

COMPREHENSION AND INTERPRETATION OF PROVERBS IN L2

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1. Introduction

The ability to understand and interpret proverbial sayings has been of great interest to researchers in many areas of psychology and psycholinguistics, attempting to account for the representation and processing of figurative language. Psycholinguists have researched proverb comprehension with the aim of uncovering the unconscious mental processes employed in understanding nonliteral language.

As Gibbs and Beitel rightly notice, empirical attempts to define proverbs have resulted in as many as 55 different definitions. For the purpose of the present discussion, I will adopt Gibbs' (1995: 134) view of proverbs, under which proverbs are "familiar, fixed, sentential expressions that express well-known truths, social norms, or moral concerns". While most proverbial expressions are metaphorical in nature (e.g., *the fish rots from the head first*), some of them may be based on personification (e.g., *misery loves company*), hyperbole (*it's easier for a camel to go through a needle's eye than for a rich man to enter the kingdom of God*), or paradox (*the nearer the church, the farther from God*), the presence of meter (as in the proverb *you can lead a horse to water, but you can't make him drink*), rhyme (*haste makes waste*), slant rhyme (*a stitch in time saves nine*), alliteration (*live and let live*), assonance (*a rolling stone gathers no moss*), and parallelism (*a penny saved is a penny earned*). (Gibbs and Beitel 1995). To this list, Kemper (1981) adds another important characteristics of proverbs, namely the fact that these expressions exhibit a "generic" syntactic form, whereby the use of the imperative mood or the subjunctive present tense is very common.

For second language researchers, the issue of proverb comprehension and production seems particularly interesting in light of the fact that it is precisely figurative language that poses problems even for otherwise fluent second/foreign language learners. This paper is an attempt to address the question of com-

prehension and interpretation of proverbs by L2 learners. The paper thus begins with a review of traditional approaches to proverb understanding and then focuses on two most prominent contrasting accounts of figurative language processing, namely the Extended Conceptual Base Hypothesis and the Conceptual Metaphor Hypothesis. It then describes the study into the comprehension and interpretation of proverbs by L2 learners and examines implications that the results of the study might have for the model of bilingual metaphorical competence.

2. Traditional views of proverb understanding

Traditional approaches to interpreting proverbs and other kinds of figurative language are based on the assumption that literal language is a veridical reflection of thought and the external world, while figurative, or nonliteral language distorts reality and aims at serving special rhetorical purposes. As Bock and Brewer (1980) observe, such approaches postulate the existence of special mechanisms for figurative language comprehension, generally proceeding from the recognition of semantic anomaly at the literal level. Bock and Brewer refer to those approaches as *multiple process* accounts of proverb comprehension in that, under these views, figurative meaning computation depends on and follows from the earlier, obligatory recognition of literal anomaly.

Temple and Honeck (1999), in turn, employ the term *multistage model of figurative language understanding*, in order to capture the primacy of literal meanings that, on the traditional view, must be developed before figurative meanings. This conventional position on the issue of figurative language understanding has evolved from the writings of Clark and Lucy (1975), Grice (1975), and Searle (1979).

The multistage model, as described by Temple and Honeck (1999) presupposes three stages in which the listener processes figurative expressions. Confronted with an utterance, the listener tries to infer the speaker's intended meaning, assuming, in accordance with Grice's cooperative principle, that the speaker intends to convey truthful and relevant information. Accordingly, the first stage of the model presupposes the computation of the literal meaning of the utterance. In the second stage, the listener determines if this literal rendering is appropriate, taking into account various contextual constraints, such as for example, knowledge of the immediate situation or other relevant background knowledge. If the literal meaning is found to be appropriate, then further processing is stopped. If, however, it is determined to be defective, processing continues into stage three, in which the listener attempts to construct a new, figurative meaning for the utterance, consistent with the context provided.

Gibbs and Beitel (1995) identify three implications that follow from traditional approaches to proverb understanding. First of all, determination of a figurative meaning of any proverbial expression is obligatorily preceded by the anal-

ysis of the sentence's literal meaning. Secondly, comprehending proverbial expressions requires identification of a defective literal meaning before searching for a figurative meaning. If the literal meaning of a sentence makes sense in context, figurative meaning will be ignored and not searched for. It is only the failure to provide the right context in which the literal meaning might make sense that triggers the listener to seek an alternative, figurative interpretation.

Finally, the traditional view postulates that the derivation of figurative meanings requires additional inferential work and special cognitive processes, by means of which the listener determines what the speaker might mean. This is in contrast to literal language comprehension, which, traditionally viewed, requires very little cognitive effort.

Data supporting the hypothesis that the literal analysis of proverbs precedes their nonliteral interpretations primarily come from experimental studies of proverb understanding in isolation (Bock and Brewer 1980; Clark and Lucy 1975; Honeck et al. 1980; Janus and Bever 1985). These data are consistent with the early developmental research into children's proverb interpretation, which supports the view that proverb comprehension requires special, abstract thinking skills.

However, results of many empirical studies of figurative language processing conducted in the past two decades have demonstrated the traditional view to be untenable. These studies have focused on measuring the amount of time needed to process figurative expressions in isolation or in discourse situations supporting a saying's either literal or figurative interpretation. Under the traditional view of proverb processing, according to which figurative language understanding necessitates the earlier literal analysis of proverbial expressions, these expressions should take additional effort to be processed compared with literal speech. Numerous recent reaction-time studies (e.g., Gibbs 1986a, 1986b; Gibbs and Gerrig 1989a, 1989b; Gildea and Glucksberg 1983; Glass 1983; Hoffman and Kemper 1987; Kemper 1981; Pollio et al. 1984) have repeatedly shown that figurative language utterances need not take longer to understand than literal utterances. As Temple and Honeck (1999) observe, results coming from this research are usually interpreted as favoring one of the two proposed models of figurative language understanding. If the expression's figurative meaning is shown to be understood faster than its literal meaning, then this is typically taken as support for a *direct access model* (Gibbs 1980, 1983, Gibbs 1986b; Kemper 1981; Schweigert and Moates 1988), under which figurative meanings are automatically accessed from memory, without an earlier generation of the utterance's literal meaning.

In turn, experimentally demonstrated lack of difference between literal and figurative processing times is interpreted as support for a *parallel model*, whereby both literal and figurative meanings are generated independently and simultaneously (Estill and Kemper 1982; Inhoff, Lima and Carroll 1984; Ortony et al. 1978).

Although the majority of the quoted studies into the issue of figurative language processing have focused on metaphors, idioms, and indirect requests, results obtained from this research are deemed equally relevant for the question of how people understand and interpret proverbs.

A small literature documenting research using proverbs has indicated that familiar proverbs can take less time to comprehend than their literal paraphrases, and that the processing of novel proverbial sayings, provided they are presented in context, need not require additional inferences beyond those needed to comprehend literal language.

However, the issue that still needs to be addressed with reference to proverbs is how exactly language users make sense of proverbs' figurative meanings. Among the more recent attempts at accounting for the processing of proverbs, the most prominent and yet controversial approaches have been the Extended Conceptual Base Theory and the Conceptual Metaphor Hypothesis. I shall discuss each of them in more detail.

