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Péter Csatár

Data Structure in Cognitive Metaphor Research

Edited by András Kertész



PETER LANG
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Introduction^{*}

The cognitive research of metaphor includes in a broader sense besides conceptual metaphor theory (Lakoff & Johnson 1980; Lakoff 1987, 1990, 1993; Kövecses 1990), also blending theory (Fauconnier & Turner 2002), Gentner's structure mapping theory (Bowdle & Gentner 2005; Gentner & Bowdle 2008), Glucksberg's property attribution theory (Glucksberg 2001) and some relevance theoretical models of metaphor (Tendahl 2009). This research area which aims to explore the mental processes underlying metaphors in everyday language has not only processed a huge amount of linguistic material during the past three decades, but requires its researchers to carry out continuous methodological reflection as well. For that reason, from time to time certain methodological questions are highlighted, whose careful examination is essential from the point of view of data collection or from that of evaluating the hypotheses of the theory (Gibbs 2006; Steen 1999, 2007; Stefanowitsch & Gries 2006; Kövecses 2011). The following collection of studies I have written over the last ten years is concerned with some of the basic questions of methodology and data structure in the cognitive research of metaphor.

The following methodological phenomena and the questions related to them deserve special attention within cognitive metaphor research (Kertész, Rákosi & Csatár 2012):

- (i) the reliability of data sources
- (ii) the possibility of the integration of data stemming from different data sources
- (iii) the function of data within the theory.

However, the importance of these phenomena is not restricted to the field of the cognitive research of metaphor, since research into the methodological foundations of theories in contemporary theoretical linguistics has proliferated in a general sense (Schütze 1996; Lehmann 2004, Schwarz-Friesel 2009; Kertész & Rákosi 2008, 2009). These questions can also be summarized as *problems pertaining to the data structure of theories*, which also involve the questions of the theoretical status of data, of the reliability of their sources, of the way they are gathered, and their evaluation and combinability (Kertész & Rákosi 2012).

The study of data structure has been motivated by the observation that linguistic research is usually not concerned with questions such as, for instance, why studies rely on data from a single data source (for example on introspec-

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tive-intuitive data), when there are several data sources at their disposal; or why they consider the use of a single method (for example the linguistic intuition of the linguist) to be effective in the evaluation of the data. Or to express it differently: why do researchers reduce the argumentative strength of their conclusions by not taking into consideration other data sources and methods during the research process?

This quasi non-reflective use of data and methods – at least in cognitive metaphor research – has the consequence in many cases that researchers assign a special status to certain data types (e.g. experimental data are better than intuitive data) by implicitly following certain beliefs and views in scientific methodology without providing further arguments for their decision, although the relationship between different data types and the criteria of their reliability are not clarified at all.

Nevertheless, my collection of articles includes studies that concentrate on an extremely exciting field from the perspective of the problems surrounding data structure, namely on cognitive metaphor research. Since the changes in linguistic metaphor research have had the greatest impact over the last few decades precisely in the field of data structure, as a result, cognitive metaphor research provides an excellent illustration of those problems which have been highlighted in the past few years concerning the data structure of linguistic theories in general. With my studies I wish to contribute to the solution of these methodological and data handling problems in such a way that, on the one hand, I make an attempt to identify the causes of certain methodological problems, and on the other, I survey the possibilities that might provide a solution to at least some aspects of these problems.

The first two papers are concerned with the two most fundamental problems of data structure in cognitive metaphor research: *the problem of identifying metaphors*, and that of *the reliability of the applied data gathering methods*. My third contribution examines *the combinability of data gathered by different methods*, while in the fourth I analyse the advantages and the emerging problems of so called *hybrid theories*, which integrate the results of cognitive approaches working with fundamentally different empirical and theoretical assumptions.

In the following I summarize the structure and results of the studies.

In the first study, *The problem of identifying metaphor in conceptual metaphor theory*, I consider the problem of identifying metaphors, i.e. that of determining the data. The starting point of the paper is the observation that the classic studies of the conceptual metaphor theory (Lakoff & Johnson 1980; Kövecses 1990) gather data in an introspective-intuitive way, i.e. the data source is often the linguist who assorts the relevant data from a pool of linguistic data intuitively.

tively. In my paper I review the critical data handling problems that stem from this approach to data processing.

