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# Cognitive Aspects of Metaphor Comprehension: An Introduction

Yeshayahu Shen

*Poetics and Comparative Literature, Tel Aviv*

## 1. The Ubiquity of Metaphor

"The ubiquity of metaphor" is not just the title of a recent book on metaphors (Paproté and Dirven 1985)—it is also a true statement about developments in the study of metaphor over the past decade. It is a true statement in two separate, though complementary, respects.

First, metaphor has become a popular interdisciplinary topic of research in almost all disciplines comprising the "cognitive science" paradigm, namely, linguistics, philosophy, psychology, artificial intelligence, and literary theory, as well as related disciplines, such as education, psychotherapy, and so on. This (renewed) interest in metaphor and related phenomena (such as analogy, simile, etc.) has resulted in an impressive increase in the number of publications on metaphor during the past ten to fifteen years or so (Ortony 1979a, 1979b; Sacks 1979; Honeck and Hoffman 1980; Paproté and Dirven 1985; Haskell 1987), as well as in the establishment of a new journal devoted to the study of metaphor (*Metaphor and Symbolic Activity*), books covering a variety of related areas, and numerous articles and papers.

However, the ubiquitous character of metaphor is more profoundly

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exhibited in the widely held belief that metaphor neither pertains merely to phenomena occurring in the domain of poetic language nor is a linguistic phenomenon per se, but rather that it is a much more widespread conceptual process which should be examined from a broader interdisciplinary perspective. Such a conceptual process is located in various phenomena, including problem solving, judgment of similarity, analogical reasoning, and categorization (see, e.g., Lakoff 1987).

## 2. What Motivated This Special Issue?

So why, after all, do we need another collection of papers on metaphor? The answer is simply that, despite the recent interdisciplinary thrust in the research of metaphor, no real integration between recent developments in two of the major disciplines studying metaphor, namely, cognitive psychology and literary theory, has been established so far. Moreover, the fact that neither of these disciplines has attempted to converge with the other represents a marked deficiency in both.

The lack of real integration between literary theory and cognitive psychology can be noted by glancing at the major collected volumes on metaphor which have appeared over the past decade or so. At best, these collections of papers only marginally attempt to integrate the cognitive-psychological and literary studies of metaphor. While they do attempt to link cognitive psychology, philosophy, and linguistics (and related) disciplines (e.g., Ortony 1979b; Honeck and Hoffman 1980; Paproté and Dirven 1985), or literary theory and philosophy (the main thrust of the collection edited by Sacks [1979]), there is no serious attempt in any of them to integrate literary theory and cognitive psychology. To my mind, such an integration is sorely missing. Let me begin by pointing out some of what literary theoreticians who study poetic metaphor stand to gain from recent developments in cognitive psychology.

### *What Literary Theory Stands to Gain from a*

#### *Convergence with Cognitive Psychology*

While previous studies of metaphor in either philosophy, linguistics, or literary criticism (see, e.g., Lakoff and Johnson 1980) have been well aware that a metaphor is not simply a linguistic entity (i.e., "a figure of speech"), but is rather a conceptual phenomenon which cannot be defined or comprehended on the linguistic level, recent psychological studies have fully established metaphoricality as a central cognitive mechanism. Its centrality has been established by demonstrating the role played by metaphor in such diverse contexts and domains of (cognitive) activity as the previously mentioned problem solving (Hol-

land, Holyoak, Nisbett, and Thagard 1987), categorization mechanisms (Lakoff 1987; Glucksberg and Keysar 1990), similarity judgments, and analogical reasoning, to mention but a few.

The realization that metaphor plays a major and currently widespread role in human cognition must no doubt be taken into account by a comprehensive theory of poetic metaphor which addresses the relationship between the mechanisms pertaining to, for instance, the structure and interpretation of poetic versus non-poetic metaphors. Such a theory must also address such a question as: Do poetic metaphors represent only one type of metaphor whose basic characteristics are shared by non-poetic metaphors, or do they represent an entirely separate phenomenon? Thanks to the advances of cognitive psychology, such a question can now be addressed and dealt with far more adequately than before.

Over and above such general considerations, the integration of a theory of poetic metaphor with some of the more recent developments in the psychological study of metaphor would yield an immediate return. Direct potential contributions lie in three major areas of the study of metaphor, namely, metaphor identification, interpretation, and evaluation.

