of the present study is to find out if the traces of inferences in the metaphoric meaning of an idiom can interfere in the comprehension of a discourse complicated by an idiom. Thus, the study presents an analysis of idiom comprehension in a narrative discourse that lies in both fields of inference study: inference in secondary nomination and inference in discourse comprehension. For this purpose, the paper gives an outline to the theories which explain some mechanisms of inference action and presents an analysis of some pieces of narrative discourse from the perspectives of the discussed theories. The research is conducted on Russian and English language material. The results of the study point to the double mapping of the inferential processes that is caused, on the one hand, by the inferential traces of secondary nomination and, on the other hand, by the implicit sense of an idiom in discourse. The paper presents a model of conceptual integration in the process of double inference while comprehending a text complicated by an idiom.

Keywords: discourse; implication; inference; nomination; idiom

INTRODUCTION

Nowadays we often come across the term inference in the researches that investigate deep down processing of knowledge when comprehending an utterance, a text or discourse (Peregrin 2014, Yeari & van den Broek 2015, Suvorova & Polyakova 2018), or when discussing the issues of meaning formation of derivatives and idioms (Kubryakova 2004). Some researchers define it as the information that is not expressed explicitly by the text but derived on the basis of a comprehender's knowledge and is encoded in the mental representation of the text (Noordman & Vonk 2015). A case, when people imply something with the consideration that the message of the conversation would be understood without it being clearly stated, can serve as one of the examples of triggering such inferential mechanism (Jaufillaili, Sujatna, Indira & Indrayani 2017). The others consider the inference to be an act of deriving logical conclusions from premises known or assumed to be true (Goldman, McCarthy & Burkett 2015, Emets et al. 2018). These views are mainly different due to the versatile nature of inference. Inference can occur both in problematic solving when following an algorithm and in usual human reasoning that is not concerned with the assessment of the validity of arguments. In this article, the notion of inference is restricted to a cognitive operating process or mechanism of receiving the inferred data in the course of

processing information, and the inferred data themselves. It is based on speech situation and common knowledge, and is accompanied by the related emotions, feelings, and attitudes. The definition stems from the choice of the studied material, that is processes of secondary nomination of idioms and their comprehension in discourse.

Despite the increasing number of scientific works on inference, there remain unexplored areas in this field. One of these areas is the inferential mechanism in the formation of a secondary meaning of an idiom and its influence on the further comprehension of the idiom in discourse. It becomes more important if we take into consideration that about 70% of the speeches of adult native speakers consist of idiomatic expressions (Yeganehjoo & Thai 2012).

Discourse containing an idiom requires additional cognitive efforts to process both the idiom and the information surrounding it in discourse. What remains unclear is what cognitive operations underlie processing of the information in the discussed case and the nature of this process. A secondary meaning of an idiom is formed out of its components. When reinterpreted, they acquire a metaphoric meaning. The put forward hypothesis is that inferences, appearing in the process of an idiomatic meaning formation, can leave traces which further influence the comprehension of the idiom in discourse. Later, they can interfere in the whole process of discourse comprehension. In addition, comprehension of the idiomatic discourse can also be complicated by separate individual senses involved in the common understanding of the used idiom. These shades of the common meaning sometimes play a great role in general comprehension of an idiom and may result in misunderstanding. Finally, the output of the discourse comprehension looks like an integration of all the inferred and genuine, individual and common senses. Revealing the nature of the mapping cognitive operations in comprehending a discourse complicated by an idiom contributes to better understanding of the inference phenomenon and allows looking behind human reasoning.

LITERATURE REVIEW

A review of the works that make an emphasis on the problem of inference (Kubryakova 2004, Dobrovolskij 2014, Peregrin 2014, Bergen, Levy & Goodman 2016) allows us to distinguish between two inferential mechanisms, operating at the moment of comprehending an utterance containing an idiom. The first inferential mechanism can be called a semantic inference as it acts in idiom comprehension. The process finds similar interpretations in scientific literature (Bergen, Levy & Goodman 2016), that are based on the main principle of semantic inference action, that is “retrieving the intended meaning in the context of semantically related words” (Harvey 2014). In the paper, we do not follow the common understanding of the semantic inference. We consider it a result and a process at the same time. By the term semantic inference we refer to primary conclusions that appear at the moment of metaphorical reinterpretation of a speech situation (that leads to an idiom formation). They remain in the secondary meaning of an idiom and can be reconstituted when inferring the whole meaning of an idiom. This mechanism originates in extracting implied senses at the stage of idiom meaning formation and it repeats either consciously or unconsciously in comprehending the idiom in discourse.

The second mechanism acts in perceiving implicit senses of the whole utterance containing an idiom. We distinguish it from semantic inference due to their different vectors of action. If the former inference occurs at the level of interpreting senses of separate components of an idiom to infer its whole meaning (Cacciari & Levoranto 1998), the latter serves to comprehend the discourse, which contains an idiom, regarding all the individual senses accompanying the idiom meaning.

Thus, we can hypothesise that while processing an utterance containing an idiom, double inferring takes place. It occurs due to the fact that understanding of such an utterance is complicated by both the processing of the original metaphorical or metonymical sense that underlies the common meaning of the idiom, and the comprehending of the discourse complicated by the idiom. The process of double inference usually causes individual senses associated with the idiom, the discourse and the emotional attitude (as an idiom is never neutral in speech). By individual senses, we mean such shades, which a comprehender adds to the common meaning of an idiom when interpreting it. Individual senses become especially noticeable when the idiom being used does not fully comply with the discourse. It is obvious, that in discourse a speaker often uses a common meaning of an idiom incompletely/irrelevantly or provides an idiom with additional individual senses. For instance, the idiom *to shoot the mouth off* can acquire additional senses when used in various discourses. Dealing with the idiom in the utterance *You learn not to shoot your mouth off in this business* results in inferring additional senses *be careful when communicating with other business people*, and in the utterance *Hank, you shoot your mouth off too much!* the additional senses are *Hank, you're saying nonsense; you are a gossip*.

