Nominal Metaphor Aptness: Semantic Features and Degree of Matching between Topic and Vehicle

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Abstract

Degree of aptness of the nominal metaphor X is a Y or the extent to which the metaphorical statement expresses its specific non-literal meaning and the nature of relationship between aptness and semantic features of topic (X) and vehicle (Y) is the subject that is addressed in this study. Conducting an experiment in which 35 undergraduate students judged degree of relevancy of 10 semantic features of topic and vehicle of nominal metaphors, the researchers of this study sought to find how aptness of a metaphor is related to various meaning aspects of topic and vehicle. The instrument was a test including 20 nominal metaphors, each one followed by 10 semantic features of topic and vehicle. The participants were required to judge the degree of relevancy of each feature on the basis of a Likert scale ranging from 0 (irrelevant) to 3 (completely relevant). The obtained results suggested that several aspects of meaning might simultaneously be in operation throughout metaphor comprehension. However, these aspects are not at the same level; that is, one meaning aspect plays the dominant role, while others play a secondary role. Taking Glucksberg's class-inclusion view of metaphor comprehension and Gentner's structure-mapping view and based on the results obtained in the experiment, this article presents a model according to which degree of interpretability and aptness of a nominal metaphor is determined by degree of relevancy of a specific meaning aspect of vehicle.

Keywords: nominal metaphor; topic; vehicle; aptness; class-inclusion

1. Introduction

Metaphoric language is a type of language whose understanding involves going beyond the literal and surface meaning of the words and sentences. In order to understand a metaphoric statement, the comprehender should ignore the literal meanings for a moment and derive the meaning of the expression on the basis of metaphorical intentions. This has led some researchers such as Bowdle and Gentner (1999) to suggest that the processes involved in metaphor comprehension might be different from those involved in literal language comprehension. On the other hand, some researchers such as Keysar and Glucksberg (1992) have proposed that metaphoric and literal statements are understood in the same way and there is no need to posit any special mode for the understanding of metaphors.

Among the various forms of metaphors, nominal metaphors (*X is a Y*) have been the subject of many studies. Each nominal metaphor can be the origin of a large number of metaphoric expressions. For example, the metaphoric statements *Your claims are indefensible*, *He attacked every weak point of my argument*, and *I demolished his argument* are metaphoric expressions driven from the nominal metaphor *Argument is a war* (Lakoff and Johnson, 2003, p.5). They argue that metaphoric statements are understood by reference to their original conceptual metaphors. According to this view, every conceptual metaphor is the base on which a large number of verbal metaphors are built and interpreted.

Conducting an experiment among a group of Persian native speakers, the researchers of this study sought to investigate the role played by various semantic aspects of topic and vehicle. The aim was to explore the saliency of each semantic aspect. Based on the relative saliency of various semantic aspects, a model will be presented according to which each nominal metaphor is comprehended by focusing on only one aspect of topic and one aspect of vehicle, while other semantic aspects are either completely filtered out or take a secondary role in the process of metaphor comprehension.

2. Literature Review

2.1 Definition of Figurative Language

Figurative language is a language that is not to be taken literally. It means one thing literally but it is extended to mean something else. In fact, in some cases when taken literally, figurative statements would seem anomalous. Thus, figurative language is a special mode of language use whose interpretation involves going beyond the surface form of the sentence. Carroll (2008, p. 142) presents a categorization of different types of figurative language which includes: metaphor, idiom, metonymy, proverb, and indirect speech act.

2.2 Metaphor

According to Carroll (2008, p. 428), metaphor is a form of language in which a word or phrase that literally denotes one idea is interpreted to mean a different one and suggests a similarity between the two. He says that every metaphor such as *Billboards are warts on the landscape* consists of three main parts. The topic or tenor of the metaphor is *billboards*. The vehicle is what is predicted of the tenor which in this case is *warts*. Fromkin, Rodman, and Hyams (2003, p. 587) defines the metaphor as non-literal and suggestive meaning in which an expression that designates one thing is used implicitly to mean something else, e.g., *The night has a thousand eyes*, to mean "One may be unknowingly observed at night". According to Schmidt, Kranjec, Cardillo, and Chatterjee (2009), metaphors might be based on nouns (*That baby is an* angel), verbs (*She* ran *for president*), prepositions (*Chandelier earrings are* out), or adjectives (*He has a* warm *heart*). They state that most of the psycholinguistic accounts have tended to focus on noun-based (nominal) metaphors.

