Thorben Petersen*

# Degrees of Compositionality (In the Realm of Idioms)

https://doi.org/10.1515/krt-2024-0036
Received August 8, 2024; accepted March 10, 2025; published online March 25, 2025

**Abstract:** This paper outlines and motivates a degrees view of compositionality. The degrees view says that the meanings of complex natural language expressions are determined by the meanings and syntactic structure of their parts to varying degrees. The initial motivation for proposing such a view is that it solves a serious problem with the compositionality principle, which arises if the meanings of complex expressions are taken to be fully determined by the meanings and combinatorial structure of their parts. This seems to be the standard understanding of compositionality, but natural languages are ripe with expressions, whose meanings are compositionally underdetermined. This striking feature of natural languages is captured by the degrees view, which attributes an undiminished role to compositionality and proposes that complex expressions are generally compositional, albeit with varying intensity. In order to provide further motivation for the degree-theoretic perspective, this paper also examines the meta-semantics of idiomatic phrases, which are widely held to defy compositionality by definition. As predicted by the degrees view, the analysis reveals that there are different types of idiomatic phrases, some of which are more compositional than others.

**Keywords:** compositionality; degrees of composition; idioms; meta-semantics; meta-semantic pluralism; figurative language

## 1 Introduction

The vast majority of linguists and philosophers of language subscribe to the principle of compositionality,[1] holding that the meaning of a complex expression is determined by the meaning of its parts and the particular way, in which the parts are combined syntactically. At the same time, there is widespread agreement among the

1 For a clear statement of the wide endorsement of the principle in linguistics and philosophy of language, see Szabó 2000, p. 261.

***Corresponding author: Dr. Thorben Petersen**, Philosophy of the Cultural World, RWTH Aachen University, Kármánstraße 17-19, 52062 Aachen, Germany, E-mail: thorben.petersen@rwth-aachen.de

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linguistic and philosophical community that the compositionality principle has a rather limited validity in application to natural languages,[2] and much discussion over (apparent) counterexamples, whose meanings fail to be determined by the meanings and combinatorial structure of their parts.

The situation is thus precarious. On the one hand, there is no basis for abandoning the compositionality principle, not least because countless natural language expressions have their meanings determined compositionally to almost perfect degree. A case in point is provided by complex sentential structures like [Dogs bark and snow is white],[3] whose meanings lucidly follow from the meanings of their sentential constituents and the coordinators combining them. On the other hand, the (apparent) counterexamples cannot be swept under the proverbial carpet. For there are far too many cases, in which the syntactically driven determination of meaning does not work so perfectly well. A case in point is provided by idiomatic phrases like [swallow your pride], whose meanings certainly don't float free from their constituent's meanings, but are not even nearly fully determined by these.

In order to resolve this (seemingly) dilemmatic situation, one does well to clarify what the compositionality principle says and to consider, moreover, *to what extent* the principle applies. Radical solutions like the ones just indicated are probably only on the table because the principle is not formulated clearly enough. Complaints about unclear formulations of the compositionality principle have, at any rate, been voiced for some while.[4] To shed light on the situation, I suggest that compositionality be understood as a meta-semantical mechanism, which helps explaining why complex expressions mean what they do. My proposal is decidedly twofold: for one thing, I suggest to conceive of compositionality from a foundational perspective, along with other meta-semantic factors like speaker intentions and the conventions of language communities. For another thing, I suggest that the syntactically driven foundation of meaning is a matter of varying degrees.

The goal of this paper is to introduce the degrees view of compositionality and provide reasons in its favor. The initial motivation for introducing a degree-theoretic alternative is that the standard interpretation faces the resistance problem just indicated. Standardly, the meanings of complex expressions are taken to be fully determined by the meanings and combinatorial structure of their parts. But if the syntactically determination of complex meanings is taken to be a watertight affair, then what is one to make of expressions like [guinea pig] and [swallow your pride], whose meanings do not obviously follow from the meanings and combinatorial

**2** For a clear statement of the wide agreement about the limited role of compositionality in natural languages, see Zadeh 1983, p. 254.

**3** In this paper, I use square brackets to highlight linguistic types.

**4** See, for instance, Janssen 1997, p. 426. Cp. Szabó 2000, p. 261.

structure of their constituent parts? In addition, there is also direct motivation for the degrees view. When examining different fragments of language in detail, one simply *finds* that some expressions are more compositional than others. In this paper, this is demonstrated for the thorny case of idioms, which are widely regarded as resisting composition by definition.