1. Arguably, any theory of (poetic) metaphor must seek to define the criteria involved in the process of identifying metaphors and to distinguish between these and other, related phenomena. For example, a comprehensive theory would be able to distinguish between the following types of comparisons: "cigarettes are like pipes" and "cigarettes are like pacifiers." Clearly, there is no straightforward linguistic criterion which would enable one to identify the first comparison as literal and the second as metaphorical (this intuitive distinction is discussed in Ortony [1979a] and is supported by empirical evidence). Arguably, the distinction between these types of comparison has to do with the notion of "conceptual domain," since the first (literal) comparison compares objects belonging to the same conceptual domain, while the objects compared in the second one have been selected from two different domains. Clearly, the notion of "domain," its internal structure, its memory representation, its retrieval from memory, and other features, is far more developed in cognitive psychology (see, e.g., Gentner 1983; Tourangeau and Sternberg, 1981, 1982) than in literary theory. Thus, it would greatly benefit students of literature to be able to accommodate theories of knowledge representation, especially those pertaining to the cognitive psychology notion of domain. Various aspects of knowledge representation are discussed in this issue, particularly in the articles by Boaz Keysar and Sam Glucksberg and by Yeshayahu Shen, which advance the view that metaphor interpretation is based on a process of "ad hoc" category formation, a notion

that plays a central role in recent theories of knowledge representation (see, e.g., Barsalou 1983). Another argument concerning the same notion is found in the article by Albert Katz, who suggests a theory of metaphor that is based on a model of knowledge representation grounded in a distinction between the two levels on which knowledge about concepts is represented, namely, the domain level and the instance-specific level.

2. Another major issue currently being debated in the theory of poetic metaphor is metaphor interpretation. Here, several observations are made by literary theorists regarding the ways in which metaphor interpretation can be substantiated, specified, modified, or even totally rejected as a consequence of recent developments in the psychological study of metaphor. Thus, to give just one example, Max Black's observation (which has been adopted by many students of literature), according to which metaphor interpretation involves interaction between two conceptual domains, can be developed and substantiated by far more advanced proposals which empirically test and theoretically address the specific mechanisms involved in this interaction (see, e.g., Tourangeau and Sternberg 1981; Gentner 1983; Shen 1989). At least two papers in this issue directly address such mechanisms by developing empirically supported theoretical notions which account for certain aspects of the complex process of metaphor interpretation. Most notable in this regard is Raymond Gibbs's paper, which argues in favor of a *product/process* distinction while attempting to accommodate several major findings pertaining to metaphor comprehension. Keysar and Glucksberg also address this issue by inquiring whether the interpretation processes of metaphorical language differ from those of literal language, concluding in the negative.

3. Literary theory also stands to benefit directly from cognitive psychology studies of metaphor appreciation, that is, what makes one given metaphor more apt than another. Let me say once again, without going into great detail, that cognitive psychology has recently developed an experimentally substantiated theoretical framework (see, e.g., Tourangeau and Sternberg 1981; Gentner 1983) that bears directly on the study of poetic metaphor. This framework, parts of which are discussed in Albert Katz's paper, is also of direct relevance to the study of poetic metaphors discussed in some detail by Gerard Steen. Steen's paper bears on Gentner's psychological theory of metaphor, particularly on the distinction between expressive metaphor and explanatory analogy, addressing the issue in a broader discourse theory of metaphor recently developed in literary theory, namely, "the empirical study of metaphor."

#### *What Cognitive Psychology Stands to Gain from an Interaction with Literary Theory*

It is my contention that, just as literary theory stands to gain from an interaction with cognitive psychology, the latter can also benefit from the older tradition of studying poetic metaphors within literary theory.

1. Perhaps the most immediate advantage of the interaction between cognitive psychology and the study of poetic metaphor involves the very examination of a natural corpus. Unlike most psychological studies, which typically use artificially constructed metaphors designed in accordance with experimental requirements, metaphors appearing in poetic texts provide a natural sample, created and read in a natural context.