2.3 Idioms

Idiom is a fixed phrase consisting of more than one word whose meaning cannot be inferred from the meanings of the individual words (Fromkin et al., 2003, p. 205). Each idiom has a fixed meaning that is not dependent on its parts, that is, the principle of compositionality cannot be applied to interpret an idiomatic phrase. Crystal (2003, p. 225-226) defines idiom as a sequence of words which is semantically and often syntactically restricted, so that they function as a single unit. He further adds that from a semantic viewpoint, the meanings of individual words do not permit the usual variability they display in other contexts, e.g., *It's raining cats and dogs* does not permit **It's raining a cat and a dog*. Thus, idiomatic expressions are ready-made and no change can be imposed on them. We hold idioms in our mental lexicon as single units in the same way that we hold morphemes.

2.4 Metonymy

Metonymy is a word substituted for another word or expression with which it is closely associated (Fromkin, et al., 2003, p. 588). Crystal (2003, p. 291) defines metonymy as a figure of speech in which the name of an attribute of an entity is used in place of the entity itself. For example, *violins* in *The second violins are playing well*. According to Yule (2006, p. 108), this close connection can be based on a container-content relation (*bottle/water*), a whole-part relation (*car/wheels*), or a representative-symbol relationship (*president/the Whitehouse*). When we hear *The Whitehouse has announced*, we interpret it as an announcement from president of the United States as buildings cannot speak. Some examples of metonymy have been used so

extensively in our daily life that we do not have any difficulty in their interpretations. On the opposite side, some cases are not conventional and thus their interpretation involves using contextual clues, background knowledge, and some inference on the part of the listener.

2.5 Proverbs

A proverb (from the Latin word *proverbium*) is a simple saying which is handed down from generation to generation in a culture. Proverbs have their roots in the culture of the communities and they exist in all languages of the world. There are many cases of proverbs which are shared by different languages. Throughout history, these proverbs have been transferred from one language to another as a result of communication between communities and cultures. Like other types of figurative language, proverbs are not to be taken literally. In fact if taken literally, they can be a source of comedy and humor. *All roads lead to Rome* does not mean that you will end up in Rome even if you go to the opposite direction (!). Proverbs have a fixed and frozen structure and often no change can be brought to their components. The meaning of proverbs depends on the context and situation of their occurrence.

2.6 Indirect Speech Acts

Speech act is defined as action or intent that a speaker accomplishes when using language in context, the meaning of which is inferred by hearers (Fromkin, et al., 2003, p. 595). When we say *I warn you that there is a snake in the box*, we not only say something, but also we warn others. Verbs such as *pronounce*, *promise*, *resign*, etc. are called performative verbs. By using performative verbs, we do something beyond a mere statement. Using Austin's terminology, Carroll (2008, p. 142) defines the locutionary act as the act of saying something and illocutionary force of an utterance as the action that is performed by saying the sentence. Perlocutionary effect of the utterance is the effect of the utterance on a listener; for instance, I may try to scare someone, but s/he may be scared or not. According to Crystal (2003, p. 427), speech acts are categorized into several groups, including: directives, commisives, expressive, declarations, and representatives. By directives, speakers try to get their listeners to do something, e.g. requesting. By using commisives, speakers commit themselves to a future course of action, e.g. guaranteeing. Expressives are used for expression of feelings, e.g. apologizing. Declarations are used to bring about a new external situation, e.g. resigning. Representatives are used by speakers to convey their belief about the truth of a proposition, e.g. hypothesizing.

   Another important type of speech act which has attracted a lot of attention is indirect speech act. According to Crystal (2003, p. 232), indirect speech act refers to the action of an utterance whose linguistic form does not directly reflect its communicative purpose, as when *I'm feeling cold* functions

as a request for someone to close a door. According to Carroll (2008, p. 143), an indirect speech act can be made in several ways. One is to question the ability or willingness of the listener to perform an action, e.g. *Will you shut the door?* Another way is to indicate the reason that such an action needs to be done, e.g. *It's getting cold in here*. The reason behind using indirect speech act is that we like to be polite and non-intrusive, thus indirect speech act is a matter of politeness and saving other's faces.

2.7 Theories of Figurative Language Comprehension

As mentioned in the introduction, from one perspective, researchers have suggested three major theories to describe figurative language comprehension. These theories include: pragmatic, conceptual metaphor, and class-inclusion. The pragmatic theory held sway since Aristotle (Glucksberg, 2003) until a few decades ago that conceptual metaphor theory was suggested by Lakoff and Johnson (1980). This theory presented a clearer picture of metaphor comprehension and appears best equipped to explain instances in which we automatically access figurative meaning (Carroll, 2008, p. 150). The third major theory, class-inclusion, was proposed by Glucksberg and Keysar (1990) according to which we understand metaphors exactly as they are intended, as categorical assertions (Glucksberg, 2003). In the following parts, we will discuss these theories in detail.