3. The Extended Conceptual Base Theory (EBCT)

The Extended Conceptual Base Theory (henceforth ECBT) has been developed and experimentally tested since 1980 by Honeck and his colleagues (Honeck and Hoffman 1980; Honeck and Kibler 1984, 1985; Honeck, Riechmann and Hoffman 1975; Honeck and Temple 1994, 1996; Honeck et al. 1980). The ECBT views proverb comprehension as essentially a problem-solving process, whereby a proverb interpreter solves a series of smaller problems in order to reach a larger goal, namely that of discerning the speaker's intended meaning.

The ECBT postulates four phases in the process of interpreting proverbs: the problem recognition phase, the literal transformation phase, the figurative phase, and the instantiation phase. As Temple and Honeck (1999) observe, the ECBT has emerged from the older multistage models of figurative language comprehension, and it shares with them the view that figurative comprehension results from serial processes during which the literal meaning of a proverb is transformed to help construct a nonliteral interpretation.

Thus, during the first, problem recognition phase, the listener recognizes the discrepancy between the literal meaning of the proverb and its context. In the second, literal transformation phase, the literal meaning of the proverb is elaborated and recognized. As a result of these elaboration processes two or more contrasting ideas emerge in the course of proverb interpretation. The third, figurative phase, involves the creation of the so-called conceptual base, which constitutes the basis for building an analogical relationship between the contrasting sets of ideas. Since the contrasting ideas cannot be reconciled on a literal basis, the conceptual base is necessarily abstract and general.

Honeck, Riechmann and Hoffman (1975: 409) define the conceptual base as "a recoding of propositional structure into a new form", the propositional structure itself referring to the logical relationships between the constituents of a linguistic construction. To provide Honeck's (1975) example, in the proverb *Great weights hang on small wires*, the propositional structure entails our knowledge that there is a relationship of hanging, that weights hang on wires, that the weights are great, while the wires small. In contrast, the proverb's conceptual base could be expressed as the following interpretation: 'The outcome of important events often depends on seemingly minor details'. Thus, propositional structure constrains the content of the conceptual base, at the same time being distantly related to it, in that general background knowledge is also involved in constructing the conceptual base.

Finally, in the last, instantiation phase, the conceptual base is extended to new events. In other words, this phase permits the application of the proverb to events coming from very different domains. As Honeck and Temple (1994) claim, it is likely that analogy formats are employed in connecting figurative meanings and instantiated events. The instantiation phase is primarily used when people try to provide a paraphrase of a proverb's figurative meaning. This phase of proverb comprehension has also been referred to by Honeck and Temple as the revised figurative meaning phase, the term itself emphasizing the fact that instantiation of a figurative meaning causes a change in that meaning.

To sum up, where the surrounding context conflicts with the literal interpretation of a proverb, the listener has to judge the literal mental model as an unsatisfactory solution to the problem of the speaker's intended meaning. The literal meaning must then be used as a basis for constructing a newer, preferred meaning. To perform this, the listener uses the literal mental model, in conjunction with whatever contextual information is provided, as well as with his/her background knowledge, in order to transform this model into a more satisfactory solution. Thus, the ECBT is strictly set within the problem-solving framework.

To provide an example, upon hearing the proverb *A peacock should frequently look at its legs*, the listener first recognizes that the literal meaning of the expression makes no sense in the discourse context. He or she then reorganizes and elaborates on this literal meaning in the literal transformation phase, identifying the contrast between the beauty of a peacock and the ugliness of its legs. These two contrasting ideas are themselves recognized as potentially referring to some analogical contrast in the communicative situation. In the next, figurative phase, the listener creates the conceptual base, allowing for the reconciliation of the sets of contrasting ideas identified in the proverb and present in the communicative situation. In the last, instantiation phase, the listener can extend the conceptual base to new events, thus being able to recognize the similarity between, for example, *A peacock should frequently look at its legs*, and an ex-

pression such as, *The dandy-looking man wasn't aware that he had some annoying habits* (Gibbs and Beitel 1995: 143). A widely different view on proverb understanding has been developed by Gibbs and his colleagues, within the so-called Conceptual Metaphor Hypothesis, to which I will now turn.

4. The Conceptual Metaphor View

Contrary to what ECBT claims about the mechanisms underlying proverb comprehension, Gibbs, Johnson and Colston (1996) forcefully argue against viewing proverb understanding as analogical problem solving. According to Gibbs et al. (1997), a problem-solving approach to proverb comprehension fails to account for the fact that the process of understanding proverbs is constrained by specific conceptual knowledge, most of which is structured metaphorically. Thus, the major tenet of the Conceptual Metaphor Hypothesis (CMH in short) is that the ability to understand proverbs evidences the presence of metaphorical schemes which are ubiquitous in our everyday thought, and that understanding the meaning of proverbs is based on drawing detailed, metaphorical mappings between dissimilar domains of knowledge. The CMH espoused by Gibbs et al. (1997), originates in Lakoff and Turner's (1989) approach towards figurative language understanding, captured in their so-called Great Chain Metaphor Theory.

The most important assumption underlying Lakoff and Turner's (1989) view of proverb understanding, captured in their GCMT, is the fact that the conceptual and experiential basis of linguistic categories and constructs is of primary relevance for studying language structure and use. In their writings, Lakoff and Turner have discussed linguistic evidence testifying to the fact that many aspects of language structure and use are intimately connected to people's conceptual systems and that much of our cognition is constituted by metaphorical modes of thinking. Space limitations prohibit a detailed analysis of Lakoff and Turner's Great Chain Metaphor Theory. Suffice it to mention at this point the most relevant tenets of the GCMT, which are of importance to the present discussion.

The first one presupposes that proverbs are deeply embedded in culture, while the second that people's understanding of proverbs operates by the so-called Metaphorical Mapping Principle. The principle views proverbs as a form of metaphor, constituting part of the linguistic heritage of a culture and prestored in human conceptual system. The proverb user is, under this view, equipped with full knowledge of generic-level source and target domain information, operating in the course of proverb comprehension. Proverbs are thus based on image schemas, or built-in metaphors that are overlearned and accessed automatically. Because the proverb is prestored, it follows that its specific-level meaning becomes quickly available to the hearer, who exercises little control or choice in interpreting its figurative meaning. Lakoff and Turner described the generic-level schema as being extracted by the GENERIC IS SPECIFIC metaphor, the pro-

cess itself being automatic and effortless. The GENERIC IS SPECIFIC metaphor effects proverb understanding, in that it entails the analogical mapping of two complex ideas, where the generic one (e.g., a situation), is understood in terms of the specific (e.g., a proverb). Thus, the idea that people have the GENERIC IS SPECIFIC metaphor as part of their ordinary conceptual systems motivates why proverbs are created and mean what they do to most speakers.

To use one of Lakoff and Turner's examples, the proverb, *Burned lips on broth now blows on cold water*, requires the extraction of its generic-level schema stated as "a traumatic experience can lead to an automatic response to all situations even remotely similar, even when the response is completely inappropriate" (1989: 166). However, Lakoff and Turner do not elaborate on how exactly such generic-level schemas might be contained in the specific-level schemas.