To check the put forward hypothesis about double inference in comprehending discourse containing an idiom we will, firstly, review theories related to the problems of idiom formation and idiom comprehension in discourse and, secondly, carry out an experiment to verify the developed model of idiom comprehension in discourse.

SEMANTIC, STRUCTURAL AND CONNOTATIVE PERSPECTIVES ON IDIOM MEANING FORMATION

A retrospective review of the studies on the process of idiom formation (Teliya 1996; Cacciari & Levoranto 1998, Gvozdev 2010) shows that until recently the idiom meaning formation has been considered as a process of semantic and structural transformation of idiom components into a ready-made lexical unit with a metaphorical meaning.

In Russian scientific literature the problem of secondary nomination of idioms and idiomatic collocations is considered in a number of works which analyse the nominative process from semantic, structural and contextual perspectives. The contextual perspective on the secondary nomination of collocations (Teliya 1996) focuses on the mechanism of activating relevant connotative features in the relative word in a collocation and transferring them to the main word (a golden age, a gentleman's agreement, a sweet tooth, key interests). For instance, such connotative and figurative features as *decency* and *honour* associated with the relative word *gentleman's* in the collocation enlarge the conceptual meaning of the main word *agreement* attributing an additional meaning *confidence in the partner*. Connotative features refer to the stylistic, emotional and estimative shades going along with the main meaning of the word (Teliya 1996). The semantic approach (Kopylenko 1978) considers idiom formation as a process in which sememes expressing secondary, derived meaning or connotative meaning start dominating over the other sememes in the meaning of the relative word thus uniting the relative word and the main word in a collocation ("a wolf-skin coat" – by wolf-skin is meant "made of a wolf's fur"; wolfish appetite – here wolfish means voracious, strong). The structural and semantic perspective on the problem of secondary nomination (Gvozdev 2010) suggests that the main processes of idiom meaning formation are 1) phraseological integration, when one of the words in a collocation acquires a new meaning (to catch, draw (somebody's) attention), 2) phraseological differentiation, when a word disintegrates into two or more words making a collocation (conclude – make a conclusion), 3) transposition, a process when separate words taken together acquire

additional metaphoric senses (The clouds were gathering above poor Tom), 4) phraseological reduction, when a saying is reduced to a collocation (in a two shakes of a dead lamb's tail - in a couple of shakes).

Thus, the discussed approaches to the secondary nomination process exclude a speaker from the process of nomination reducing it to the transformation of semes.

COGNITIVE APPROACH TO THE PROBLEM OF SECONDARY NOMINATION

In the early 2000s there appeared a new look on the problem of secondary nomination caused by the cognitive revolution in linguistics. It had an impact on the new parallel investigations of secondary nomination covering idioms (Alefirenko 2015, Dobrovol'skij 2014, Gibbs & Colston 2012, Fauconnier 2010). The theories examining this linguistic field complement each other and are based upon the concept that human thinking is metaphorical in nature.

One of the discussed perspectives is a theory of cognitive and discursive nature of an idiom (Alefirenko 2008). It considers the process of secondary nomination of idioms as a way of compressing inner senses (schematic visualization, auditory and visual images, schemes, representations), when transferring a cognitive metaphor into an idiom. Thus, secondary meaning of an idiom is formed due to a metaphor presented by images and schemes. The process of idiom comprehension goes backwards by means of metaphoric transformation of an idiom into inner senses expressed by images and schemes. Unfortunately, the author of the theory does not go deep into the process of metaphorical transformation and does not explain how vague images and schemes can turn into specific words comprising an idiom (Alefirenko 2008).

The theory of conceptual metaphor (Gibbs & Colston 2012) considers the processes of idiom meaning formation and comprehension of idioms to be motivated by independently existing conceptual metaphors that provide the foundation for our everyday thought and reasoning. The conceptual metaphors are composed of some relevant primitive metaphors like atoms are composed of smaller elements. Thus, in comparison with the previous theory, Gibbs and Colston's theory of conceptual metaphor considers metaphorical thinking to be based not on inner images and schemes but primitive metaphors (Gibbs & Colston 2012). The theory of semantic analyzability of idioms (Cacciari & Levoranto 1998) offers a competing standpoint on the idiom meaning development and comprehension. Opposite to Gibbs and Colston's theory, Cr. Cacciari and M.Ch. Levoranto believe the idiom interpretation is based upon direct meaning of the idiom's key components. The authors of the theory describe a series of experiments, which show comprehension of various idioms relied upon key words that either speed comprehension of the idiom or force a comprehender to look for another meaning that is making sense (Cacciari & Levoranto 1998).