2.8 Pragmatic Theory

Pragmatic theory holds that we comprehend figurative language by considering the literal meaning, then rejecting it (Carroll, 2008, p. 145). Based on this model, metaphor comprehension involves a discrete three-stage process (Glucksberg, 2003). For nominal metaphors such as *Neuroimaging is a gold mine*, the first step is to derive the literal meaning of the sentence. This yields the nonsensical interpretation that neuroimaging is a hole in the ground. The second step assesses this interpretation against the context of utterance. Because it does not make sense in context, we must then take the third step: a search for non-literal meaning that does make sense. Therefore, this model is based on the assumption that metaphorical statements are understood indirectly after a preliminary stage of literal meaning rejection. This preliminary stage is highly reliant on the context of utterance. Glucksberg (2003) challenges this view that literal meanings have unconditional priority and says that if it is true, then non-literal meaning should be more difficult and take more time to understand than literal meaning. On the issue of the amount of time needed to comprehend a metaphoric utterance, two almost contradictory views have been proposed. These two views put different degrees of emphasis on the impact of familiarity, conventionality, and salience of metaphorical meaning. On the one hand, some researchers such as Glucksberg (2003) argue that familiarity is

relatively unimportant when understanding well-constructed, apt metaphors. Doing an experiment, Blasko and connine (1993) found no difference in the time taken to understand metaphorically- and literally-intended expressions. On the other hand, Giora (1999) proposed that most words have multiple meanings that vary in their relative salience. When a metaphorical meaning is highly salient, the metaphor will be rapidly understood. When its meaning is relatively low in salience, then it will be understood more slowly.

2.9 Conceptual Metaphor Theory

According to conceptual metaphor theory, metaphors are not creative expressions but rather instantiation of underlying conceptual metaphor (Lakoff & Johnson, 1980, cited in Carroll, 2008, p. 146). Gibbs (1994) argues that there is small set of conceptual metaphors shared by many individuals within a culture. When we encounter a verbal metaphor, it automatically activates the corresponding conceptual metaphor. This model holds that every conceptual metaphor acts as a source of so many verbal metaphors. These verbal metaphors are understood on the basis of their corresponding conceptual metaphor. Lakoff and Johnson (2003, pp. 4-5) say that the conceptual metaphor *Argument is war* is reflected in our everyday language by a wide variety of expressions, such as:

>   Your claims are *indefensible*
>   He *attacked every weak point* in my argument. His criticisms were *right on target*
>   I *demolished* his argument
>   I've never *won* an argument with him
>   He *shot down* all of my argument
>   Upon encountering each one of these verbal metaphors, the underlying

conceptual metaphor, *Argument is war*, is activated and helps us to understand the verbal metaphors automatically. They contend that our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature. Lakoff and Johnson continue their argument by saying that the essence of metaphor is understanding and experiencing one kind of thing in terms of another. *Arguments* and *wars* are different kind of things and the actions performed are different kind of actions. But *Argument* is partially structured, understood, performed, and talked about in terms of *war*. When we understand metaphors, we create a kind of similarity between two phenomena, that is, phenomenon *A* is somehow similar to phenomenon *B*, so *A* can be understood in terms of *B*.

Some critics have questioned the assumption of conceptual metaphor theory that we comprehend verbal metaphors by activating underlying conceptual metaphors. For instance, Glucksberg, Keysar, and McGlone (1992) gave a number of metaphors to the participants of their study and asked them to paraphrase the metaphors. In some cases, the paraphrases were not

associated with the conceptual metaphors. On the basis of such results, they concluded that the assumption of an underlying conceptual metaphor for a number of verbal metaphors is questionable. However, conceptual theory is a good model that appropriately describes cases in which figurative meanings are automatically activated.

2.10 Class-Inclusion Theory

The third theory of figurative language comprehension is class-inclusion that was proposed to describe some observations which could not be explained by conceptual metaphor theory. According to this model, a word such as *jail* belongs to a number of different categories (Glucksberg & Keysar, 1990). It belongs to the category of punishments which includes other terms such as fines and tickets. This word can be included in the category of buildings whose other members are hotels and hospitals. But, when used as the vehicle of a metaphor, the word *jail* is included in another category other members of which are unpleasant conditions and confining situations. So, when we say, "*My job is a jail*", we include our job in this latter category. We give a specific meaning to it and include it in a specific category. Giving a specific meaning to a general term is called instantiation (Anderson & Ortony, 1975). Class-inclusion model holds that metaphors are understood as categorical assertions (Gluckeberg, 2003). So, in the mentioned example, we do not mean that our job is merely like a jail, but that it actually is a member of the category of situations that are extremely unpleasant, confining, and difficult to escape from. Glucksberg, McGlone, and Manfredi (1997) suggested that metaphors of the form *X is a Y* may be conceived as statements of property attribution, in which properties of the vehicle *Y* are attributed to the topic *X*. The properties attributed from the vehicle to the topic are those that are epitomized by the vehicle, and may characterize a dimension of within-category variations in the topic. This view has two implications. Firstly, metaphors are not simply transformed into comparisons (*X is like a Y*), but rather are understood as what they appear to be: class-inclusion assertions. Secondly, topics and vehicles provide different kinds of information to guide and constrain the comprehension process.