The problem of intuitive-introspective data gathering consists of two main interdependent components: The first problem is *the theory-dependent nature of the introspective-intuitive procedure*, and the second is *the reliability of the linguistic intuition* that enables the identification of metaphors. The question of theory-dependence manifests itself in an even more intense way in conceptual metaphor theory, since the classic version of the theory (Lakoff 1990, 1993; Lakoff & Johnson 1980) rests on the premise that, on the one hand, every competent language user is able to process (i.e. to understand and also use) metaphorical expressions in everyday language, but on the other hand, the processing is automatic and unconscious, i.e. the language user cannot account for why she understands an expression in the way she does (i.e. metaphorically). As a consequence, the gathering and evaluation of data is highly problematic within the traditional version of conceptual metaphor theory. Namely, while gathering data, i.e. metaphorical expressions, the researcher cannot rely on the explicit judgments of the non-expert language user about what she considers to be a metaphor, since this kind of knowledge is not accessible to the non-expert language user. But when the linguist relies on her own judgments (or on those of a skilled language user), she identifies the relevant data by expressly making the notion of metaphor of her own theoretical approach absolute, i.e. the researcher will consider only those expressions to be metaphoric which are said to be metaphoric in her own theory.

That is to say, while her theoretical intention is to formulate objective generalizations about the mental status of metaphor, her data gathering and evaluation procedures eventually only provide theory-dependent data for this purpose. In my paper I argue that conceptual metaphor theory needs to find some way of bridging this gap between theoretical objectives and methodological options, and this needs to proceed hand in hand with a reshaping of the theory's methodology.

The other component of the metaphor intuition problem is of a functional nature, and includes *the question of the reliability of metaphor intuition*. The question of reliability arises because the reliability of natural language intuition also raises well-known doubts in other fields – for instance in the field of the application of grammatical and lexical well-formedness. This is the reason why it is important to ask to what extent metaphor intuition as a data source in metaphor identification can be considered reliable, i.e. to what extent informants can be influenced when they decide whether or not linguistic expressions are metaphoric. This question is closely interrelated with the problem of theory-dependence, since the training of informants means they acquire a certain notion of

metaphor, and consequently the question arises of to what extent trained intuition is able to identify all those expressions in a text corpus which could be considered metaphoric based on the underlying notion of metaphor. In my paper in congruence with the relevant literature (Steen 1999) I argue for a research perspective according to which researchers should make the process of metaphor identification transparent and should endeavor to control subjective aspects at the most. Since the first appearance of my study (2005) several valuable proposals have emerged. Methods have been applied originating both in corpus linguistic procedures (Stefanowitsch 2006a, 2006b; recently Majoros 2013) and discourse analysis (Pragglejaz Group 2007; Steen 2007; Steen et al. 2010) which seem to provide suitable solutions to the problems explicated in my study.

Whilst the first paper is concerned with identifying the components of the problems surrounding metaphor intuition as the source of data gathering, and with their consequences, the second study, *Data collection in metaphor research: old problems and new approaches*, investigates the question of the extent to which the solutions offered in the literature to one of the problems related to metaphor intuition, namely to *the problem of reliability*, can be considered to be rewarding.

The basis of my investigations is provided by those data gathering techniques that either (i) consider metaphor intuition to be their inherent component as a data source, such as the introspective-intuitive data gathering procedures, or (ii) those that do not consider metaphor intuition as their inherent component for two specific reasons: firstly, they do not regard the method of accessing metaphor intuition as practical, i.e. they do not think that the process of accessing metaphor intuition can be broken down into clearly defined steps, and secondly, they deem metaphor intuition itself unreliable, since it can easily be influenced and, furthermore, it may also contain subjective elements (Stefanowitsch 2006b).

Following the critical analysis of the introspective-intuitive method, I discuss approaches that are claimed by their representatives to provide an alternative to the introspective-intuitive approach. I argue for the thesis that some of the approaches that have been recently put forward – e.g. Steen’s five-step model (Steen 1999) – are incapable of solving the problems of the introspective-intuitive method and are dependent on intuition themselves. Furthermore, Steen’s method is not suitable for processing relatively large amounts of linguistic data and identifying metaphors within them. Instead, it can be considered an alternative procedure for analysing metaphors, enabling the analysis of a single metaphor.

The other group of methods for metaphor identification, i.e. some of the manual methods and the automated corpus processing approaches, intend to re-

place the introspective-intuitive process as a way of collecting data, or at least limit its scope (Deignan 1999, Stefanowitsch 2006b). The increasingly widespread use of corpus linguistic tools within the theory of conceptual metaphor is in part the result of a general tendency. Due to the rapid development of electronic data processing over the past two decades, an enormous amount of linguistic material has become accessible in the form of electronic linguistic corpora. The adoption of this general tendency by the theory of conceptual metaphor was driven by the problems that had emerged in connection with the introspective-intuitive method, which had been almost exclusively used previously. I show that these corpus-based approaches still rely on metalinguistic intuition and cannot rid themselves of the introspective-intuitive method completely, contrary to the claims of some of their proponents. This is probably not a coincidence. The analyses in my second study attest that even corpus linguistic methods are dependent on metalinguistic intuition. In spite of this, they can rightly be claimed to be serious alternatives to the introspective-intuitive data collection method.