Overall, the paper consists of 12 sections, some of which are divided further into subsections. Section 2 and Section 3 are concerned with the difference between semantics and meta-semantics and introducing the distinction between monolithic and pluralistic meta-semantic frameworks. Highlighting pluralistic meta-semantic frameworks is required for clarifying what it means to say that compositionality *helps* explaining why complex expressions mean what they do.

Subsequently, Section 4 distinguishes between different interpretations of the compositionality principle, including the standard interpretation and the degree-theoretic alternative. Section 5 provides an overview of motivations for the degrees view. One motivation, as noted, is that the degrees view provides a straightforward solution to the (seemingly) dilemmatic situation with compositionality. This is clarified in Section 6, which outlines the problematic situation in more detail and critically examines a number of different solutions to the problem, including radical approaches like rejecting the compositionality principle and ignoring recalcitrant cases.

Section 7 then turns to providing direct evidence in favor of the degrees view, and to examining compositionality in the realm of idioms, the most general features of which are summarized in Section 8. In Section 9, I argue that some idioms are more compositional than others. In particular, I provide a fourfold distinction of different types of idiomatic phrases, which can be ranked along a compositionality-scale. Section 10 contains an examination of extant theories of idioms, including the long word view, the standard lexical view, the (pure) chunks view and pragmatic accounts like the implicature and the pretense view.

I conclude by carrying the differentiation of idioms further in Section 11, and by outlining further work for the degrees view of compositionality in Section 12.

## 2 Semantics, Meta-Semantics and Compositionality

In order to explain what the degrees view of compositionality amounts to, it is helpful to distinguish between two different sorts of meaning-theory. Nowadays, it is customary among philosophers of language to distinguish between semantics, alias descriptive semantics, and meta-semantics, alias foundational semantics. The goal of

semantics is to clarify what particular linguistic expressions mean. The goal of meta-semantics, by contrast, is to clarify why a particular linguistic expression has the meaning that it does have. Alternatively, we could say that the semanticist's job is to specify the semantic values of linguistic expressions, whereas the meta-semanticist's business is to explain how expressions come to their specific values.[5]

It goes without saying that compositionality is of no great use in explaining why atomic expressions mean what they do.[6] But things are manifestly different with complex expressions. In the case of mereologically complex expressions, compositionality at least helps explaining why they have the meaning that they have. The foundation is provided, as Szabó 2019 puts it, by tracing down their syntactic tree,[7] i.e. by exploiting the meanings of the parts of complex expressions and the particular way these parts are syntactically combined. Thus conceived, the compositionality principle helps, for instance, explaining why the complex [Hunde bellen] means what it does, namely that *DOGS BARK*.[8] More specifically, the compositionality principle explains that [Hunde bellen] means *DOG BARK*, precisely because [Hunde] means *DOGS*, and [bellen] means *BARK*, and because these (comparably) simple expressions are merged together as subject and predicate.

## 3 Monolithic and Pluralistic Meta-Semantics

To say that compositionality helps explaining why complex expressions have the meanings they have, is not the same as saying that the principle is the only foundational source, nor that the principle provides the full explanation in a given case. Quite the contrary: on the picture that I am proposing, the syntactically driven foundation of meaning through the merging of comparably simpler expressions typically works together with other foundational mechanisms, which provide their own contribution to the full explanation. Other candidate foundational sources besides compositionality include the linguistic conventions of a language community, especially when it comes to accounting for stable meanings of linguistic types.[9] It would seem, for instance, that the meta-semantics of [Hunde bellen] remains

**5** For further discussion concerning semantics, meta-semantics and the relation between these, see Burgess and Sherman 2014; Jaszczolt 2021; Speaks 2024.

**6** In order to account for the meanings of mereologically simple expressions, meta-semanticists are bound to invoke other meta-semantic mechanisms, which we are going to introduce shortly in Section 3.

**7** See Szabó 2019, p. 244.

**8** In this paper, I use cursive versal font to represent meanings.

**9** Instead of conventions, meta-semanticists could also invoke the norms of a given language community.

incomplete, until it incorporates the German language community, as well as the linguistic conventions applying to the semantic atoms of their language.[10] Further promising candidate factors include other linguistic mechanisms like figurative transfer, but also the magnetic potential of possible referents. When it comes to the meta-semantics of concrete tokens, finally, candidates furthermore include contextual factors like speaker intentions and parameters like time, location, addressee and potential referents that are salient during the production of a concrete linguistic token.