Cacciari and Glucksberg (1994) claim that the processes involved in the comprehension of language in discourse are common to literal and figurative language use. Drawing on this claim, Carroll (2003) says that one of the interesting features of class-inclusion model is that metaphoric utterances are not understood by resorting to any special process, thus literal and figurative meaning language are understood on the basis of the same general principles.

2.11 Structure-Mapping Theory

Gentner (1983, p.162) argues *that* "metaphors are predominantly relational comparisons, and are thus essentially analogies". According to structure-mapping theory, metaphors are understood on the basis of correspondence between two similar relations (Bowdle & Gentner, 1999). Thus, the metaphor "*My job is a jail*" is comprehended on the basis of similarity between two relationships: the relation between "*Me*" and "*My job*" and the relation between "*Prisoner*" and "*Prison*". The first one is mapped unto the second and in this way metaphor is understood. Metaphors in the general form of "*X is a Y*" are called nominal metaphors. *X* is called topic (target) and *Y* is the vehicle (base). Structure-mapping theory assumes that metaphor comparison involves alignment and projection (Bowdle & Gentner, 1999). Initially, relations between targets and between bases are aligned and then correspondent relations are projected unto each other. On the other hand, Ortony (1979) states that when shared attributes between topic and vehicle are few but striking, and often more salient in the vehicle than in the topic, metaphors are understood as attribute matches. These metaphors mainly involve conventional vehicles or conventional dimensional matches (Glucksberg, Gildea & Bookin, 1982; Lakoff & Johnson, 1980).

2.12 Conventionality and Aptness

Conventionality is the strength of association between a metaphor vehicle and its figurative meaning (Bowdle & Gentner, 2005; Wolff & Gentner, 2000). Some terms are frequently used in a metaphorical sense, and hence they become associated with their figurative meaning (Jones & Estes, 2006). So, when a term is used metaphorically in recurrent occasions, it becomes more conventional. Normally, the conventionalization process occurs gradually, although some researchers have tried to speed it up in experimental conditions. Aptness is defined as the extent to which the statement captures important features of the topic (Chiappe, Kennedy, & Smykowski, 2003). Aptness differs from conventionality in that it takes both the vehicle and the topic into account, whereas conventionality pertains to the vehicle only (Jones & Estes, 2005). Aptness is a matter of saliency and matching. A metaphor is apt if a salient property of the vehicle is attributed to a relevant dimension of the topic. Jones and Estes (2006) say that for a metaphor to be apt, two conditions must be met. Firstly, the vehicle term must have a salient property for attribution. Secondly, the salient property of the vehicle must be relevant to the topic.

2.13 Semantic Features or Semantic Aspects

According to Yule (2006), two types of meaning can be defined for a word: conceptual and associative. Conceptual meaning includes those aspects that are expressed by the literal use of the word. For example, the 'thinness' of a 'needle' is one aspect of its conceptual meaning. Associative meaning includes

the connotations that are conveyed by the word. For example, 'pain' and 'illness' are two aspects of associative meaning of 'needle'. These connotations are not an inherent part of the meaning. They are associations that are created in the mind when the word is used. In this article, the terms 'semantic aspects' and 'semantic features' are used to refer to both conceptual and associative components of meaning.

3. Method

3.1 Participants

The participants of the study were 35 undergraduate students at the Department of English of Shahid Chamran University. This group consisted of 17 males and 18 females. These students were between 20 and 25 years old (mean=22.1). All participants were Persian native speakers.

3.2 Instrument

The instrument used in this study was a test consisting of 20 items. In each item, a nominal metaphor in the general form of *X is a Y* was given to the participants. Each metaphor was followed by five semantic features of topic (*X*) and five semantic features of vehicle (*Y*). These sets of five words were somehow semantically related to the topic and vehicle (for example, cause and effect relationship or partial synonymy). The participants were expected to judge the relevancy of these semantic features based on a Likert scale ranging from 0 to 3 (*irrelevant*, *to some extent relevant*, *relevant*, and *absolutely relevant*) (see the appendix). For example, the metaphor *Discipline is fertilizer* was followed by the below-mentioned features (meaning associations) of topic and vehicle:

   Discipline: *being on-time*; *progress*; *planning*; *law*; *future success*
   Fertilizer: *chemicals*; *farming*; *fruit*; *giving strength*; *growth*

3.3 Procedure

Before conducting the experiment, the researchers presented 2 examples in order to make sure that the participants knew how to answer the items. Participants were given 60 minutes to judge the relevancy of each semantic feature of topic and vehicle in each metaphoric statement.