The idea of proverbs being metaphorically motivated has been developed by Gibbs et al. (1997), and constitutes the major premise of his CMH. Much of Gibbs' research on figurative language understanding has experimentally investigated possibilities suggested by cognitive linguists' assumptions about the role of conceptual metaphors in motivating figurative meanings of nonliteral language, such as idioms, proverbs, creative metaphors, and various conventional expressions (Gibbs and Beitel 1995).

Following Lakoff and Turner's (1989) proposal that various generic-level metaphors motivate meanings of proverbs, Gibbs et al. (1997), have suggested that the generic-level metaphor GENERIC IS SPECIFIC maps knowledge from specific domains to very general events in the course of proverb comprehension and interpretation. The GENERIC IS SPECIFIC metaphor provides, according to Gibbs, a general mechanism for understanding the general in terms of the specific, which is one of the most essential characteristics of proverbs.

On this view, proverb understanding involves a conceptual mapping of one specific-level schema from the source domain (i.e., the proverb) onto a generic-level schema from the target domain. While specific-level schemas are concrete, memorable, easily imaginable, and related to everyday experiences, generic-level ones are generalizable in that they can be applied to a variety of cases (Gibbs and Beitel 1995). The mappings from familiar source domains onto less familiar target domains are unidirectional and metaphorical, so that one domain of knowledge is employed to structure another, but not the reverse.

To illustrate how the figurative meanings of proverbial expressions are viewed under the CMH as motivated by conceptual metaphors, let us consider a few examples of proverbs discussed by Gibbs. The English proverb *One rotten apple spoils the whole barrel* reflects the metaphoric idea that PEOPLE ARE INANIMATE OBJECTS. This means that when processing this proverb the language user maps the concrete source domain of rotten fruits onto the more abstract target domain of bad people, thinking of a bad person's harmful influence on his or her

surroundings as being metaphorically similar to the way in which a rotten apple spoils the whole barrel.

In turn, the expression *A rolling stone gathers no moss* is partly motivated by the pervasive conceptual metaphor LIFE IS JOURNEY, in which we interpret the proverb by mapping our more detailed knowledge of the source domain of journeys onto the more general and abstract target domain of life. This metaphorical mapping of knowledge from a source domain onto a target domain helps individuals think of a person's life as being metaphorically similar to the way a rolling stone gathers no moss, so that the person never settles down in life and exercises little control of his or her actions. The specific inferences resulting from the metaphorical mappings between journey and life constrain our interpretation of the proverb and our knowledge of the mental image for this proverb (Gibbs et al. 1997).

Similarly, under the CMH, the proverb *Don't put all your eggs in one basket* is specifically motivated by the conceptual metaphor LIFE IS A CONTAINER and BELIEFS ARE PHYSICAL POSSESSIONS. In interpreting the proverb, the language user maps his or her knowledge of containers and possessions onto their knowledge of life and beliefs. The mapping gives rise to the inference that, similarly to there being only one basket and one opportunity to gather eggs, there is only one chance in life to accomplish a specific goal. Likewise, the action of putting all the eggs onto one basket yields the interpretation of people placing all their hopes in one place and thus confirming the conceptual mapping whereby beliefs are represented by eggs in this proverb.

In order to investigate whether figurative meanings of proverbs are indeed motivated by metaphorical mappings from generic- to specific-level schemas, Gibbs et al. (1997) designed a series of experiments that explicitly looked for the possible influence of conceptual metaphors in proverb processing. Insofar as the design, materials, and results of the study will be of relevance to my own experiment, I shall describe them in more detail in the ensuing section of my paper.

5. Gibbs et al.'s (1997) experiment on people's mental imagery for proverbs

Gibbs et al. (1997) employed a mental imagery task with the aim of uncovering their participants' tacit knowledge of the metaphorical basis for proverbs. The mental imagery technique was earlier successfully used by Gibbs and O'Brien (1990) to investigate the metaphorical basis for idiomatic expressions. Gibbs et al. (1997) turned to the same technique in order to investigate the contents of speakers' mental images for proverbs and thus discover the knowledge and information that potentially motivate figurative meanings of proverbs in English.

Participants in Gibbs et al.'s study were 24 undergraduates from the University of California, Santa Cruz, all of them native speakers of English. They were

presented with a questionnaire asking them to write down their mental images for 16 different proverbs. A list of the 16 proverbs used as stimuli in Gibbs et al.'s experiment is provided in Table 1 in the Appendix. The proverbs themselves were selected from a list of 50 proverbs compiled from the *Penguin Dictionary of Proverbs*. These 50 proverbs were then rated by three judges for their degree of familiarity and imageability. The ratings yielded a final list of 16 proverbs with the highest familiarity and imageability.

After completing their description of each mental image, the subjects responded to a series of specific questions regarding their mental images. There were two yes-no questions and two open-ended questions. The first yes-no question assessed subjects' intuitions about the *intentionality* of the event within their mental image, while the other required them to determine the *stopability* of the action depicted by the proverb. For example, for the proverb *A rolling stone gathers no moss*, the *intentionality* question was *Does the stone roll out of its own will or because somebody else made it do so?* while the *stopability* question was: *Once the stone starts rolling, is it easy to stop it?*

The two open-ended questions probed subjects' intuitions about the *causation* of the action depicted in the proverb and the *manner* in which the action is performed. For example, the causation question was: *What caused the stone to start rolling?*, while the manner question: *How does the stone roll? Quickly or slowly? Does it roll in a straight line or bouncing around?* Each of the four probe questions was tailored to the specific proverb. Gibbs' rationale for including those specific probe questions in the mental imagery task springs from his contention that "causation, intentionality, manner and stopability are central characteristics of one's knowledge of objects and events in the real world". (Gibbs et al. 1997: 90).

Analysis of the subjects' descriptions revealed that their mental images were very consistent and detailed. For example, the general mental image prevailing in the participants' description for *A rolling stone gathers no moss* was one of the round and smooth stone, rolling down a grassy hillside and bouncing around on a bumpy road down the slope. In turn, the mental image provided for the proverb *One rotten apple spoils the whole barrel* consistently included a decaying apple, usually described as smelling bad and filled with worms, and a barrel, most often depicted as a large cylindrical container made of wood or rusty metal, full of many healthy, bright, shiny, and unbruised apples (Gibbs et al. 1997). Two independent judges assessed the degree to which the participants' reported mental images matched a particular general schema. Overall, participants in Gibbs et al.'s study had similar general image schemas 89% of the time.

Likewise, the participants' responses to the four probe questions for each proverb turned out to be highly consistent. Gibbs et al. conducted separate analyses for the four question types, calculating the percentage of consistent re-

sponses. For the stopability question, which required only a yes-no answer, participants gave consistent responses 68% of the time, while for the second yes-no question – the intentionality one, consistent responses constituted 87% of all the answers.