In order to emphasize that the compositional mechanism provides partial foundations of the meanings of complex expressions, it is useful to distinguish monolithic from pluralistic meta-semantic frameworks. Why is it that a certain expression has the meaning that it has? The point is that monolithic and pluralistic frameworks answer this question in different ways. Whereas monolithic frameworks provide meta-semantic explanations in terms of single sources only, pluralistic frameworks offer complex explanations involving whole arrays of different factors. Within pluralistic frameworks, a particular meta-semantic source could never be the only foundational source, even if it should be an indispensable one. Although these would seem to offer more realistic accounts of how semantic facts come about, pluralistic frameworks are somewhat underrepresented in the literature on meta-semantics.[11] With the distinction drawn, in any case, we are naturally led to distinguish between different interpretations of the compositionality principle, including the standard account, which sees the syntactically driven foundation of meaning as offering stand-alone meta-semantic explanations, and the degree-theoretic alternative, which sees compositionality as operating in tandem with other meta-semantic sources. This is clarified further in the following section.

## 4 Two Interpretations of the Compositionality Principle

What, exactly, does the compositionality principle say? To begin with, it is worth mentioning the availability of unqualified formulations of the principle, which Theo Janssen 1997 and others deem too vague to be of any interest.[12] These formulations simply say, in one way or another, that the meaning of a complex expression is determined by the meaning and combinatorial structure of its parts – without

**10** In order to account for the meanings of mereologically simple expressions, meta-semanticists can plausibly turn to the principle of reverse-compositionality.

**11** But see Nowak and Michaelson 2021 on fixing the semantic values of demonstratives (like [that]).

**12** Janssen 1997, p. 426.

specifying further what this possibly amounts to. Such unqualified formulations of the principle are not to be confused, however, with qualified interpretations thereof. Qualified interpretations of the compositionality principle include the standard understanding and the degree-theoretic interpretation to be distinguished in what follows.

The standard understanding that permeates the literature on compositionality seems to be that the meaning of any complex linguistic expression is fully, rather than partially determined by the meaning of its part in a given syntactic configuration. This understanding seems implicit, to give but one example here, in the formulation offered by Gregory Currie 1982:

> The sense/reference of a complex expression is a function of the senses/references of its parts. Given the sense and the reference of each component expression, it *is determined thereby* what is the sense and the reference of the whole. (Currie 1982, S.89, emphasis mine.

It is fair to emphasize that Currie does not explicitly interpret compositional determination as full determination; but then he nowhere indicates that the determination relation could be partial, and it is actually hard to interpret this passage as advancing a graded interpretation of the principle. An even clearer example is provided by the widespread functionalist interpretation, on which compositionality is conceived as a homomorphism. This interpretation derives from the work of Richard Montague 1970a, and is typically endorsed by proponents of Montague grammar, in which linguistics is treated as a branch of mathematics.[13] The basic idea behind the mathematical interpretation is to posit a structure-preserving mapping between two layers of meaning: the meanings of (comparably) simple expressions and the meanings of complex expressions. In this framework, the meaning of a complex expressions is understood as a partial function from the meanings of its components, through an *n*-ary syntactic operation, which guarantees that the complex form is assigned a unique meaning. As detailed by David Dowty 2006:

> For each *n*-place syntactic operation $F_\gamma$, there is a unique *n*-place semantic operation $G_\gamma$, that is, $G_\gamma$ is to interpret semantically what $F_\gamma$ forms syntactically. A semantic interpretation for a language is then defined as some homomorphism from $<A, F_\gamma>_{\gamma\in\Gamma}$ to $<B, G_\gamma>_{\gamma\in\Gamma}$; that is, the semantic interpretation of a language is viewed as a function *h* construed as follows: for each *n*-place syntactic operation $F_\iota$ and its uniquely corresponding *n*-place compositional semantic operation $G_\iota$ (its function of the meaning of the parts), $h(F_\iota(\alpha_1,\ldots,\alpha_n)) = G_\iota(h(\alpha),\ldots,h(\beta_n))$. (Dowty 2006, p. 11).

**13** Cp. Thomason 1974, p. 2. It sometimes suggested that Montague grammar is only applied to formal languages, which is incorrect. Montague 1970b himself, for instance, conceives of English as a formal language.