Dobrovol'skij's cognitive model of actual meaning of an idiom is one of a few theories, attempting to explain the mechanisms underlying figurative thinking. It argues the idea that a figurative meaning is a result of procedures on corresponding cognitive structures (Dobrovol'skij 2014). The theory says that an actual meaning of an idiom does not transform, but stems from cognitive processing and overworking of various cognitive structures, frames in particular. A frame is a conceptual structure that is used for descriptive representation of knowledge about a typical situation that contains slots semantically linked with each other (Baranov 2008). An idiom meaning forms due to the interaction of two frames: a frame source and a frame aim. The interaction of the frames results into a structural transformation of one of them under the influence of the other one. Thus, the theory explains the essence of a metaphorical process by a set of basic procedures on slots of a frame source and a frame aim. They are: 1) inserting a cognitive structure into another one. For instance, comprehending of

an idiom *be on pins and needles* is based on the interaction of two frames: a frame *pins and needles* and a frame *to be*. The former one has a slot *sharp* that inserts in the frame of the latter one, thus generating the actual meaning *to be in an uncomfortable position* (*She was on pins and needles all the time*); 2) elimination of a cognitive structure. In comprehending the idiom *no end* a slot *end* is eliminated, thus making us understand that the amount of something is great, unlimited (*Box at the opera costs no end*); 3) highlighting a cognitive structure. Understanding of the idiom meaning *the snow of yester-year* focuses on one of the features of snow (*yester-year*) that is highlighted (*your speech is the yester-year snow*, 4) repeating of a cognitive structure. The comprehension of an idiom *a sweetie pie* is based upon two frames: *a pie* and a corresponding frame *a person*. The former one has a slot *sweet and pleasant* that repeats in the latter frame *a woman*.

One more approach to the study of cognitive processing of information is the conceptual blending theory (Fauconnier 2010). If the theories reviewed above consider secondary naming and idiom interpretation with regard to certain language material, collocations and idioms, the conceptual blending theory focuses on everyday thought and reasoning in general. According to the theory, there are operations of identity, integration, and imagination at the heart of even the simplest possible meaning. The recognition of identity, sameness, equivalence is in fact a spectacular product of complex, imaginative, unconscious work. Finding identities and oppositions is a part of a much more complicated process of conceptual integration, which has elaborate structural and dynamic properties and operational constraints, but which, as a rule, goes entirely unnoticed. Identity and integration cannot account for meaning and its development without imagination.

In comprehension, linguistic forms are (partial and underdetermined) instructions for constructing interconnected domains with an internal structure, called mental spaces (Fauconnier 2010). Mental spaces are connected to long-term schematic knowledge called frames and can be activated in various ways and purposes. When projecting onto each other in several directions mental spaces make up a blend that further results into an emergent structure by means of composition, completion, and elaboration in the blend. The emergent structure does not borrow elements from the blend but results from overworking the information from the blend (Fauconnier 2010). We have chosen our own example to describe the conceptual blending theory. Cognitive comprehension of the expression *inflation is mushrooming* starts with the interaction of two mental spaces *inflation* and *mushrooming*. The spaces have a lot of convergence points. Firstly, it's a causative relation. Mental space *inflation* deals with *sharp and quick depreciation of currency*, while in the mental space *mushrooming* such elements as *quickness and continuousness* become dominating. Imagination connects information from the frames, structuring these mental spaces, and a comprehender infers *inflation is a quick process that can hardly stop*.

To sum up, each of the mentioned above theories suggests its own idea contributing to the insight into inferential mechanisms. Firstly, it is an idea of uniting all sensory pathways with a pathway of verbal communication in the framework of the process of secondary nomination of a phrase. The idea allows highlighting visuality as an element of the inferential mechanism. Secondly, it is an idea of metaphorical nature of reasoning. Inference as one of the mechanisms of reasoning should have a metaphoric nature. Thirdly, it is an idea of integration of concepts that can confirm the hypothesis about integration, mapping of inferences.

The review of the theories in the paper allows us to put forward a hypothesis that the inferences, appearing in the process of an idiomatic meaning formation, can leave traces which further influence the comprehension of the idiom in discourse. To verify the hypothesis we carried out an experiment on the material of Russian and English pieces of discourse containing idioms.

METHOD

The experiment consisted of two stages. In the first stage a group of subjects were asked to read some texts in Russian for 30 seconds. The texts contained a made-up situation (a maximum of 4 sentences, one of which had a target idiom). The target idiom was deliberately used improperly in the text, but its meaning was easily inferred from its components. The subjects were to read the situation and then answer 5 questions, to reveal their stream of thought in comprehending the idiom and the situation as a whole.

The aim of the experiment was to analyse:

1. whether separate components of a target idiom influence the whole interpretation of the idiom and the text containing it (to check this idea, it was necessary to observe the associations and determine whether they were connected with separate components of the target idiom).
2. whether the sense of the target idiom changes the whole interpretation of the text. We suggest that: a) when interpreting the text the emerging associations will be triggered by the target idiom; b) if the idiom sense influences the text, the improper use of the target idiom will cause a dissonance in comprehending; c) the sense of the target idiom might influence the further completion of the given situation by the subjects.
3. whether emotions influence the whole interpretation of the given text (we suggest that if there is no such influence, the subjects will describe the text as neutral, whereas if the influence takes place, the subjects will describe the text as positive or negative).

In the second stage, a similar experiment was carried out on original English texts containing idioms. Its results were to verify the previously received ones. The experiment was held with the participation of English teachers, whom we considered to be bilingual.