The causation and manner probe questions required open-ended responses and were scored in the same manner as were the general images provided by the participants for each expression, that is, matched against the general image schema and assessed for their consistency with that schema. For example, the causation responses for the proverb *One rotten apple spoils the whole barrel* typically included apples being eaten by worms, or exposed to the elements and thus getting spoiled. The decay was consistently viewed as caused by some outside force. The causation proverb questions turned out to yield consistent responses in 83% of the overall responses.

Finally, answers to the manner probe questions were consistent 86% of the time. To provide an example, when asked about how one rotten apple spoiled the remaining ones in the barrel, most participants mentioned worms, flies or bacteria as responsible for transferring physical decay from one apple to another.

Gibbs et al. (1997) claimed that the uniformity of participants' mental images for proverbs as well as consistency in their responses to the probe questions can best be explained by the constraining influence of conceptual metaphors that partly motivate figurative meanings of proverbs. According to Gibbs et al., these conceptual mappings from source onto target domains limit people's conceptualization of different human activities. For example, when interpreting the proverb *The early bird catches the worm*, people use their understanding about nature and animal interactions as a source domain (there being too few worms and too many birds) and map this information onto the target domain of human competition, the mapping itself taking place via the common metaphorical concepts of LIFE IS A STRUGGLE AGAINST AN OPPONENT and ACHIEVED PURPOSES ARE ATTAINED POSSESSIONS. Since, according to Gibbs, people are "generally unaware of the metaphorical links between the words in proverbs and the respective figurative meanings of these sayings, the results of the mental imagery experiment have been taken as support for the view that people tacitly use pervasive conceptual metaphors in order to understand figurative meanings of proverbs. Table 2 in the Appendix provides a list of conceptual metaphors, which, according to Gibbs et al. (1997) motivate the figurative meanings of the 16 proverbs used in their mental imagery experiment. Gibbs et al. further claim that traditional theories of proverb comprehension cannot explain this regularity in people's mental images for proverbs and that the only plausible explanation for the consistency in people's mental images is the constraining influence of conceptual metaphors which provide part of the link between the proverb and its figurative meaning (Gibbs and Beitel: 1995).

6. Extended Conceptual Base Theory versus Conceptual Metaphor Hypothesis

The ECBT and the CMH represent two widely differing accounts of proverb comprehension. While proponents of the Conceptual Metaphor view argue that proverb processing is motivated by conceptual metaphors and that understanding what proverbs mean depends on the ability to draw detailed metaphorical mappings between dissimilar domains of knowledge, the ECBT generally assumes that understanding proverbs requires general problem-solving abilities which constitute an important part of abstract thought. Thus, proverb understanding is simply viewed as a problem-solving task that does not require access to preexisting conceptual metaphors or other specialized mechanisms. Rather than depending on automatic processes that tap into prestored metaphorical mappings, as the CMH would have it, the ECBT hypothesizes that proverbs are processed in a series of stages starting with a literal analysis of the proverb and ending with recognition of their figurative meaning.

It seems that much further work is needed in order to conclusively decide which of the two opposing theories provides a more accurate account of the processes underlying proverb understanding. While each of them offers an interesting perspective on the issue of figurative language comprehension, they both need to provide answers to some questions that have so far remained unaddressed by proponents of either theory.

Thus, as far as the Conceptual Metaphor View is concerned, Gibbs et al. (1997) fail to specify the exact nature of conceptual metaphors presumed to motivate the meaning of proverbs. Likewise, as Honeck and Temple (1996) point out, Gibbs et al. (1997) do not explain the nature of relations obtaining between conceptual metaphors, entailments of these metaphors and the specifications of proverb specific-level schemas, generic-level schemas, or mappings holding between them. Results of the mental imagery task conducted by Gibbs et al. (1997) and quoted in support for the CMH do not necessarily indicate that people obligatorily draw metaphorical mappings between source and target domains when processing proverbs. The task itself taps into post-access conscious analytic processes, rather than revealing on-line unconscious mechanisms, which means that the idea that language users automatically access prestored metaphorical mappings while comprehending proverbs is definitely premature and unsubstantiated.

Turning now to the ECBT, its major weakness seems to be the vagueness of the postulated conceptual base, which participates in the creation of analogical relationship between the proverbial statement and its context in the course of proverb comprehension. Honeck et al. do not specify the exact nature of the conceptual base other than to describe it as abstract, nonverbal and nonimagistic. Likewise, the postulated four phases of proverb processing need to be somehow reconciled with the vast psycholinguistic literature that has demon-

strated no difference in processing times between literal and figurative language, thus pointing to the possibility that processing stages for both literal and non-literal language might be identical.

7. Proverbs and the Bilingual Metaphorical Competence

The issue of the mechanisms underlying figurative language processing becomes even further complicated when we wish to account for how second/foreign language learners acquire and process figurative expressions in their L2. With respect to what we might conveniently label Bilingual Metaphorical Competence (BMC), the term indicating a bilingual person's ability to comprehend and produce various kinds of figurative expressions in L2, many issues still remain unexplored. To my best knowledge, no attempt has been undertaken as yet by scholars of figurative language processing to systematically account for the representation and processing of figurative language in the bilingual mode.

With reference to the processing of L2 proverbs, a comprehensive psycholinguistic theory of L2 proverb understanding and interpretation would have to satisfactorily account for such issues as:

- 1) How do second language users acquire and make sense of figurative meanings of proverbial expressions in their L2?
- 2) How do they immediately process proverbs in everyday L2 discourse?
- 3) How are L2 proverbs represented in the bilingual memory?
- 4) Are they understood in phases, and, if so, what phases can be identified for comprehending proverbs in the bilingual mode? Are they similar to, or different from, the processing steps postulated to underlie the comprehension of L1 figurative expressions?
- 5) What role does imagery play in proverb processing?
- 6) Are proverb meanings prestored in the bilingual's long-term memory or rather computed on-line?
- 7) To what extent does L2 proverb comprehension rely on automatic processes that utilize preexisting conceptual metaphors stored in long-term memory?
- 8) Is it better to account for L2 proverb comprehension within the problem-solving framework, like the one suggested in the ECBT?
- 9) Does metaphorical thought motivate the figurative meanings for proverbs in both L1 and L2? If so, then does it play any role in second language users' ordinary on-line production or comprehension of proverbs?
- 10) Do preexisting conceptual metaphors function automatically in second language users' immediate, on-line use and understanding of proverbial expressions?

It seems that, in order to resolve the issue whether metaphorical mappings are automatically employed during proverb comprehension, one would have to conduct specifically designed, sensitive online methods, such as priming studies, seeking to reveal underlying processes that operate automatically in the course of proverb understanding. There seems to be a need for much further theoretical and empirical work to be carried out on proverbial expressions in future research.