The point of the standard understanding is that the meanings of complex expressions are simply functions of the meanings of their parts, the way they are combined, and nothing more.[14] Accordingly, the standard understanding is framed within a monolithic meta-semantics, which conceives of compositionality as a stand-alone factor in the foundation of meaning.

The standard interpretation of the compositionality principle must be distinguished from more nuanced understandings of the principle. According to the degrees view of compositionality, in particular, the compositional mechanism neither just determines, nor fully determines the meaning of a complex expression, but, basically, helps determining its meaning, such that the meaning of the complex expression is, at the very least, not independent from the meaning and combinatorial structure of its parts. This makes good sense within a pluralistic meta-semantics, on which the compositional mechanism is typically conjoined and, hence, effectively weakened by other meta-semantic factors. According to the degrees view, the syntactically driven foundation of meaning is, in general, not the only factor when it comes to explaining how complex expressions come to their meanings, but nevertheless an indispensable one.

## 5 Motivating Degrees of Compositionality

The remainder of this paper is devoted to motivating the degrees view of compositionality. More exactly, I suggest to reject the standard understanding of the principle in favor of the degree-theoretic alternative. In the following, I offer two reasons for subscribing to the degrees view. For one thing, there is loads of direct evidence for compositionality being a matter of degrees. When considering different features, or fragments of natural languages like English, one simply finds that the composition of meaning occurs in varying degrees. In this paper, this is demonstrated for the case of idioms. That composition is a matter of degrees may be more obvious with respect to other fragments of natural languages (such as the meanings of nominal compounds), but idioms would seem more significant. That is because idioms are widely held to resist composition by definition. For another thing, there is also indirect motivation for the degrees view. This becomes obvious by considering different evaluations of the (apparent) dilemma with compositionality. What provides indirect motivation for the degrees view, more exactly, is that other evaluations of the dilemmatic situation are less plausible than acknowledging varying degrees of composition.

**14** Cp. Szabó 2012, p. 64.

Before applying the degrees view to the thorny case of idioms, I first want to become more clear about the problematic situation, outline different reactions to the problem and show that these are less than fully satisfying.

# 6 A (Seemingly) Dilemmatic Situation at the Heart of Semantics and Some Potential Solutions

There are countless expressions or even whole fragments of natural languages that enjoy mereological complexity, but have meanings that are not even remotely fully determined by the meanings and combinatorial structure of their parts. This creates a dramatic tension with the standard understanding of the compositionality principle, which holds that the meanings of complex expressions are just that: fully determined by the meanings and combinatorial structure of their parts. Idioms provide the best-known counterexample, but there are further recalcitrant cases, as I will detail in a moment.

## 6.1 Radical Approaches

The tension can be dealt with in different ways. In the following subsection, I turn to sophisticated proposals, including the degree-theoretic perspective. In principle, though, one can also seek solutions in radical approaches, more specifically in rejecting the compositionality principle or ignoring the counterexamples. In this section, I show what's wrong with such radical solutions.

### 6.1.1 Abandoning the Syntactically Driven Foundation of Meaning

In order to do justice to the counterexamples, one might be led to abandoning the principle of compositionality. This path has indeed been taken. The path has been taken, for example, by Jerry Fodor 2001, who argues that language just cannot be compositional. However, since Fodor's criticism of linguistic compositionality relies on questions of priority between language and thought, it is not examined further here. More to the point is the criticism of Ran Lahav 1989, who senses an insurmountable conflict for compositionality with adjective-noun expressions. Lahav's worry is that adjectives like [red] are ambiguous in compounds like [red wine], [red apple] and [red watermelon], respectively, whence they cannot provide the same meaning to such compounds. And so Lahav concludes that the meanings of such compounds fail to be determined by the meanings and combinatorial structure of

their parts. Actually, Lahav even goes as far as casting doubt upon the reasons that motivate compositionality in the first place.[15]

I won't provide an in-depth analysis of Lahav's line of argumentation here,[16] but instead point out that his conclusions go way too far. One no-go about abandoning the principle is that natural languages are ripe with complex expressions that have their meanings determined compositionally almost perfectly. Showcase examples include productive morphology (think of regular verbs), certain noun-noun compounds (like [music festival]), as well as regular phrases (e.g., [in 1967]) and sentences (like [Snow is white]). In some cases, the explanation goes so incredibly well that the principle is dismissed as downright trivial.[17] And the success story extends further to higher syntactic levels, at which different sentences are combined into complex sentential structures via logical operations like [and], as in [Dogs bark and snow is white].[18] Whatever reason to the contrary, then, abandoning the compositionality principle is just no option, precisely because the compositionality principle works.[19]