3.4 Data Analysis

To analyze the obtained data, the researchers assigned scores *0*, *1*, *2*, and *3* to *irrelevant*, *to some extent relevant*, *relevant*, and *absolutely relevant* options respectively. For each semantic feature, the relevancy scores selected by all participants were added and then divided by 1.05 (the reason behind dividing by 1.05 is to obtain a value of relevancy which is between 0 and 100). The

obtained value showed degree of relevancy of that semantic feature in the metaphor in terms of percentage.

4. Results and Discussion

Degree of relevancy of each semantic feature of topic and vehicle was calculated by the procedure explained in data analysis section. All in all, 200 values were obtained, each one indicating degree of relevancy of that feature in its metaphor in terms of percentage (The smallest possible value was 0 and the greatest possible value was 100). The minimum value of relevancy was 2.8 and the maximum value was 93.3. The full list of these values has been given in table 3.

Table 1

Degree of Relevancy of All 200 Aemantic Features of Topic and Vehicle in All 20 Items of the Test (Shaded Squares Are Related to the Topics of Metaphors)

2.8	15.7	26.6	37.1	40.9	48.5	59	65.7	70.4	85.7
2.8	16.1	27.6	37.1	45.7	48.5	59	66.6	70.4	87.6
4.7	16.1	27.6	37.1	46.6	49.5	59	66.6	72.3	87.6
4.7	16.1	28.5	37.1	46.6	49.5	59	66.6	73.3	87.6
4.7	16.1	28.5	39	46.6	51.4	59	66.6	75.2	87.6
4.7	18	28.5	39	46.6	51.4	59	68.5	75.2	89.5
5.7	18	28.5	39	46.6	53.3	59	68.5	75.2	89.5
5.7	20	28.5	39	47.6	53.3	60.9	68.5	76.1	91.4
8.5	20.9	28.5	39	47.6	53.3	60.9	68.5	76.1	91.4
10.4	20.9	28.5	40	47.6	53.3	60.9	68.5	76.1	91.4
10.4	20.9	31.4	40	47.6	56.1	60.9	69.5	79	91.4
10.4	20.9	31.4	40.9	47.6	57.1	62.8	70.4	79	92.3
10.4	20.9	31.4	40.9	47.6	57.1	62.8	70.4	79	92.3
10.4	22.8	33.3	40.9	47.6	57.1	62.8	70.4	80	92.3
10.4	24.7	35.2	40.9	48.5	57.1	65.7	70.4	80.9	92.3
12.3	24.7	35.2	40.9	48.5	57.1	65.7	70.4	80.9	92.3
13.3	24.7	35.2	40.9	48.5	57.1	65.7	70.4	80.9	93.3
13.3	24.7	35.2	40.9	48.5	59	65.7	70.4	80.9	93.3
13.3	24.7	35.2	40.9	48.5	59	65.7	70.4	84.8	93.3
13.3	24.7	35.2	40.9	48.5	59	65.7	70.4	85.7	93.3

The descriptive statistics of these values have been presented in table 2.

Table 2

The Descriptive Statistics of Relevancy Values

No.	Mean	Minimum	Maximum	Standard deviation
200	50.05	2.8	93.3	24.7

A quick look at table 1 shows that relevancy degrees of semantic features are extremely diverse. They are spread across a wide range. Also, standard deviation is a high value of 24.7, suggesting that degrees of

relevancy, as judged by the participants, are very diverse and cover a wide range.

The data obtained in this experiment suggest that some semantic features of this broad class are highly relevant in the process of metaphor comprehension and interpretation; on the other hand, some semantic features are nearly or perhaps absolutely irrelevant. Between these two extremes of high-relevancy and absolute-irrelevancy, there is a potentially long list of features which possess different degrees of relevancy. Some of these features are closer to high-relevancy extreme; in contrast, some are closer to absolute irrelevancy. For example, in one of the items, the metaphor *A business is a living organism* was followed by the below-mentioned features of topic and vehicle:

Topic (*business*): *involving money*; *rivalry*; *possible failure*; *developing*; *advertising*

Vehicle (*living organism*): *breathing*; *growing up*; *socializing*; *possessing different parts*; *living collectively*

For the topic, the features *developing*, *rivalry*, and *advertising* were judged to have 89.5, 46.6, and 4.7 degrees of relevancy. For the vehicle, the features *growing up*, *possessing different parts*, and *breathing* were judged to have 87.6, 28.5, and 8.5 degrees of relevancy.