8. The study

8.1. Aims

In order to throw light on one narrow aspect of the vast unexplored area of BMC, I conducted a small-scale study into the interpretation of proverbs by L2 learners, with a view to evaluating its results against Gibbs et al.'s (1997) original mental imagery task. My goal in conducting the replication of Gibbs' proverb interpretation experiment was to examine how bilingual subjects would perform on a mental imagery task and what implications the results of the study might have for the model of bilingual metaphorical competence. My research questions might thus be formulated as follows:

- 1) Do L2 learners have consistently uniform mental images for L2 proverbs?
- 2) How does the performance of L2 learners on the mental imagery task compare to that of native English speakers described by Gibbs et al. (1997)?
- 3) Can we infer, as Gibbs did, that consistent mental images for proverbs reflect the existence of conceptual metaphors motivating L2 learners' understanding of proverbs' figurative meanings?
- 4) Is it possible to account for bilingual subjects' performance within the framework of the ECBT?

8.2. Subjects

The subjects of the study were 30 Polish students of English, all of them third year students at the School of English, Adam Mickiewicz University. Participation in the experiment was voluntary and the volunteers were rewarded with the exemption from a mid-semester test planned for the course where they were enrolled.

8.3. Materials and procedure

A list of 10 proverbs, taken from Gibbs et al.'s (1997) original mental imagery task was used in the experiment. This list is presented in Table 3 in the Appendix. The procedure employed in the experiment closely followed that of Gibbs et al.'s study. The participants in the study were presented with a questionnaire

starting with a proverb-definition-matching task, whose objective was to ascertain subjects' familiarity with the proverbs that subsequently served as stimuli in the mental imagery task.

On completing the matching exercise, the subjects proceeded to the mental imagery task, which instructed them to write down in detail their mental image for each proverb. Exact instructions that subjects received before the task are presented in Table 4 in the Appendix. As was the case in Gibbs' experiment, in addition to describing their mental image for each proverb, the participants had to answer four probe questions about causation, intentionality, manner, and stopability of the actions depicted in each of the stimulus proverbs. Two of those questions were of the yes-no format, while two of them were open-ended; the questions themselves having been tailored to the specific proverb and replicated from Gibbs et al.'s (1997) original study.

The participants were encouraged by the experimenter, as well as by the written instructions, to be as detailed as possible in describing their mental images and in responding to the open-ended probe questions. Once they read the directions, the participants asked any further questions concerning the task, so that the experiment started only after all of the doubts had been clarified. The participants took approximately one hour to complete the questionnaire.

8.4. Results

First of all, I set out to examine the degree of consistency in the respondents' mental images for the stimulus proverbs. Each subject's description of his or her mental image was analyzed and its general characteristics identified. The analysis yielded a general schema, which was assigned for each expression. General schemas for each proverb are provided in Table 4, which summarizes the overall results obtained from the analysis of subjects' responses to the questionnaire. The general schema identified for each expression was subsequently discussed by two independent judges, who unanimously agreed as to whether the subjects' mental images matched a particular general schema.

On the whole, the bilingual subjects participating in the study had similar image schemas only 56% of the time, which, compared to Gibbs' 89% of consistency points to a considerably lesser degree of uniformity in the bilingual subjects' imagery underlying their L2 proverb processing. Particularly striking are figures obtained for the proverb *One rotten apple spoils the whole barrel*, where the proportion of consistent responses (48%) is twice as small as that obtained by Gibbs (96%). Likewise, the proverb *Those who live in glass houses shouldn't throw stones* yielded only 58% of consistent images, while the corresponding figure in Gibbs' monolingual study is as high as 92%.

Another huge contrast is that obtained for the proverb *Let the sleeping dogs lie*, where the bilinguals were consistent in their imagery only 54% of the time,

while Gibbs' subjects exhibited 100% uniformity in their responses. Likewise, there is a huge discrepancy between the results obtained in the two studies for the proverbs *A rolling stone gathers no moss* and *Too many cooks spoil the broth*. The former yielded only 43% of similar responses in the bilingual condition, while as many as 79% in Gibbs' original monolingual study. The latter manifested consistency in 57% of bilingual subjects' responses compared to as much as 96% of consistency demonstrated for Gibbs et al.'s subjects.

The remaining proverbs yielded less striking differences, even though the percentages of consistent responses obtained for the bilingual subjects were visibly smaller than those reported in Gibbs et al.'s experiment. Among the responses inconsistent with the general image schema, a substantial number of them were widely differing, idiosyncratic, or based on the participants' autobiographical memories or personal experiences. Examples of randomly chosen inconsistent images for a few proverbs are quoted in Table 5 in the Appendix.

Having examined the degree of consistency in subjects' mental imagery for the stimulus proverbs, I next looked into the answers to the four probe questions for each type of expressions. The probe questions elicited more detailed information about the participants' mental images for the stimulus proverbs. The data obtained for each proverb are summarized in Table 4, which provides the number of subjects who responded in a specific way to each question and then the percentage of dominant, consistent responses. Dominant and consistent responses are printed in bold, and these figures are expressed as percentages and compared to the corresponding percentages reported in Gibbs et al.'s experiment.

Interestingly, the comparison of the figures obtained in both conditions to the four probe questions reveals much less disparity than the comparison of the consistency of mental images provided by subjects in both conditions. On the whole, for the stopability question, which required only a yes-no answer, the bilingual subjects gave consistent responses 53% of the time, while Gibbs et al.'s participants were consistent 68% of the time. The responses to the intentionality probe question, which also required only a yes-no answer, were consistent 68% of the time, while those in Gibbs et al.'s study and 87% of the time.

The causation and manner questions, which required open-ended responses, were scored in the same way as the general images provided by the participants for each expression. For example, the causation responses for the proverb *Don't throw the baby out with the bathwater* mostly focused on the childminder's impatience, absentmindedness, negligence and carelessness, which, when tallied across all the participants, accounted for 79% of the responses. Answers to the manner probes as to how the baby is thrown out indicated an accidental action, with the baby being mistakenly thrown out along with the dirty water from the bathtub. Such responses accounted for 65% of all the subjects' responses. Similar kinds of analyses were carried out for the remaining proverbs.

On the whole, for the causation probe questions, bilingual subjects responded consistently 70% of the time, while Gibbs et al.'s subjects – 83% of the time. In turn, the manner probe questions yielded consistent responses 63% of the time in my study, while 86% of the time in Gibbs et al.'s study. The overall percentages obtained for the four probe questions in both conditions are conveniently summarized in Table 6 in the Appendix.

9. Discussion and conclusions

Most generally, the results of this study demonstrate that bilingual language users have definitely less consistent images for L2 proverbs than native speakers of English do. Bilingual subjects' knowledge about the stopability, intentionality, causation and manner of the actions depicted in each proverbial expression likewise seems to be less uniform than that manifested in Gibbs et al.'s study. Thus, research questions 1 and 2 formulated earlier, whether L2 learners have consistently uniform mental images for L2 proverbs and whether their performance on the mental imagery task is similar to that of native speakers of English would have to be answered negatively.