Why exchange a running system? But it's not just that compositionality works. A related, but probably more general barrier against dropping the principle is that compositionality helps accounting for the fact that humans have cultivated a creative use with language. The creative use of language basically consists in our ability to produce and understand expressions that have the property of being novel.[20] To which we should add that compositionality ensures a considerable economy in the lexica of natural languages. Although lexica should be complete, they must contain no unnecessary entries either, at least not if these can be accommodated through other means. Languages being compositional allows to fill the lexicon with (comparably) simple lexemes only, which is because the meaning of complex entries can be comfortably derived, compositionally, from simple lexemes and syntactical rules. This has long been noted by Katz and Fodor 1963, when writing:

> An approach which directs us to choose as lexical units the most compositionally basic units of the language has […] simplicity in its favor. Wherever we can use composition, dictionary entries are avoided (Katz and Fodor 1963, p. 192).

**15** Lahav 1989, p. 263.

**16** One natural way to block Lahav's critical conclusion (of which he is aware), is to posit ambiguities.

**17** Cp. Horwich 1997 on [dogs bark].

**18** This, of course, is precisely the type of composition highlighted by the likes of Ludwig Wittgenstein 1922. See especially propositions 4.28, 4.3 and 4.31.

**19** Cp. Szabó 2020, Section 3.3.

**20** In theories like that of Chomsky 1965, the creative aspect of language is traced back directly to the language module, which is conceived as purely syntactical device. But it is actually hard to believe that humans can successfully generate and understand novel sentences, unless their linguistic creativity involves a mapping from simpler to more complex meanings.

Abandoning the compositionality principle is no option, then, because it occupies a central place in theoretical linguistics. This is demonstrated not least insofar the principle can be taken to underwrite other important linguistic principles, such as the systematicity of language and various principles of substitution. Since we have every reason to hold that language is systematic and regimented by various principles of substitution, we have every reason to conceive of natural language as compositional.

### 6.1.2 Downgrading Compositionality to Substitutivity

While we are at it, it is worth taking the time to stress that it won't help downgrading the compositionality principle to some other semantic principle. Some might suggest, more exactly, that, instead of rejecting the principle entirely, compositionality could be downgraded to some principle of substitution; but this is just no option. Roughly, substitutivity demands that the substitution of synonyms is meaning-preserving: if some part of a complex expression is replaced by a synonymous form, that will leave the meaning of the complex expression untouched.[21] But insofar substitution presupposes compositionality, the latter could hardly be identified with the former. Intuitively, at any rate, it would seem that the preservation of meaning only make sense, if compositionality is already in play. And as long as this suspicion cannot be dispelled with, the two principles cannot be identified in good conscience. Another worry is that the principle of substitution is problematic in a way that the principle of compositionality is not. For it is questionable, whether truly synonymous forms indeed exist.[22]

### 6.1.3 Ignoring Recalcitrant Cases

Rejecting (or downgrading) the compositionality is no option, but one can also go into the opposite extreme. In order to secure something close to unrestricted applicability of the compositionality principle, one might be tempted to ignore recalcitrant counterexamples. In this vein, Johnson-Laird 1993, p. viii, writes that the "logical approach to language relegates idioms to the sidelines." And Wallace Chafe 1968 points out that this is pretty much the way, in which idiomatic phrases are treated,

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**21** Idioms can provide contexts, in which the substitution of synonyms breaks down. At any rate, this is so with lexically frozen idioms like [kick the bucket], whose constituents arguably cannot be exchanged by synonymous forms without destroying their idiomatic meaning. I will turn to idioms in more detail in later sections, but leave their lexical frozenness to be discussed for some other time.
**22** This is pointed out, for instance, by Szabó 2019, p. 245.

qua Kuhnian anomalies, under the paradigm of transformative grammar. Chafe is also quite clear, why sweeping idioms under the table is no serious option.

> The importance of idioms cannot be doubted. Their *ubiquity* makes them anything but a marginal phenomenon and surely a linguistic theory has an obligation to explain them in a natural way. (Chafe 1968, p. 111, emphasis mine).