Another important point among the collected data was the relative saliency of a specific semantic feature compared to other semantic features. The results showed that in 16 items, the difference between relevancy of a specific semantic feature of topic and degree of relevancy of other semantic features of topic was higher than 45. It means that one semantic feature of topic has been judged to be particularly salient. A very similar situation was observed among the data related to the vehicles of metaphors. In 15 items, the difference between the relevancy of a specific semantic feature of vehicle and the relevancy of other semantic features of vehicle was higher than 47.

5. Conclusions and Implications

As was mentioned in the previous section, degree of relevancy of semantic features of topic and vehicle varies considerably and covers a wide range. Some semantic features are highly relevant, while some other features are considered to be absolutely irrelevant. Between these two extreme ends of relevancy, some semantic features are considered to be to-some-extent relevant. However, in many cases, within this wide range of relevancy, there is a very salient feature whose degree of relevancy is considerably higher than other features. This outstanding feature of topic or vehicle makes the metaphorical statement apt and interpretable. That is, it creates a high degree of matching between topic and vehicle. When topic and vehicle match together

for the creation of a nominal metaphorical statement, it could easily be interpreted by the comprehender. In other words, the intended metaphorical meaning is derived mainly on the basis of this feature, while the irrelevant aspects of meaning are filtered out and are not taken into account in the process of metaphor comprehension. The completely-irrelevant aspects have no role in the process of metaphorical interpretation. Those features which are judged to be to-some-extent relevant play a supporting role and increase degree of aptness of metaphorical statement. For example, in judging the metaphor *A business is a living organism*, the features of *developing* and *growing up* are considered to be highly relevant; the features of *advertising* and *breathing* are considered to be almost irrelevant; the features of *rivalry* and *possessing different parts* lie between these two extreme ends of relevancy. However, the important point is the existence of a huge gap between degrees of relevancy of those features which lie at the high end and those which lie even at the middle of the range. In the mentioned example, difference between the relevancy of *developing* (completely-relevant, 89.5) and *rivalry* (to-some-extent relevant, 46.6) is 42.9. Also, the difference between the relevancy of *growing up* (completely-relevant, 87.6) and *possessing different parts* (to-some-extent relevant, 28.5) is 59.1. In both cases, which are related to the topic and vehicle of the same metaphor, relevancy of one aspect of meaning is significantly higher than other aspects. In other words, in both cases, one meaning aspect of topic and one meaning aspect of vehicle make the biggest contribution to the comprehension of metaphorical statement. However, the contribution of those aspects lying at the middle of relevancy range should not be ignored, because they might play a supporting role and make the metaphor more apt and possibly more interpretable and understandable.

If the class-inclusion model of metaphor comprehension is taken, one can argue that the direct inclusion of topic in an abstract class of vehicle is mainly done on the basis of highly-relevant features, while the completely-irrelevant features are not attended throughout the process of inclusion. In other words, the abstract class of vehicle is created in the mind of comprehender by focusing on the highly-relevant features of vehicle. The creation of this abstract class is facilitated by those features of vehicle which are to-some-extent relevant. The completely-irrelevant features of vehicle have no place in this abstract category. Therefore, the abstract class in which *a business* is included is a class of all entities which can develop throughout the passage of time. The other features of business such as *advertising* have nothing to do with this abstract category.

Based on the proposed model, it could be argued that when a comprehender is faced with a nominal metaphor, the most relevant semantic aspects of topic and vehicle are the first aspects that are activated in her/his mind. The most relevant semantic aspects function as an engine that activates less relevant aspects. Thus, it is proposed that the processes of metaphor

comprehension begin with the activation of most relevant aspects. This early stage is followed by the activation of less relevant semantic aspects of topic and vehicle. If the whole process of metaphor interpretation is divided into two stages, the derivation of metaphorical meaning is mainly done in the first stage. In the second stage, the metaphor is made more acceptable in the mind. In other words, some kind of very quick conventionalization occurs in the second stage. The processes of the first stage are mainly associated with highly-relevant meaning aspects of topic and vehicle, while the processes involved in the second stage are mainly associated with those aspects which are to-some-extent relevant. Therefore, highly-relevant aspects are meaning-producers, while to-some-extent relevant aspects are acceptability-producers.

Looking at it from the perspective of the structure-mapping model, one might argue that a given nominal metaphor is understood on the basis of correspondence between two specific relations, one of which is in the target (topic) domain and another one in the base (vehicle) domain. The relationship between *a newly established business* and *a fully flourished business* in the target domain and the relationship between *a newly born organism* and *a fully developed organism* in the base domain could be salient for the comprehender when s/he is interpreting the metaphor *A business is a living organism*. Therefore, it can be argued that creating a correspondence between these two relations and their mapping play the main role in the process of metaphor comprehension. It must be noted that many relations can be created and mapped unto each other throughout metaphor comprehension. For example, the relationship between *a living organism* and *its constituting parts* is mapped unto the relationship between *a business* and *its various parts*. However, such relations play a secondary role. They function as a tool by which the metaphor is made more apt. The primary relations are at the focus of attention, while the secondary relations are attended with a lower degree of focus.