These results do not seem surprising; given the fact that figurative language poses particular problems to even advanced bilingual language users. They may point to the essentially differing mechanisms underlying the processing of figurative expressions in L1 and L2. Alternatively, we might interpret these data as indicative of the fact that bilingual language users have not yet fully developed the essential links between conceptual metaphors and figurative meanings of the proverbs. Hence, the resulting variety and unconstrained character of the images obtained in the bilingual condition. This brings us to the third research question, which asked if one can infer that consistency of mental images for proverbs reflects the existence of conceptual metaphors motivating L2 learners' understanding of proverbs' figurative meanings. This question springs from Gibbs' major assumption that the high degree of consistency in his subjects' imagery and responses to the probe questions should be attributed to the conceptual metaphors motivating figurative meanings of proverbs.

It seems that considerably more research is needed in order to conclusively decide whether conceptual metaphors motivate L1 and L2 users' comprehension and interpretation of proverbial expressions. I would postulate more caution in drawing direct conclusions about the presence of conceptual metaphors from the degree of consistency of language users' mental imagery for proverbs. Lack of a high degree of consistency in the mental images provided by the bilingual subjects in the mental imagery task does not necessarily mean that those bilingual language users do not have access to conceptual metaphors structuring their comprehension of language. Neither would a high consistency of mental images unambiguously prove the presence of conceptual metaphors motivating the

meaning of figurative expressions. The mental imagery task itself seems to rely more on post-access analytical mechanisms than on immediate on-line processes occurring in the course of figurative language understanding. A wide variety of images provided by the bilingual subjects might thus be not necessarily caused by the lack of the constraining influence of conceptual metaphors, but rather result from unlimited time the subjects were given to complete the task, which might have encouraged personal memories and free associations.

Finally, the fourth research question asked if it would be possible to account for bilingual subjects' performance within the framework of the ECBT. Many of the responses provided by the bilingual participants do indeed point to the possibility that comprehending a proverb might be an essentially problem-solving task, in which a language user creates an analogy between a situation depicted in the proverb and the more general context in the outside world. To provide an example, (cf. Table 7 in the Appendix) the mental image provided for the proverb *Those who live in glass houses shouldn't throw stones*:

“One who throws a stone in his own glass house deprives himself of his home. Only then does he realize what a mistake he has made”

is a clear case of analogical reasoning, where the language user tries to give a proverb a wider meaning. Likewise, the words

“You have to be conscious what you are doing because you can be in trouble. There are many traps that you may not notice. You should have your eyes around your head when you are going somewhere”

given as a response to the proverb *Look before you leap* evidence the essentially problem-solving mechanism underlying comprehension of this proverb. Further examples include:

“A person who is a very successful performer, a leader of a rock band, for example; It would probably be a man. His career overwhelmed him so much that he actually forgot about the most important things in one's life- he has no more friends, couple of lovers, but no real relationships, no prospects of a family. When his career ends he finally dies as a drug addict”

and

“A person is so preoccupied with details that they don't notice how their life is passing by”

provided for the proverb *A rolling stone gathers no moss*; and the following words given by one participant as his mental image for the proverb *The early bird catches the worm*:

"A person who wants to be successful, somebody who would sacrifice their private time in order to achieve something".

Concluding, it seems difficult to unambiguously decide, given the results of the present study, whether bilingual subjects' understanding of proverbs is better accounted for within the framework of the Extended Conceptual Base Theory or the Conceptual Metaphor Hypothesis. Both theories capture important aspects of the mechanisms that might underlie the processing of figurative expressions. The mental imagery task described in this paper speaks only to the way bilingual language users visualize images depicted in the proverbs. Even though the data obtained in the study reveal differences between the performance of bilingual language users and native speakers of English, these data should be interpreted very cautiously. The role of conceptual metaphors in motivating what L2 proverbs mean to bilingual language users is a controversial issue that needs to be researched in more depth, with the use of more sophisticated research techniques. The question of how second language learners acquire and process figurative language awaits further investigation and holds intriguing promises to future researchers in this fascinating area.

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APPENDIX

Table 1 List of proverbs used by Gibbs et al. (1997) in their mental imagery experiment

| | |
|--|--|
| A rolling stone gathers no moss. | Let sleeping dogs lie. |
| Too many cooks spoil the broth. | You can lead a horse to water, but you can't make him drink. |
| Don't throw the baby out with the bathwater. | Don't count your chickens before they're hatched. |
| The early bird catches the worm. | Look before you leap. |
| One rotten apple spoils the whole barrel. | The bigger they come, the harder they fall. |
| We'll cross that bridge when we come to it. | Scratch my back and I'll scratch yours. |
| Those who live in glass houses shouldn't throw stones. | He would give you the shirt off his back. |
| Don't put all your eggs in one basket. | Lightning never strikes twice in the same place. |

Table 2 Conceptual metaphors identified by Gibbs et al. (1997) for proverbs

| | |
|--|--|
| A rolling stone gathers no moss. | Let sleeping dogs lie. |
| • LIFE IS A JOURNEY | • CAUSING TROUBLE IS MAKING SOMETHING ACTIVE |
| • EXPERIENCING SOMETHING IS POSSESSING IT | • TO BE ALIVE AND SANE IS TO BE PHYSICALLY PRESENT |
| Too many cooks spoil the broth. | You can lead a horse to water, but you can't make him drink. |
| • TOO MUCH OF SOMETHING IS DISORDER | • DRINKING WATER IS MAKING PROGRESS |
| • IDEAS ARE FOOD | • KNOWLEDGE IS WATER |
| Don't throw the baby out with the bathwater. | Don't count your chickens before they're hatched. |
| • BELIEFS ARE CHILDREN | • BELIEFS ARE POSSESSIONS |
| • IDEAS ARE OBJECTS | • CONTROL IS VISUAL MONITORING |
| The early bird catches the worm. | Look before you leap. |
| • LIFE IS A STRUGGLE AGAINST AN OPPONENT | • KNOWING IS SEEING |
| • ACHIEVED PURPOSES ARE ATTAINED POSSESSIONS | • LIFE IS A JOURNEY |
| One rotten apple spoils the whole barrel. | The bigger they come, the harder they fall. |
| • DISEASE IS AN ENEMY | • SIGNIFICANT IS BIG |
| • MENTAL HARM IS PHYSICAL HARM | • LIFE IS A STRUGGLE AGAINST AN OPPONENT |
| We'll cross that bridge when we come to it. | Scratch my back and I'll scratch yours. |
| • PURPOSES ARE DESTINATIONS | • EVENNESS IS FAIRNESS |
| • LIFE IS A JOURNEY | • TASKS ARE BURDENS |
| Those who live in glass houses shouldn't throw stones. | He would give you the shirt off his back. |
| • MENTAL HARM IS PHYSICAL HARM | • HELPING SOMEONE IS GIVING HIM OR HER SOME OBJECT |
| • MIND IS A BRITTLE OBJECT | |
| Don't put all your eggs in one basket. | Lightning never strikes twice in the same place. |
| • LIFE IS A CONTAINER | • LIFE IS A METEOROLOGICAL FORCE |
| • BELIEFS ARE POSSESSIONS | • ATTACK IS CONTACT |