MATERIALS AND PROCEDURE

The method of the associative experiment was used to analyse the action of inferential mechanisms in a discourse complicated by an idiom on the material of the following texts:

1. It does not matter whether you attend the computer class or not. A bad dancer always complains of his legs¹ (*Хоть ходи на информатику, хоть не ходи. Все едино. Плохому танцору всегда ноги мешают*);
2. A lot of work to do since Friday. «I need to concentrate», - said Mr. Petrov, but the head was as empty as a belly of a crocodile² (*Куча работы с пятницы. «Нужно сконцентрироваться», - сказал Петров. Но в голове было пусто, как в брюхе крокодила*);
3. He got greedy as ever. He poured himself a full plate of soup but he only had a half of it. The eyes see, but the tooth is itching³. (*Как всегда пожадничал, налил себе полную тарелку супа и не съел даже половины. Да! Глаза видят, да зуб неймет*).
4. Out in front of the university a funny guy put a banner “those who are wet behind the ears are not allowed to come” (*Перед входом в институт какой-то остряк повесил плакат «Тем, кому без году неделя, вход воспрещен»*).

The texts were presented to the subjects at random and they were to read the texts for 30 seconds. The given period of time was enough to get the first impression of the texts but not enough to dwell upon them.

After reading the texts the subjects were asked to answer the following questions:

1. Write down the first association that came to your mind after reading the text.
2. Which word/words in the text could cause your association?
3. Do you appreciate the text as positive, neutral or negative?
4. Do you think the idiom was used properly in the text?
5. Could you complete the situation with a couple of sentences?

After the completion of the first part of the experiment, we decided to verify the received results among bilingual speakers, English teachers at Nosov Magnitogorsk State Technical University. The group of the teachers were presented similar texts taken from original English literature and asked the same questions.

The suggested texts were:

1. I'm holding down an appointment in the meantime, but I have got my eye on a nice little room up West where a smart little brass plate with Fred Hampton, M.B. on it would look dashed well;
2. The lecture was a work of art and stuffed as full of meat as an egg;
3. We would better get cracking if we are to be out of here before the storm is over.

After the completion of the second part of the experiment, we compared the results.

SUBJECTS

A group of 16 students and 6 English teachers from Nosov Magnitogorsk State Technical University were asked to read the abovementioned texts and then answer the given questions. The texts were distributed among the subjects at random. The students were 17-18 year old male and female young people with an upper-intermediate level of English, who study at different faculties: Metallurgical, Economics, Building and Architecture. The group of English teachers consisted mostly of women, who had an advanced or professional level of English and about 15-20-year experience of teaching.

The number of the subjects was less important for the experiment, as our main focus was on the content of the answers rather than on the statistic data of the recurrence of the subjects' answers.

RESULTS AND DISCUSSION

To analyse the subjects' answers to the first question in the questionnaire we compared the words making the target idioms with the subjects' associations. If they coincided, we considered the associations to be influenced by the target idiom components. Having counted possible coincidences between the words making the target idioms and the associations given by the subjects, we concluded that there were only 3 out of 16 associations that could coincide with the components of the target idioms (the associations that we considered to coincide with the components of the target idioms are highlighted in bold below). It made 18, 75% ($x = 3 \cdot 100 / 16$). Thus, approximately 81% of the given associations were not triggered by the words making the idiom. It means that in the majority of cases meanings of the separate word components of an idiom, being comprehended in discourse, influence neither the interpretation of the idiom, nor the discourse containing it.

1. The associations with the text situation *It does not matter whether you attend the computer class or not. A bad dancer always complains of his legs were laziness; nonsense/cop-out; figures/floor; slippers/clumsiness/illiteracy.*
2. The associations with the text situation *A lot of work to do since Friday. «I need to concentrate», - said Mr. Petrov, but the head was as empty as a belly of a crocodile were some projects to be completed; he does not meet the deadline; he has not finished his course work and also has a lot of home assignment to do; the expulsion will be on September, 15th.*
3. The associations with the text situation *Out in front of the university a funny guy put a banner "those who are wet behind the ears are not allowed to come" were a teacher, a*

child; a front-door security does not let in those students that have failed exams; an unintelligent student; first-year students cannot come in.

4. The associations with the text situation *He got greedy as ever. He poured himself a full plate of soup but he only had half of it. The eyes see, but the tooth is itching were greed; green eyes; dinner; appetite.*

As we see, there were only 4 indirect associations with the word components of the target idioms in the text, the rest of the associations were triggered by the whole text. Therefore, the data of our experiment have not confirmed the premise of the theory of semantic analyzability of idioms (Cacciari & Levoranto 1998) that direct meanings of the idiom components underlie the interpretation of the idiom itself.

Thus, we can say that in the majority of cases, the traces of primary naming of the original situation underlying the idiom meaning do not remain at the moment of the idiom comprehension in discourse. The question whether they influence the process of forming inner visuality of the idiom requires extra checking.

The results of the first part of the experiment, carried out in Russian, had to be rechecked to conclude whether similar results could be observed if the experiment was carried out in English. The dual check allowed us to understand whether the results depended on the used language or not. Thus, similar English texts containing idioms were read by six English teachers for 30 seconds. After that, they were to answer the first question of the questionnaire.

The associations with the first situation were *no place to live in, good attentive neighbours*, the associations with the second one were *a famous professor, a lecture room full of students*, the associations with the third situation were *nasty weather, a shelter*. Having checked possible coincidences between the words making the target idioms and the associations given by the teachers, we concluded that there were no coincidences between the teachers' associations and the components of the target idioms. Thus, the results of the second part of the experiment verified the results of the first part of the experiment, which allowed us to conclude that a language of communication (English or Russian in our case) does not influence the way of comprehending a discourse complicated by an idiom.