To which it should be added that it's not just idioms that are problematic and ubiquitous. Resistance to the standard interpretation of compositionality not only shows up with idiomatic phrases, but has likewise been reported with semi-productive morphology (think, e.g., of irregular verbs),[23] specific compounds (like the infamous [goldilocks economy][24]),[25] quantified phrases,[26] that-clauses for expressing propositional attitudes,[27] quotation,[28] alive and waking metaphors as well as other kinds of figurative language,[29] proverbs,[30] constructions (in the sense of construction grammar),[31] and probably more. Since all of these pervade natural language as well, one could only ignore the problem by literally burying one's head in the sand.

Instead of sweeping idioms and other recalcitrant cases under the proverbial carpet, one might alternately draw a sharp distinction between semantics on the one hand, and pragmatics on the other hand. With some such dichotomy in play, the existence of idioms and the like could be happily acknowledged, but the problematic cases be relegated to the periphery of language and thus declared irrelevant. Although this move might secure that the foundation of complex meanings is entirely in the business of compositionality, the result remains unsatisfying. One point to consider is that natural language speakers are deeply engaged with making pragmatic clues, which means that the applicability of the compositionality principle would be impoverished dramatically. Another point to consider is that some of the counterexamples cannot be reasonably classified as pragmatic. This is so, for instance, with semi-productive morphology and quantification. And so the pragmatic move comes at much too high a price, which is not worth paying. Actually, it would be more desirable to extend the compositionality principle to include pragmatics, which we'll attempt in Section 10.4.

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**23** See Jackendoff 2002, Section 6.2.2.

**24** See Dunbar 2005.

**25** See Downing 1977 and the problem that Lahav 1989 voices concerning adjective-noun compounds.

**26** See Hintikka 1980; Higginbotham 1986.

**27** See Cheng 2016.

**28** See Maier 2014.

**29** As argued by Kotzé's Davidson (in Kotzé 2001).

**30** See Grzybek 2014 on holistic versus componential analyses of proverbs.

**31** For discussion, see Culicover et al. 2017.

## 6.2 Sophisticated Solutions

The unacceptable consequences of radical solutions to the resistance problem indicate that more sophisticated approaches are required to solve the problem. In what follows, I briefly review the elaborate approaches of Ray Jackendoff and James Pustejovsky, before turning to the degrees view of compositionality.

### 6.2.1 Pluralism à la Jackendoff

One rather sophisticated idea is to adopt a pluralist framework, in which the principle of compositionality principle figures as a separate principle. An interesting approach along these pluralistic lines is found in the work of Ray Jackendoff 2002, who draws a basic distinction between meanings of complex expressions than can and cannot be generated online, respectively. Roughly, Jackendoff holds that the meaning of a complex expression is generated online (in some particular context), if it is generated from the meanings and combinatorial structure of its components, each of which is stored in what is basically a mental lexicon. Meanings of complex expressions that cannot be generated online, by contrast, must be stored independently therein. Jackendoff's paradigm cases of such expressions are idioms (like [kick the bucket]) and constructional idioms (like the way-construction),[32] which we are going to examine in more detail in Sections 7–11. But although the resulting picture is impressive, there's the worry that, in Jackendoff's multi-dimensional framework, compositionality is conceived as a separate principle, which is shielded off from other linguistic principles that are manifestly non-compositional. Although (constructional) idioms à la Jackendoff may involve syntactic composition, their meaning is attached directly to the whole idiomatic expression, and so does not result from the meaning and combinatorial structure of any constituents. In a way, then, Jackendoff's proposal can still be regarded as restricting the validity of the compositionality principle.[33]

### 6.2.2 Weakening à la Pustejovsky

Another sophisticated idea is to propose a weakened variant of the compositionality principle, according to which the meanings and combinatorial structure of constituents only have a minor influence on the meanings of the complex expressions, in which they figure.

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**32** Cp. Jackendoff 2002, Sections 6.5-6.7. Also cp. Jackendoff 1997.

**33** Similar worries can be addressed to what are known as the long word view and the lexical view of idioms, respectively, to which we will turn in Sections 10.1 and 10.2.