Therefore, corpus linguistic approaches should relate in a much more differentiated way to metalinguistic intuition, and should not focus on eliminating it, but rather on appreciating and managing the problems that appear as a consequence of the inevitable subjective elements related to several elements of the methods that are being applied. These problems include the identification of those – individual, social and theoretical – factors that influence intuition, as well as the examination of the cognitive processes through which metalinguistic judgements emerge.

The other problem common to all methods discussed in the second study is that their adherents expect the solution of all methodological problems from the application of a single linguistic method. This expectation might be connected to the fact that the representatives of conceptual metaphor theory overestimate linguistic data as a source of insights and use them almost exclusively as the data source from which they derive their generalisations regarding mental phenomena. Therefore, I argue for the thesis that it would be important to strive for the combination of methods and data from different disciplines relating to metaphors. In this context, it is probably extremely important to include further data sources in the investigation, to employ new methods, and, crucially, to coordinate them.

The third study, *Principles of integrating psycholinguistic experiments in metaphor research*, can be looked upon as a continuation of my preceding study since it focuses on the other important aspect of the data structure problem in conceptual metaphor theory, that is, *the problems and prospects of integrating experimental results* in conceptual metaphor theory. By analyzing metaphor ex-

periments (Boroditsky 2000; Boroditsky & Ramscar 2002) I argue that restricting psycholinguistic experiments to a corroborative, that is, verifying function, induces many problems in cognitive metaphor research. In this paper, therefore, I attempt to provide an answer to the following questions: What methodological principles are of help to the linguist, when experimental results turn out to be of a problematic nature or, if there is no problem with the experiment at all, how can the anomalies be handled that emerge from the conflict between linguistic analysis and experimental results? By means of sample analyses some methodological principles are suggested that are regarded as being able to provide a basis for coming to grips with problems, such as the problem of contradictory results and that of reproducibility.

These principles, which might well be understood as specific explications of Lakoff's *the principle of cognitive commitment* (Lakoff 1993: 246) – “to take experimental evidence seriously” –, are the following: (i) the principle of reproducibility, (ii) the principle of alignment, and (iii) the principle of considering alternatives.

The task of these principles is to evaluate the acceptability of experiments from various perspectives. One of these prevailing perspectives concerns the role of experiments in theory-building. In this sense the principles of reproducibility and alignment are called on to guarantee that only reliable, i.e. controlled, results find their way into the theory. The principle of considering alternatives evaluates an experiment with respect to how valuable its results are in debates with rivals. A third aspect, on the basis of which the above principles evaluate the acceptability of experiments, is the need for the relation between experiments and linguistic analyses to be clarified. In this respect, the principle of reproducibility states that reproducibility is one of the most important criteria in order for an experiment to be used as a reliable testing device in the evaluation of linguistic analyses. Finally, the principle of alignment discusses the relationship between experiments and linguistic analyses *expressis verbis*, in that it declares that ultimately none of the procedures has absolute priority over the others as a testing device.

By using these conceptual distinctions the usefulness of a particular experiment can be tested, and it can also be made clear, what function can be attributed to the given experiment in conceptual metaphor theory.

In the fourth study, *Hybrid theories in contemporary cognitive metaphor research*, my aim was to analyze the theoretical and empirical foundations of so called hybrid theories (Tendahl 2009). These theoretical constructs are a result of merging insights and ideas of different theories in metaphor research, in this case conceptual metaphor theory and relevance theory. As will be shown, there is hardly any point upon which both theories in their traditional versions would

agree, therefore as a next step I analyze how hybrid approaches try to dissolve the differences between the two theories within a single framework. After the analysis of hybrid theories I take into consideration how contemporary metaphor research could benefit from them, i.e. how hybrid theories can provide an answer to criticism formulated primarily against conceptual metaphor theory and relevance theory respectively, because of their theoretical elaboration and empirical foundations.

Summing up the results of the studies, we can formulate the conclusion that the last decade has witnessed a methodological shift in cognitive metaphor research. The analyses presented in the first three chapters take into account the different aspects of this shift. Based on these the present situation can be described as follows. Researchers have successfully managed to translate the interdisciplinarity that was earlier only stated as a basic guiding principle into the actual integration of methods and data sources. The emergence of more recent – corpus linguistic, psycholinguistic and discourse analytic – methods, and the integration of their results (providing convergent evidence) point towards the conclusion that cognitive metaphor research has been re-founded on fresh methodological bases. Nevertheless – as becomes clear in the third paper – the situation has in no way been simplified, since the principles that define the relationship between methods and data sources and their hierarchy need to be established and applied in actual research. Within research into metaphor, the integrative aspirations have also borne fruit on the theoretical level in the form of hybrid theories. The analysis of these latter in the fourth paper shows that though the hybrid theories are capable of providing relevant answers to certain critical questions, they have more than one problematic point, which indicates that the study of the methodology and data structure of theories still has to face numerous tasks in the future.

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