To check whether the associations of the subjects are caused by cognitive processing of the target idiom as a whole (rather than its components) we tried to describe one of the target idioms, for instance *a bad dancer always complains of his legs (a bad workman complains of his tools)* from the viewpoints of: the conceptual metaphor theory (Gibbs & Colston 2012), conceptual integration theory (Fauconnier 2010) and a cognitive model of actual meaning of an idiom (Dobrovol'skij 2014). It could let us compare our theoretical suppositions and the hypothesis with the results of the experiment (the associations of the subjects and the subjects' answers to the questions).

According to the theory of the conceptual metaphor (Gibbs & Colston 2012) at the heart of imagery perception of an idiom there is a human capability of perceiving a substance from the perspective of some other ones that are more primitive but metaphorical by nature. Metaphorical and metonymical concepts structure our reasoning and experience, and language is connected with a lot of physical, ontological, and case-effect associations. If we follow the logic of the conceptual metaphor theory, we should suppose that at the heart of the idiom *a bad dancer always complains of his legs* there is either a metonymical causation (a subject instead of an attribute – *clumsy legs* instead of *bad dancing skills*) or an orientation metaphor, if we deal with an emotional context (good is up/ bad is down or dancing like sublime is up/ clumsy legs, bad dancing skills are down). Nevertheless, it is premature to say that there is a primitive metonymic or metaphoric projection in inferring a sense of an idiom.

To prove the existence of the projection there might be a higher percentage of similar associations (like *clumsy legs*, *slippers*) in the course of the experiment.

Considering the idiom “*a bad dancer always complains of his legs*” from the perspective of the conceptual integration theory, we highlighted two initial domains *legs* and *dancing*. The domains are linked through a metonymical projection and make up a blend containing, on the one hand, *grace* and *elegance* inherent in the very nature of a dance and, on the other hand, *clumsiness*, *awkwardness*, *club-footedness while walking* inherent to some people. The cognitive processing results in the emergent blend containing such knowledge features as *a bad work*, *excused by a ridiculous reason*. Thus, the results of the experiment confirm our conclusions. Indeed, among the associations with the idiom *a bad dancer always complains of his legs* there were such associations as *laziness*, *nonsense/cop-out*, reflecting the emergent structure of the blend. It allows us to think that the result of the idiom interpretation is cognitive processing of the idiom as a ready-made unit, acquiring new individual senses (*a man, who is unskillful in some business, shouldn't look for ridiculous reasons to explain his failures*) different from the common meaning of the idiom.

A cognitive model of actual meaning of an idiom (Dobrovol'skij 2014) considers idiom interpretation from the perspective of background knowledge which is processed at the moment of idiom comprehension. The main idea of the theory (Dobrovol'skij 2014) is a conclusion that, firstly, when a motivated idiom is being interpreted, a comprehender experiences certain quasi-visualities which are not connected with the actual meaning of the idiom and, secondly, at the heart of every motivated idiom there are quasi-visual representations bearing some inferential knowledge extracted from the initial conceptual structure.

In this regard, there appears a dilemma whether to attribute the associations *laziness*, *nonsense/cop-out*, *figures/floor*, *slippers/clumsiness/illiteracy* either to quasi-visual representations that are not connected with the actual meaning of the idiom or to the knowledge inferred from the conceptual structure of the idiom *a bad dancer always complains of his legs*. The author of the cognitive model of actual meaning of an idiom (Dobrovol'skij 2014) does not resolve the dilemma directly. He says that visuality is not based on visual representations. It depends on knowledge and operations on it. That is why, to attribute the given associations either to visual representations or to quasi-visualities, it is necessary to investigate possible types of cognitive operations on knowledge structures that are verbalized through the idiom. Among such cognitive operations are: 1) inserting one cognitive structure into another one, 2) elimination of a cognitive structure, 3) highlighting a cognitive structure, 4) repeating of a cognitive structure (Dobrovol'skij 2014). These operations are reviewed above.

When analyzing the way we interpret the idiom *a bad dancer always complains of his legs* from the perspective of D.O. Dobrovol'skij's theory (Dobrovol'skij 2014), we deal with a frame *dancing*. This frame contains such irrelevant features as *clumsiness*, *awkwardness*, *club-footedness*, which later makes a comprehender rethink the sense of the idiom and infer a new meaning *ridiculous and contrived reason that justifies a bad work*. Taking for granted that visuality is based upon our knowledge and quasi-visual representations, we suggest that the subjects' associations depend on both the quasi-visual representations and the visualities caused by them. Nevertheless, the link we are speaking about is very weak and requires confirmation by a larger number of facts. In this regard, rethinking the results of our experiment we see that only a small percent (18, 75%) of the given associations were connected with the original situation that had triggered the formation of the idiom and resulted in its overthinking. The given percentages were received in the primary evaluation of the subjects' associations with the words making target idioms (the process of the evaluation and the calculations are mentioned above). Only two of the four associations with the idiom a

bad dancer always complains of his legs could be indirectly related with dancing. They are *floor and clumsiness*.

Having analyzed the idiom *A bad dancer always complains of his legs* from the perspective of the three theories (theory of conceptual metaphor (Gibbs & Colston 2012), conceptual integration theory (Fauconnier 2010) and a cognitive model of actual meaning of an idiom (Dobrovolskij 2014), we verified our conclusions by the results of the experiment:

1. The associations given by the subjects do not confirm the hypothesis that the traces of inferences after primary naming of the original situation do not remain at the moment of understanding the idiom in discourse.
2. Cognitive processing of an idiom results in new senses that cannot be caused or connected with the meanings of the idiom components. Thus, at the heart of the inferential mechanism, there must act such cognitive operations that transform, restructure and unite conceptual knowledge that underlay primary naming of the original situation that had triggered an idiom formation process.

