

Metaphor Alignment in Complex Concepts

Joost Zwarts¹

¹ Utrecht University, Trans 10, 3512 JK Utrecht, The Netherlands
j.zwarts@uu.nl

Abstract. This paper shows how the metaphorical structure of complex concepts (involving attributive modification and compounding) systematically aligns with their function-argument structure.

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1 Introduction

Concepts can be complex. The examples in (1) involve modification and those in (2) compounding.

mental exercise, budgetary ceiling, bitter thought, sketchy concept (1)

body clock, investment climate, snail mail, shadow cabinet (2)

They are also complex because they involve metaphorical mappings [1]. The underlined part is metaphorical, coming from the source domain of the mapping; the other part is literal, from the target domain. The question is whether and how these metaphorical parts (source and target) are aligned [2] with the grammatical parts. Such metaphor alignment would be an important constraint on the compositional creativity of concepts.

Metaphors are claimed to be systematically aligned to grammar (§2), but the patterns in (1) and (2) are problematic (§3): in some cases it is the head that is metaphorical (*body clock*, *mental exercise*), in other cases it is the non-head (*snail mail*, *bitter thought*). This paper demonstrates that the examples in (1) and (2) fit a general Metaphor Alignment Principle (MAP) based on function-argument structure (§4), given independent assumptions about the semantics of compounding and modification (§5).

2 Metaphor and dependency

[3] argues that in a combination of two elements it is the *dependent* element that is metaphorical and not the *autonomous* element. In cognitive grammar [4] the dependent element has a “salient substructure” that the autonomous element “elaborates”. In example (3) *job* is autonomous and non-metaphorical and *jail* is dependent and metaphorical:

My job is a jail (3)

[2] and [5] show how this works out for different constructions (Table 1).

Table 1. Metaphorical dependents.

Construction	Example
Subject- <u>predicate</u>	your morals <u>reek</u> , my job is a <u>jail</u> , she has been <u>on a roller-coaster</u>
<u>Predicate-object</u>	<u>build</u> power, <u>into</u> a depression, <u>allergic</u> to the suggestion
Possessor- <u>noun</u>	her mind's <u>eye</u>
<u>Noun-of-NP</u>	<u>foundation</u> of an argument

3 The problem with modification and compounding

With modifiers there seem to be two different patterns, depending on the type of adjective, as illustrated in (2). ‘Ordinary’ adjectives, like *bitter* and *sketchy*, behave as dependent elements, but what [2] and [5] call ‘domain’ adjectives, like *budgetary* and *mental*, behave as autonomous elements. Why would it be that way?

Compounds are also problematic. [2] and [5] only discuss examples where the head is metaphorical (*heroin tsar*, *rumor mill*, *market draught*, *bank health*), but literature about metaphor in compounding [6,7] also mentions the opposite pattern: *anchor man*, *ghost writer*, *key word*, *stiletto heel*. What explains the difference between these two types? (We ignore a third pattern in which the whole compound is metaphorical, as in *garden path* or *bear hug*.)

4 Metaphor Alignment Principle (MAP)

The informal cognitive linguistics distinction between autonomous and dependent can be understood more formally in terms of function-argument structure, allowing the MAP to be succinctly stated as in (4) with the metaphorical part underlined.

$$\underline{\text{FUNCTION}}(\text{ARGUMENT}) \quad (4)$$

Table 2 shows how the examples from Table 1 all fit the metaphor-function alignment.

Table 2. Metaphor-function alignment.

Construction	Example
Subject- <u>predicate</u>	<u>REEK</u> (YOUR-MORALS), <u>JAIL</u> (MY-JOB), <u>ON-A-ROLLER-COASTER</u> (SHE)
<u>Predicate-object</u>	<u>BUILD</u> (POWER), <u>INTO</u> (DEPRESSION), <u>ALLERGIC-TO</u> (THE-SUGGESTION)
Possessor- <u>noun</u>	<u>EYE</u> (HER-MIND)
<u>Noun-of-NP</u>	<u>FOUNDATION</u> (ARGUMENT)

5 Modification and compounding

The adjective in *bitter thought* is a function and it naturally aligns with the metaphorical mapping: BITTER(THOUGHT). However, the denominal adjectives in *mental exercise* and *budgetary ceiling* are conceptually arguments of their nouns [8], as shown by paraphrases like *exercise of the mind* and *ceiling of the budget*, and that explains why the nouns are the metaphorical functions: EXERCISE(MIND), CEILING(BUDGET).

Compositionally, there are also two types of compounds [9]. In attributive compounds, like *girlfriend*, N₁ modifies N₂ and therefore N₁ is the function: GIRL(FRIEND). In subordinate compounds, like *love story*, N₁ complements N₂ and therefore N₂ is the function: STORY(LOVE). Attributive compounds allow N₁ to be metaphorical, as in *snail mail*: SNAIL(MAIL) and other N₁+N₂ compounds that refer to ‘N₂ that is (like) N₁’. Subordinate compounds allow N₂ to be metaphorical, as in *body clock*: CLOCK(BODY). (In an apparent counterexample like *hen party* the metaphoricity of *hen* is independent of its combination with *party*.)

By zooming in on the metaphorical structure of compounds and modifications we gain insight in the way the creativity of complex concepts is systematically constrained by the function-argument structure that underlies the combinatorics of language and thought.

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