To adopt Falkenhainer, Forbus, and Gentner's (1989) term, it could be said that the most relevant relations in the target (topic) and vehicle (base) domains function as a *structure-mapping engine*. They are the first relations that are activated in the mind of comprehender. Structure-mapping engine constructs a set of consistent analogical mappings between base and target (p.273). Some of these mappings might be more relevant than others. They play a more outstanding role in making the metaphor apt. However, all these mappings play a secondary role in the process of metaphor comprehension. The most salient role is played by the relation having the highest degree of relevancy. The activation of this relation occurs in the first stage of metaphor understanding. Those relations and mappings which have a lesser degree of relevancy are activated at a later stage.

To take an example, the metaphor *Discipline is a fertilizer* is understood on the basis of correspondence between two parallel relations: as

discipline helps human to progress in life, fertilizers help the plants to grow. This is the most salient relation that is constructed in the mind of comprehender at the first stage of metaphor comprehension. This early stage is followed by another stage in which a number of other mappings are constructed by structure-mapping engine. In the mentioned example, the following mappings and possibly several other mappings are constructed in the second stage of comprehension processes:

> *Human → plant*
> *A successful human → a fully grown plant*
> *Success of human → fruit of the plant*

These mappings play a secondary role in the process of comprehension. In other words, they can be considered as the by-product of the main relation constructed in the first stage. The mappings produced in the second stage make the metaphor more acceptable and more apt. Those aspects of meaning which are judged to be completely irrelevant have no role in either stages.

Based on the preceding discussions, it is suggested that among various semantic features of topic and vehicle, in many cases, one feature of topic and one feature of vehicle play the main role in the process of metaphor comprehension. These salient semantic features of topic and vehicle are attended focally by the comprehender. Those features which are to-some-extent relevant are not at the center of attention; they are on the periphery. However, they play a supporting role, making the metaphor more acceptable and, possibly, more easily interpretable. To summarize, level of matching between topic and vehicle or the extent to which the topic is properly described by the vehicle is mainly based on a given aspect of vehicle's meaning rather than several aspects of its meaning. When a comprehender is faced with a nominal metaphor, the highly-irrelevant aspects of meaning are completely filtered out; the nearly-relevant aspects are filtered out by their degree of relevancy; the highly-relevant aspects play the key role in metaphor comprehension.

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Appendix

In each one of the following statements, two words have been underlined. After each statement, five features, meaning aspects, or semantic associations of these underlined words have been given in the tables (left columns). Determine degree of relevancy of these features or meaning aspects in each statement by putting 0, 1, 2, or 3 in front of these features.

irrelevant=0 **to some extent relevant=1** **relevant=2 completely relevant=3**

1. A <u>fireman</u> is <u>boxer</u>

fireman	*Degree of relevancy*
heat	
fight against something (fire)	
danger	
hurt	
destruction	

boxer	*Degree of relevancy*
crying during competition	
hard work	
battle	
winning and losing	
perspiration	

2. An <u>animate</u> being is a <u>machine</u>

animate being	Degree of relevancy
having different organs	
sometimes is affected by illness	
having some degree of intelligence	
it needs to be feed	
it needs rest	

machine	Degree of relevancy
possessing an engine	
it needs protection	
its parts work cooperatively	
it sometimes breaks down	
needs someone to control it	

3. <u>Artists</u> are <u>gods</u>

artists	Degree of relevancy
creation	
beauty	
nicety	
love	
novelty	

gods	Degree of relevancy
nature	
invention	
power	
origin	
capability	

4. <u>Billboards</u> are <u>warts</u>

billboards	Degree of relevancy
being everywhere in the cities	
largeness	
displaying	
visible	
having posters	

warts	Degree of relevancy
skin disease	
hard to get rid of	
spot	
protrusion	
ugliness	

5. <u>Creativity</u> is a <u>toaster</u>

creativity	Degree of relevancy
ability	
accomplishment	
wealth production	
generating new things	
imaginativeness	

toaster	Degree of relevancy
livelihood	
cooking	
supplier	
bread maker	
it is made of different parts	

6. Money is blood

money	Degree of relevancy
it is inherited	
it can be lost	
living is reliant on it	
it can be a present	
food is bought by it	

blood	Degree of relevancy
it is essential for life	
it is a constituent of the body	
it provides cells with Oxygen	
it can be donated	
it is existent in every part of the body	