The next point in the experiment was a question whether the idiom interpretation changes the whole understanding of the text. We suggested that: 1) when interpreting the text the emerging associations will be primarily connected with the interpretation of the idiom in it; 2) if the interpretation of the idiom influences the text understanding, the irrelevant idiom will cause a cognitive dissonance by a hearer. We also assumed that the idiom interpretation will influence further complementation of the situation by subjects.

The results of the experiment show that more than a half of the associations (56, 25 %) were triggered by the implied senses of the idioms in the texts. The rest of the associative reactions reflected the whole understanding of the text. Thus, the associations with a target idiom *a bad dancer always complains of his legs* were *floor* and *clumsiness*. Three out of the given associations for the target idiom *the head was as empty as a belly of a crocodile* were indirectly connected with the idiom meaning, as all of them implied some mental work (*some projects to be completed; he does not meet the deadline; he has not finished his course work and also has a lot of home assignment to do*). The associations with the idiom *wet behind the ears* were *a child* and *first-year students cannot come in*. Two of the associations with the idiom *the eyes see, but the tooth is itching* were *green eyes* and *greed*. The percentage were calculated according to the formula $x = (2+3+2+2) * 100 / 16$.

10 subjects out of 16 pointed out that the sense of the idiom causes a certain dissonance with the text. It confirmed the hypothesis that if the interpretation of the idiom influences the text understanding, the irrelevant idiom will cause a cognitive dissonance by a hearer.

The received results of the first part of the experiment were verified by the results of the second part of the experiment. The teachers' associations after reading the text *I'm holding down an appointment in the meantime, but I have got my eye on a nice little room up West where a smart little brass plate with Fred Hampton, M.B. on it would look dashed well were no place to live in and good attentive neighbours*. We consider both the associations to be under the influence of the target idiom *to get an eye on something*. The first of the associations implied that if a person *had got an eye on something*, then he/she did not have it, and the second contained the word *attentive* which implied that if a person *had got an eye on something*, then he/she *was attentive with something*. Though the abovementioned influence of the idiom on the associations might seem far-fetched, we consider it to be true, as the associations are closely connected with our consciousness, and the ties between the emerging associations and the mental activities cannot always be obvious. The associations with the target idiom *as full of meat as an egg* were *a famous professor, a lecture room full of*

students. As in the previous case, there is no explicit connection between the associations and the idiom. Nevertheless, if the lecture was not interesting and informative, there would not be many students in the lecture room and the professor would not probably be famous. There were no associations with the target idiom *get cracking* in the text *we would better get cracking if we are to be out of here before the storm is over*. It occurred due to the strong influence of the word *storm* that played a key role in the text interpretation. We consider the last example to be an exception rather than regularity. In this way, the percentage of the second part of the experiment made approximately 66% ($x = (2+2) * 100/ 6$).

We did not ask the English teachers to look for any dissonance with the text, as the target texts were taken from original literature.

Relying upon the received results we have come to a conclusion that interpretation of the idiom influenced the whole understanding of the text. An interesting fact confirmed our conclusions. The last task of the experiment was to complete the given situation with a couple of sentences. In spite of the fact that associations of some subjects did not reflect the interpretation of the target idiom it was the target idiom that they relied upon when completing the situation. Thus, it confirmed the idea that every unit in a discourse (even the smallest one) can play a crucial role in communication (Palacio & Gustilo 2016). Let's look at it.

Situation: A lot of work to do since Friday. I need to concentrate, - said Mr. Petrov, but the head was as empty as a belly of a crocodile;

Associations: *some projects to be completed, he does not meet the deadline, he has not finished his course work and also has a lot of home assignment to do, the expulsion will be on September, 15th*.

The ways the subjects completed the given situation:

The 1st way: then he took a pizza from the fridge, switched on a computer, started playing a computer game and let the work be unfinished till tomorrow.

The 2nd way: "Then I have to fill the belly", - thought Mr. Petrov and started to work.

The 3^d way: "I need to take a short break!" – Mr. Petrov thought. What can I start doing then? He wanted neither to eat, nor to sleep and gambling wasn't his cup of tea as well.

The 4th way: "I have to take a nap, otherwise, I will not meet the deadline. If I sleep well, I will manage to speed up the work on the project.

We observed such a phenomenon with the other texts presented to the subjects. Thus, we see that when comprehending the texts, the subjects had to infer the sense of a target idiom and then transform the extracted sense with regard to the whole text of the situation. Hence, we consider that the inferential process involved all the data at hand: 1) conceptual knowledge, underlying the idiom; 2) conceptual knowledge, underlying the rest of the words in the text; 3) emotions (in the first part of the experiment 10 out of 16 subjects noted that the idioms in the texts caused either negative, or positive attitude respectively and 5 out of 6 subjects did the same in the second part of the experiment); 4) the background situation. At the moment of the experiment the subjects were students. The text *A lot of work to do since Friday. I need to concentrate, - said Mr. Petrov, but the head was as empty as a belly of a crocodile* does not directly point to a student called Petrov. Nevertheless, all the associations given by the students were connected directly with a student life.

We did not ask the teachers to complete the texts given for the analyses, as the texts presented complete passages. This approach was stipulated by two reasons. Firstly, the original English texts had to be transformed, if we wanted the subjects to complete them. It was not the aim of our experiment. Secondly, there was no need to compare the results received on the material of the Russian texts with the ones received on the material of the English texts. The main focus of the experiment was the analysis of the ways the students

completed the given texts rather than the influence of the used language on the subjects' ways of completion.