2. A widely held view in literary theory (as found, for example, in Russian Formalist writings on this topic) maintains that poetic phenomena in general and, by implication, poetic metaphors, represent a deviation from, or a violation of, the norms characterizing non-poetic phenomena; this deviation is itself norm-governed (see Shen [submitted]). Clearly, any cognitive theory wishing to determine the norms by which such a phenomenon as metaphor is processed via human cognition, as in the psychological study of metaphors, will benefit directly from examining poetic metaphors. These are relevant in two respects: First, poetic metaphors provide a backdrop against which several tendencies regarding metaphor structure and comprehension described by psychological studies (such as metaphor asymmetry, explicitness vs. implicitness of the metaphorical ground, and so on) can be evaluated. Secondly, they provide a corpus of metaphors representing the most radical violation of norms which still lie within the scope of comprehensibility, and, as such, they are of great interest to cognitive psychology. Thus, poetic metaphors themselves and strategies of interpreting them, as practiced and theoretically defined within literary theory, could supply cognitive psychology with a basis for defining the norms from which poetic metaphors deviate, demarcate the boundaries of deviation, and define cognitive strategies for coping with those violations. David Fishelov (whose paper will appear in a follow-up to this issue) makes an attempt to distinguish poetic from non-poetic similes and addresses some of the parameters which pertain directly to this issue. Mark Turner's paper here is also related to the above in its attempt to define the principles used to understand metaphorical expressions that are not manifestations or realizations of more basic conventional metaphors.

3. Another issue which has recently become central in the study of metaphor concerns the contextual aspects of metaphor compre-

hension, particularly those pertaining to the communicative situation that affects metaphor comprehension (see, especially, the papers here by Keysar and Glucksberg and by Katz). Clearly, the communicative situation involved in comprehending poetic metaphors, as part of a poetic text, poses a challenging case for any theory of the pragmatic aspects of metaphor comprehension. Thus, literary theorists (for example, the Russian Formalists) have argued that the goals of the poetic communication process (such as the foregrounding of linguistic means over the content of the message, or the deliberate creation of ambiguity, and so on) are primarily aesthetic rather than informational ones. This establishes the claim that metaphor represents a radically different type of communication, that is, one which is not information oriented to begin with.

The very definition of such aesthetic communicative goals as well as their effects on the comprehension of metaphors in a poetic context, as discussed in literary theory, pertain directly to the recent interest shown by those dealing with the pragmatic aspects of metaphor comprehension in cognitive psychology. The complex issues involved in the characteristics of the poetic communicative situation are discussed in some detail by Gerard Steen, who attempts to integrate recent developments in the "empirical study of literature" and psychological studies of metaphors.

4. The psychological study of metaphors has recently shown an increasing interest in the differences between expressive metaphors, such as those appearing in poetic texts, and non-expressive analogies, such as those appearing in scientific and educational contexts (see Gentner 1983). Analogies are usually defined as the mapping of relations from a source domain onto a target domain. In a non-poetic context such mappings should meet the clarity requirement, that is, the requirement that the mapping be straightforward and unequivocal. Such straightforward mapping is presumed to obtain when a one-to-one matching relation holds between the source and target domains (see Gentner 1983 for a detailed description of this notion of clarity).

By contrast, it is reasonable to assume that poetic metaphors provide a rich source of systematic strategies for violating such requirements. Although the importance of this assumption and its relevance to the psychological study of metaphor has been acknowledged by several cognitive psychologists (notably, Gentner 1983), only a full consideration of the many existing structural analyses of poetic metaphors already carried out by literary theorists (see, e.g., Hrushovski 1984) can provide psychologists with the latent richness and complexity of the structure of metaphor. Moreover, only a full consideration of the relationship between the structural complexity and richness of expres-

sive metaphors and the communicative situation in which poetic metaphors are being used, as described by literary theory, can provide us with a more adequate account of such a phenomenon. Gerard Steen's paper addresses this relationship in some detail within the framework of the "empirical study of literature," relating it to the unique characteristics of the poetic communicative situation, while Ziva Ben-Porat's paper provides a detailed description of a specific corpus—Homeric simile—which demonstrates the various structural complexities that can be achieved by poetic analogies.

The present collection of papers, then, reflects an attempt to bring together two disciplines, literary theory and cognitive psychology, as well as other studies related to the "cognitive" paradigm. It seems to me that, besides reflecting the state of the art in the study of metaphor, this collection convincingly demonstrates, for the benefit of those not yet fully convinced, that the collocation of studies conducted by literary theorists and cognitive psychologists is likely to be highly beneficial to both disciplines and to the general study of human metaphorical competence, which is by nature multifaceted and ubiquitous.

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