7. A job is a jail

job	Degree of relevancy
it occupies your time	
responsibility	
sometimes, people are being exploited in their jobs	
sometimes, it is difficult	
low payment	

jail	Degree of relevancy
isolation	
drudgery	
prisoners are dominated	
hard time	
restriction	

8. A lawyer is a lighthouse

lawyer	Degree of relevancy
they know the law	
they are consulted during a difficult situation	
they defend their clients	

assistant	
a special group of people need them	

lighthouse	Degree of relevancy
it is necessary at windy nights	
being at seaside	
it is used at nights	
it is life saving	
it is sometimes necessary	

9. Danger is spice

danger	Degree of relevancy
people might lose something in dangerous situations	
it might threaten peoples' lives	
excitement	
a difficult situation	
adventure	

spice	Degree of relevancy
it makes food delicious	
it might be found in various types	
it is stimulating	
excessive spice is annoying	
it can be found in different colors	

10. Theory is a building

theory	Degree of relevancy
it gives shape to scattered bodies of knowledge	
a theory is picture of some relations	
it develops throughout time	
it is the base of advancement in knowledge	
it might take a long time to be created	

building	Degree of relevancy
it has a base	
having different components	
it is an organized collection	
it needs time to be made	
it might break down	

11. Crime is a disease

crime	Degree of relevancy
it might put criminals into trouble	

criminals are bad guys	
it creates problem for society	
it is unavoidable in all societies	
sometimes, it can be prevented	

disease	Degree of relevancy
they can be prevented in some cases	
it creates problem for body	
medicine is needed to cure it	
it cannot be avoided	
it might develop and become more serious	

12. The <u>cheering crowd</u> was a <u>thunder</u>

cheering crowd	Degree of relevancy
excitement	
the cheering might happen unexpectedly	
a messy situation	
the cheering might frighten people	
loud noise	

thunder	Degree of relevancy
it is frightening	
it happens out of the blue	
it is preceded by a lightening	
it has a loud sound	
it is sometimes accompanied by a chaotic situation	

13. <u>Education</u> is <u>lantern</u>

education	Degree of relevancy
education needs cooperation among various people	
it is needed for progress	
it is an ever-present teacher	
it helps people to solve their problems	
it is precious	

lantern	Degree of relevancy
people can carry it to anywhere	
its light can be increased	
it needs oil	
it helps people to find their way in darkness	

its light might fade	

14. A <u>rumor</u> is a <u>virus</u>

rumor	Degree of relevancy
it is usually untrue	
it spreads rapidly	
it has a source	
it might create excitement or anxiety	
it is temporary and short-lived	

virus	Degree of relevancy
it is very difficult to prevent	
it might lead to epidemic	
creates problems for body	
it cannot be seen	
rapid transferability	

15. <u>Babies</u> are <u>vacuum cleaners</u>

babies	Degree of relevancy
babbling	
toddling	
they pay no attention to warnings	
they put everything in their mouth	
they have to be taken care of	

vacuum cleaners	Degree of relevancy
sucking everything	
they create sound	
their shape is similar to someone who is toddling	
they can be emptied	
they need to be controlled	

16. Some <u>stores</u> are <u>jungles</u>

stores	Degree of relevancy
being in a mess	
some stores are very big	
people might lose everything in some stores	
being crowded	
various things can be found in some stores	

jungles	Degree of

	relevancy
numerous creatures can be found in a jungle	
they are big	
it is hard to find your way in a jungle	
there is no regulation in a jungle	
jungles are crowded with trees	

17. The <u>building</u> is a <u>beehive</u>

building	Degree of relevancy
some buildings are crowded with people	
the blocks of the building are very small	
people living in the building cooperate with each other	
some buildings are like a cube	
some buildings are full of noise	

beehive	Degree of relevancy
there is a lot of buzz in a beehive	
it is full of honey	
beehives are crowded with bees	
bees live cooperatively in a beehive	
a beehive is a small structure	

18. <u>Discipline</u> is a <u>fertilizer</u>

discipline	Degree of relevancy
being on-time	
law	
it leads to progress	
future success	
planning	

fertilizer	Degree of relevancy
it is a chemical substance	
it is used in farming	
fruit	
it gives strength	
it leads to growth	

19. A <u>business</u> is living <u>organism</u>

business	Degree of relevancy
it involves money	
it involves rivalry	

possible failure	
developing	
it involves advertising	

living organism	Degree of relevancy
they breathe	
they grow up	
socializing	
they possess different parts	
they live collectively	

20. Research is mountain climbing

research	Degree of relevancy
it involves hard work	
it involves test and error	
findings new things not seen by others	
it might lead to failure	
there are different ways to do a research	

mountain climbing	Degree of relevancy
few people can do it	
reaching a peak not seen by others	
it is very difficult	
people might fail to reach the peak	
it is dangerous	