Using the conceptual integration theory (Fauconnier 2010) and a cognitive model of actual meaning of an idiom (Dobrovolskij 2014) we tried to present the process of double inferencing at the moment of interpreting the text *A lot of work to do since Friday. I need to concentrate, - said Mr. Petrov, but the head was as empty as a belly of a crocodile.*

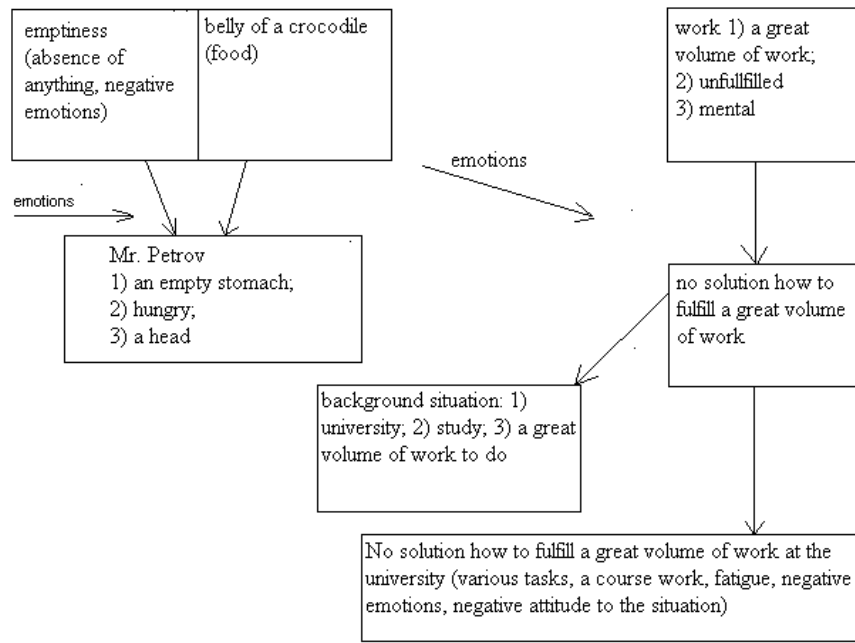


DIAGRAM 1. A model of conceptual integration in the process of double inferencing while comprehending a text complicated by an idiom

In the diagram we show a model of conceptual integration in the process of double inferencing while comprehending a text complicated by an idiom *a lot of work to do since Friday. I need to concentrate, - said Mr. Petrov, but the head was as empty as a belly of a crocodile.* We consider that in the process of interpreting the idiom *as empty as a belly of a crocodile* two concepts are mapped on each other by a metaphorical link. They are *emptiness* and *a belly of a crocodile*. In cognitive processing it is common elements that are highlighted. In the first space it is *absence of anything* and in the second one it is *food*.

Elements that are highlighted in each of the spaces with the help of cognitive operations (inserting one cognitive structure into another one, elimination of a cognitive structure, highlighting) get into a blend. Imagination picks up and connects some missing information from the frames that structure these mental spaces and a comprehender concludes that there is *no food in the stomach, there is a feeling of hunger*. As the results of our experiment show, the final blend (an emergent blend (Fauconnier 2010) contains emotions that can be caused by separate elements of the mental spaces. In our case the element *absence of anything* can contain a negative appreciation that is borrowed into the final blend. We also suppose that emotions trigger inferential process influencing the whole thought process (here we should say that the last hypothesis requires additional experimenting). The final blend *there is no food in the stomach, there is a feeling of hunger* is partially transformed into a new mental space *man* that contains such elements as *an empty stomach, a feeling of hunger*.

In cognitive processing the main elements of the mental space *man* are suppressed as irrelevant to the main contents of the text and the elements *a head and emptiness* are

highlighted. At the same time, a new mental space *work* appears, where elements *a great volume, unfulfilled, mental* are being focused on. When uniting these mental spaces into a new blend, the common elements *emptiness, a head, a great volume of unfulfilled mental work* are borrowed and a conclusion is made *Mr. Petrov has no decision how to fulfill this great volume of mental work*". In the last stage, emotions interfere into the process of cognitive processing again and cause an emotional assessment of the situation. In the long run, the whole situation is assessed on the basis of background knowledge. A common conclusion will be *Mr. Petrov has no decision how to fulfill a great volume of tasks at the university (probably certain tasks such as a course work). He is tired and experiences negative emotions.*

The results of the second part of the experiment fully coincided with those of the first part. It allows us to claim that the put forward hypothesis about inferential mapping or double inference that appears in comprehending a discourse containing an idiom can be true for any language.

CONCLUSION

The results of the discussion and the experiment show that in the majority of cases meanings of the separate word components of an idiom, being comprehended in discourse, influence neither the interpretation of the idiom, nor the discourse containing it. Nevertheless, the small percent of the associations, indirectly connected with the components of the target idioms, show that sometimes such an influence can be observed. The traces of inferences after primary naming of the original situation do not remain at the moment of idiom comprehension in discourse. At the same time, cognitive processing of an idiom results in new senses that cannot be caused or connected with direct meanings of the idiom components. Thus, at the heart of the inferential mechanism, there must act such cognitive operations that transform, restructure and unite conceptual knowledge that underlay the primary naming of the original situation that had triggered an idiom formation process.

The interpretation of an idiom in discourse makes an impact on the interpretation of the discourse in general. Thus, when comprehending a text complicated by an idiom, double inference takes place. Firstly, overthinking of an idiom occurs, and its common and personal understanding takes place (personal and common sense is inferred). Secondly, the inferred sense is imposed on the understanding of the whole text and a new inferred sense appears.