Table 3 List of stimulus proverbs used in the study

| | |
|--|--|
| A rolling stone gathers no moss. | Don't put all your eggs in one basket. |
| Too many cooks spoil the broth. | Let sleeping dogs lie. |
| Don't throw the baby out with the bathwater. | You can lead a horse to water, but you can't make him drink. |
| The early bird catches the worm. | Look before you leap. |
| One rotten apple spoils the whole barrel. | |
| Those who live in glass houses shouldn't throw stones. | |

Table 4 Summary of the results obtained in the L2 mental imagery task

| Proverb | | Proportion of consistent responses | Results obtained by Gibbs et al |
|--|---|------------------------------------|---------------------------------|
| A ROLLING STONE GATHERS NO MOSS | | | |
| General image: | A big stone rolling down a slope; the stone is usually described as gray and covered with no moss; it picks up speed on the way down the slope, bouncing on the obstacles and destroying the grass/moss on its way; | 43% | 79% |
| Stopability | stoppable: 7 | 75% | 75% |
| | unstoppable: 21 | | |
| Intentionality | intentional: 11 | 46% | 71% |
| | unintentional: 13 | | |
| | other: 4 | | |
| Causation | external: 17 | 65% | 67% |
| | internal: 5 | | |
| | other: 4 | | |
| Manner | slowly and in a straight line: 5 | 50% | 75% |
| | quickly and in a straight line: 11 | | |
| | quickly and bouncing around: 11 | | |
| TOO MANY COOKS SPOIL THE BROTH | | | |
| General image: | A group of cooks (usually women) cooking the broth and spoiling it by adding too many spices. The cooks fail to cooperate and want to impose their own point of view on others, thinking that their own recipe is superior. The image emphasizes chaos in the kitchen, the atmosphere of excitement, haste and noise. | 57% | 96% |
| Stopability | stoppable: 9 | 68% | 62% |
| | unstoppable: 19 | | |
| Intentionality | intentional: 1 | 96% | 100% |
| | unintentional: 27 | | |
| Causation | too many ingredients added as a result of cooks' failure to cooperate: 28 | 100% | 92% |
| Manner | too many spices (esp. salt being added to it): 17 | 63% | 81% |
| | failure of cooks to cooperate: 4 | | |
| | other: 6 | | |

Table 4 Continued

| DON'T THROW THE BABY OUT WITH THE BATHWATER | | | |
|--|--|-----|------|
| General image: | A person (usually a parent or a child minder) being absentminded (distracted by a conversation, engrossed in one's own thoughts, etc) and accidentally throwing the baby along with the dirty bathwater out of the bathtub; The image often focuses on the bathtub itself- its color, shape, and size. | 57% | 85% |
| Stopability | stoppable: 10 | 58% | 58% |
| | unstoppable: 14 | | |
| Intentionality | intentional: 1 | 96% | 88% |
| | unintentional: 27 | | |
| Causation | impatience, absentmindedness, negligence, carelessness: 22 | 79% | 88% |
| | deliberate action: 2 | | |
| | other: 4 | | |
| Manner | accidentally, along with the dirty bathwater: 15 | 65% | 85% |
| | violently, forcefully, brutally: 8 | | |
| THE EARLY BIRD CATCHES THE WORM | | | |
| General image: | The image of a bird quickly leaving its nest with the intention of catching the best worm before other birds wake up and start looking for their food. The bird wants to be faster than others in its flock. (Alternatively, the image focuses on the bird only, who is looking for food upon waking up, with no element of competition involved.) | 50% | 96% |
| Stopability | stoppable: 10 | 62% | 69% |
| | unstoppable: 16 | | |
| Intentionality | intentional: 27 | 96% | 96% |
| | other: 1 | | |
| Causation | hunger, survival instinct: 25 | 93% | 100% |
| | other: 2 | | |
| Manner | passionately, eagerly, quickly (the idea of rapidness of the action): 9 | 50% | 85% |
| | focus on technical details (with its beak, claws, etc.) 13 | | |
| | other: 4 | | |

Table 4 Continued

| ONE ROTTEN APPLE SPOILS THE WHOLE BARREL | | | |
|---|---|-----|-----|
| General image: | The image of a decaying apple (smelling bad, having a brown color or spots, filled with worms) sitting in a barrel (usually big and wooden) and many healthy apples (bright red and shiny) slowly rotting because of the decay spreading from the rotten apple. | 48% | 96% |
| Stopability | stoppable: 19 | 70% | 50% |
| | unstoppable: 8 | | |
| Intentionality | intentional: 1 | 96% | 85% |
| | unintentional: 27 | | |
| Causation | one apple from which decay spreads onto other ones: 17 | 61% | 77% |
| | sb's negligence to remove the rotten apple and prevent decay from spreading: 6 | | |
| | other: 5 | | |
| Manner | slowly, gradually (the idea of decay spreading from one apple to another): 16 | 64% | 77% |
| | emphasis on the worm or one rotten apple: 2 | | |
| | quickly: 3 | | |
| | other: 4 | | |
| THOSE WHO LIVE IN GLASS HOUSES SHOULDN'T THROW STONES | | | |
| General image: | A group of people/children (inhabitants of the glass house) accidentally breaking the glass wall/window/roof of their house, as they throw stones at somebody/something and they miss. [Alternatively, the people are outside of the house and they intend to destroy it for various reasons (demonstrating against sth, disapproving of the people living in the house, etc)] | 58% | 92% |
| Stopability | stoppable: 11 | 44% | 50% |
| | unstoppable: 10 | | |
| | other: 4 | | |
| Intentionality | intentional: 19 | 73% | 60% |
| | unintentional: 4 | | |
| | other: 3 | | |
| Causation | to achieve sth (get revenge, relieve anger, frustration, fear, etc): 18 | 72% | 77% |
| | other: 7 | | |
| Manner | forcefully, violently, with anger: 17 | 68% | 85% |
| | focus on technical details (direction, position, etc.) 7 | | |
| | other: 1 | | |

Table 4 Continued

| DON'T PUT ALL YOUR EGGS IN ONE BASKET | | | |
|---------------------------------------|--|-----|------|
| General image: | The idea of eggs having to be transferred somewhere (from the shop back home or to the market to be sold, etc) by a human agent (usually a woman, or girl) and the eggs (on the verge of) breaking because of being packed into too small a container. | 60% | 85% |
| Stopability | stoppable: 16 | 64% | 69% |
| | unstoppable: 9 | | |
| Intentionality | intentional: 25 | 96% | 62% |
| | unintentional: 1 | | |
| Causation | eggs having to be carried somewhere and the convenience of having them in one place for this purpose: 12 | 48% | 88% |
| | human negligence, lack of imagination: 9 | | |
| | lack of alternative containers for eggs: 3 | | |
| | other: 1 | | |
| Manner | carefully, slowly, one by one, gently: 24 | 89% | 88% |
| | other: 3 | | |
| LET SLEEPING DOGS LIE | | | |
| General image: | A pack of dogs lying somewhere (in front of the house, on the floor, in the yard, etc), and sleeping; the dogs being very dangerous, and a person/group of people trying to pass unnoticed so as not to wake them up. | 54% | 100% |
| Stopability | stoppable: 21 | 81% | 54% |
| | unstoppable: 5 | | |
| Intentionality | intentional: 23 | 88% | 88% |
| | unintentional: 3 | | |
| Causation | to avoid trouble (being bitten by the dogs): 14 | 58% | 92% |
| | there is no need to wake them up (the dogs themselves not being pictured as potentially dangerous): 3 | | |
| | other reasons: 7 | | |
| Manner | peacefully, not disturbing them, quietly: 17 | 74% | 100% |
| | other: 6 | | |