In double inference, not only imposition but also suppression of conceptual knowledge takes place. In particular, the whole understanding of the text depends on common as well as personal understanding of an idiom. We consider that there can be situations with a reverse effect, when a sense of an idiom is being ignored to understand the whole text, but these cases require experimenting.

Conceptual integration, transformation and inference are always accompanied by emotional appreciation and are under the influence of a current background situation and knowledge. Hence, the inferential process involves all the data at hand: 1) conceptual knowledge, underlying the idiom; 2) conceptual knowledge, underlying the rest of the words in the text; 3) emotions; 4) the background situation.

Taking into consideration that the experiment was conducted on the material of English and Russian languages, we can conclude that double inference is a universal linguistic phenomenon.

END NOTE

- ¹ The Russian proverb *a bad dancer complains of his legs* has a precise equivalent *a bad workman complains of his tools*.
² The phrase *the head was empty as a belly of a crocodile* was used to say *there were no ideas how to do the work*.
³ The Russian proverb *the eyes see but the tooth is itching* has a partial English equivalent *There's many a slip 'twixt cup and lip* and means "there is no opportunity to influence the course of events, to rectify the situation, that is, you can only watch from the sidelines".

REFERENCES

- Alefirenko, N. F. (2008). *Phraseology and Cognitive Science in the Aspect of Linguistic Postmodernism*. Belgorod: Belgorod State University Press.
- Alefirenko, N. F. (2015). Cognitive-semiotic mechanisms of phraseme building. *Journal of Linguistics*. Vol. 66(2), 81-99.
- Baranov, A. N. (2008). *The Aspects of the Theory of Phraseology*. Moscow: Znak Press.
- Bergen, L., Levy, R. & Goodman, N. (2016). Pragmatic reasoning through semantic inference. *Semantics and Pragmatics*, Vol. 9 (20), 1-83.
- Cacciari, Cr. & Levoranto, M. Ch. (1998). The effect of semantic analyzability of idioms in metalinguistic tasks. *Metaphor and Symbol*, Vol. 13(3), 159-177.
- Dobrovolskij, D. O. (2014). On the semantic structure of idioms. In V. Durante (Eds.), *Fraseologia y paremiología: enfoques y aplicaciones* (pp. 23-32). Madrid: Instituto Cervantes.
- Emets, T. V., Baryshnikova, Yu. V., Trutnev, A. Yu., Suvorova, E. V. & Akhmetzyanova, T. L. (2018). Logical and linguistic strategies for translating complex sentences in literary texts of natural languages. *XLinguae*. Vol. 11(2), 3-16.
- Fauconnier, G. (2010). *Ten Lectures on Cognitive Construction of Meaning*. Beijing: Foreign Language teaching and research Press.
- Gibbs, R. W., Jr. & Colston H. L. (2012). *Interpreting Figurative Meaning*. Cambridge University Press.
- Goldman, S. R., McCarthy, K. S. & Burkett, C. (2015). Interpretative inferences in literature. In E. J. O'Brien, A.E. Cook, & R. F. Lorch (Eds.), *Inferences during reading* (pp. 386-415). Cambridge, England: Cambridge University Press.
- Gvozdev, Yu. A. (2010). *The bases of Russian Phrase-formation*. Rostov-on-Don: Logos Press.
- Harvey, D. Y. (2014). Semantic inference in language production and comprehension: Same or separable loci? PhD thesis. Rice University. Retrieved September 17, 2017 from <https://hdl.handle.net/1911/77166.pdf>
- Jaufillaili, J., Sujatna, E. T. S., Indira, D. & Indrayani, L. M. (2017). Vague Languages Implied through Disparagement Functions in Comic Strips. *3L: The Southeast Asian Journal of English Language Studies*. Vol. 23(4), 66– 76.
- Kopylenko, M. M. (1978). *Essays on the General Phraseology*. Voronezh: Voronezh State University Press.
- Kubryakova, E. S. (2004). *Language and Knowledge: on the Road of Gaining Knowledge About Language: Arts of Speech From the Cognitive Point of View*. Moscow: Languages of Slavonic Culture Press.
- Noordman, L. G. M. & Vonk, W. (2015). Inference in discourse, psychology of. In J. D. Wright (Eds.), *International Encyclopedia of the social & behavioral sciences* (pp. 37- 44). Amsterdam: Elsevier.
- Palacio, M. A. & Gustilo, L. (2016). A Pragmatic Analysis of Discourse Particles in Filipino Computer Mediated Communication *GEMA Online® Journal of Language Studies*, Vol. 16(3), 1-19.
- Peregrin, J. (2014). *Inferentialism: Why Rules Matter?* UK: Palgrave Macmillan.
- Suvorova, E. V. & Polyakova, L. S. (2018). Types of inferences in discourse. *Arab World English Journal*. Vol. 9(1), 294-306.
- Teliya, V. N. (1996). *Russian Phraseology: Semantic, Pragmatic, Linguistic and Cultural Aspects*. Moscow: Languages of Slavonic Culture Press.
- Yeari, M. & van den Broek, P. (2015). The role of textual semantic constraints in knowledge-based inference generation during reading comprehension: A computational approach. *Memory*. Vol. 23(8), 1193-214.
- Yeganehjoo, M. & Thai, Y. N. (2012). Lexical access in production of idioms by proficient L2 learners. *3L: The Southeast Asian Journal of English Language Studies*. Vol. 18(1), 87-104.