Table 4 Continued

| YOU CAN LEAD A HORSE TO WATER BUT YOU CAN'T MAKE HIM DRINK | | | |
|--|--|------|------|
| General image: | A person (usually a man) bringing his horse to the water (river, stream), with the intention of quenching its thirst (often after some tiring action performed by the horse). Contrary to the owner's expectations, the horse does not feel thirsty and stubbornly refuses to drink, despite the owner's forceful attempts to make it do so. | 79% | 100% |
| Stopability | stoppable: 15 | 58% | 92% |
| | unstoppable: 8 | | |
| | no definite answer: 3 | | |
| Intentionality | intentional: 25 | 100% | 92% |
| | unintentional: 0 | | |
| Causation | thirst (real or falsely presupposed by the owner): 21 | 88% | 100% |
| | other: 3 | | |
| Manner | forcefully, not cooperating with its owner: 12 | 48% | 85% |
| | gently, yielding to its owner's leadership: 6 | | |
| | other (focus on technical details: by reins, on a leash, etc.): 7 | | |
| LOOK BEFORE YOU LEAP | | | |
| General image: | A person coming up against some obstacle on his/her way (a log, a cliff, a puddle, a hole in the ground, a brook, etc.) and (a) failing to look before they leap and hence falling down/hurting themselves; (b) looking before they leap and thus avoiding getting hurt; (c) looking before they leap and not being able to decide whether or not to perform the leap; | 54% | 77% |
| Stopability | stoppable: 15 | 65% | 81% |
| | unstoppable: 8 | | |
| Intentionality | intentional: 17 | 74% | 65% |
| | unintentional: 6 | | |
| Causation | wish to avoid sth unpleasant (danger, problem, etc.): 8 | 40% | 85% |
| | other reasons (curiosity, assessing the risk of the leap, trying to figure out the distance, etc.): 12 | | |
| Manner | carefully, cautiously, critically (a well-planned action): 11 | 58% | 85% |
| | quickly, casually, without much interest (an unpremeditated action): 4 | | |
| | other (description of the body posture, technical details of the leap): 4 | | |

Table 5 Examples of randomly chosen mental imagery responses inconsistent with the general image schema

| | |
|---|--|
| THE EARLY BIRD CATCHES THE WORM | <i>I associate this proverb with the Polish TV series "Przygody wrobelka Elemelka" which I used to watch with passion when I was a small child. I imagine a small, sweet crow, after he has got up from bed; his feathers still in mess. He takes a comb and starts to arrange his feathers in front of a mirror. Then he looks with love at his sleeping wife and children and flies away in search of sth for breakfast for his family. He will certainly find a worm because it is very early.</i> |
| DON'T THROW THE BABY OUT WITH THE BATHWATER | <i>My little sister in a bathtub. She splashes the water around her, making the bathroom look as if it was a swimming pool;</i> |
| TOO MANY COOKS SPOIL THE BROTH | <i>It's a picture that I saw a few years ago which was showing a situation from this proverb- five or six mice wearing aprons, standing around a big pot and tasting the broth;</i> |
| A ROLLING STONE GATHERS NO MOSS | <i>The band "The Rolling Stones" is my first association, another is that of a person who is not concerned with the material aspects of life; We are spirits in the material world.... Only then do I see a stone that's rolling and moss falling off it; My visit to some mountains when I was a little boy. I noticed a heap of rocks that were under the mountain side. The stones were shiny and of irregular shapes</i> |
| THOSE WHO LIVE IN GLASS HOUSES SHOULDN'T THROW STONES | <i>A laboratory. A kind of a box made of glass. There are people inside, there are objects like chairs, tables, beds, etc. No stones. Everyone can see what's going on inside. It's frustrating; A glass kind of house through which walls people living inside are visible. They are sort of like in a Big Brother show- they cannot hide anything. But they feel safe and secure. Suddenly a person comes and throws a stone at the house. The house breaks (as it's made of glass) and collapses with an awful noise;</i> |
| LOOK BEFORE YOU LEAP | <i>A person- Kasia- a colleague from group 4- is standing on a cliff. She is about to leap and then prof. Jacek Witkos says the proverb to her. She is standing on her toes, looking down the cliff. (This is the proverb Prof. Witkos said to Kasia when she explained to him that she can't cope with all the work in the third year. She took part in MA seminar along with 4th year students.)</i> |
| ONE ROTTEN APPLE SPOILS THE WHOLE BARREL | <i>I see the barrel, but it's full of cider, not apples. I can smell cider and feel the taste of it. Then I see apples on a plate and one of them is rotten. It's completely rotten, almost black;</i> |
| YOU CAN LEAD A HORSE TO WATER BUT YOU CAN'T MAKE HIM DRINK | <i>I don't imagine a horse, but a donkey, probably because in our culture this animal is associated with stubbornness. It is led by a man to the river, but it doesn't want to drink; We are in a desert. It's very hot. Suddenly I notice a horse running towards us. We take the horse and lead him, When we approach a village I lead the horse to water but he wouldn't drink;</i> |
| LET SLEEPING DOGS LIE | <i>My dog is sleeping on the carpet next to my armchair. There's darkness in the room except for some light from the burning fireplace;</i> |

Table 6 Comparison of the percentages of consistent responses obtained to the four probe questions in the L2 mental imagery study and in Gibbs et al.'s (1997) study

| Type of question | L2 mental Imagery study | Gibbs et al.'s study |
|------------------|-------------------------|----------------------|
| Stopability | 53% | 68% |
| Intentionality | 68% | 87% |
| Causation | 70% | 83% |
| Manner | 63% | 86% |

Table 7 Examples of mental images consistent with the problem-solving approach to proverb comprehension postulated by the ECBT

| | |
|--|--|
| THOSE WHO LIVE IN GLASS HOUSES SHOULDN'T THROW STONES | <i>One who throws a stone in his own glass house deprives himself of his home. Only then does he realize what a mistake he has made;</i> |
| LOOK BEFORE YOU LEAP | <i>You have to be conscious what you are doing because you can be in trouble. There are many traps that you may not notice. You should have your eyes around your head when you are going somewhere;</i> |
| A ROLLING STONE GATHERS NO MOSS | <i>A person who is a very successful performer, a leader of a rock band, for example; It would probably be a man. His career overwhelmed him so much that he actually forgot about the most important things in one's life- he has no more friends, couple of lovers, but no real relationships, no prospects of a family. When his career ends he finally dies as a drug addict;</i> <i>A person is so preoccupied with details that they don't notice how their life is passing by;</i> |
| THE EARLY BIRD CATCHES THE WORM | <i>A person who wants to be successful, somebody who would sacrifice their private time in order to achieve something;</i> |