One rather straightforward way, in which compositionality could be weakened, is by denying what we have presupposed so far, namely that semantic atoms, or comparatively simple expressions have meanings that are stable, and invariant across different linguistic environments and contexts of utterance. Instead, one might suggest that (comparably) simple expressions merely have something like meaning potentials, which they activate in different linguistic environments, or contexts of utterance. The overall meaning of the more complex expressions, in which they figure, could then be taken as the product of an interplay of different underspecified expressions. Some such strategy is developed by James Pustejovsky 1995 and his work on the generative lexicon. Unfortunately, Pustejovsky's conception confronts the very same problem as does the radical solution of rejecting compositionality, which is that there are ever so many cases, in which compositionality works. The problem, more specifically, is that there are numerous cases, in which the meanings and combinatorial structure of constituents actually do more than slightly affecting the meanings of the complexes, in which they figure. And so, one might worry that Pustejovsky's strategy puts at risk the explanatory power and economical gain of compositionality. At the same time, one could hardly deny that the strategy of weakening is on the right track, and at least provides a partial solution to the intricate resistance problem. This becomes obvious when discussing my preferred solution to the resistance problem, which is to conceive of compositionality as a graded mechanism.

### 6.2.3 Compositionality as a Graded Mechanism

If compositionality works, but fails to apply throughout, then it is natural to consider whether that partial failure is traceable to a misconception of the principle and the result of exaggerated demands. According to the degrees view, the syntactically driven foundation of meaning neither just determines, nor fully determines the meanings of complex expressions, but, basically, helps determining their meanings, such that, at the very least, the meaning of a given complex expression is not independent from the meaning and syntactic structure of its parts. A different way of putting the point is that there exist different levels of the syntactically driven foundation of meaning, or that composition occurs in varying degrees.[34] Just like the standard understanding, the degrees view can accommodate complex expressions (of a given natural language) that have their meanings determined compositionally one hundred percent. At the same time, though, the degrees view accommodates cases, whose meanings are compositionally underdetermined, i.e. complex

**34** Maybe one can even go as far as postulating varying magnitudes of compositionality, although this particular supposition will not be pursued further in this paper.

expressions (of a given natural language), which are determined compositionally to less than hundred percent. Unlike Jackendoff's parallel architecture, then, the degrees view provides a unitary framework, which assigns an undiminished, albeit graded role to the compositional mechanism. Thus fleshed out, compositionality applies to all complex expressions, although some of these turn out to be more compositional than others.

## 7 Direct Evidence for Graded Compositionality

Why accept that compositionality is a matter of degrees? The view is hardly, if ever explicitly mentioned in the literature; so why subscribe to varying degrees of composition? For one thing, as elucidated shortly, there is indirect motivation for the view. The failure of different evaluations of the resistance problem obviously points to the fact that composition comes in varying degrees. However, the decisive point is that there is ample direct evidence for the degrees view. The thing is that, when considering different linguistic phenomena or different fragments of natural languages like English, one simply finds that composition is a matter of varying intensity. Take, for instance, the meanings of nominal compounds. There is ample evidence that some nominal compounds are more compositional than other nominal compounds. In particular, there is ample evidence from experimental psychological studies that certain nominal compounds are judged to be more compositional than others.[35] Such experimental-psychological results about nominal compounds are highly significant for the meta-semantics of idiomatic phrases.

Of even greater relevance, though, should be related findings about idioms. The reason why idioms are of special importance in the context at hand is that they are widely conceived as non-compositional fragments of language. Thus, idioms are treated as entirely non-compositional in the classic treatments of generative theorists like Bruce Fraser 1970 and Noam Chomsky 1980, but also by psycholinguistic authors like Bobrow and Bell 1973; Swinney and Cutler 1979. Following van der Linden 1992, I will dub this the traditional view of idioms:

> The traditional view of an idiom states that its meaning is not a function of the meanings of its parts and the way these are syntactically combined; that is, an idiom is a non-compositional expression. (van der Linden 1992, p. 223).

**35** Here is a small selection of nominal compounds that experimental linguistics Reddy et al. 2011 rank in terms of a human-rated compositionality score, ranging from 0.00 to 5.00: [double Dutch] (score: 0.29), [guinea pig] (0.45), [disk jockey] (1.25), [cotton candy] (1.79), [dirty money] (2.21), [tennis elbow] (2.50), [half-sister] (2.84), [injury time] (3.20), [traffic jam] (3.62), [critical review] (4.06), [music festival] (4.58), [insurance company] (5.00).

If it turns out, then, that even idioms are compositional to varying degrees, there is excellent reason for holding that natural language is generally compositional to varying degrees. Further work will be necessary to substantiate this provoking thesis, but the variable compositionality of idioms would be a first reason for taking it seriously. Before turning to the compositional nature of idioms, though, we need to become more clear what idioms are.

## 8 Idiomatic Phrases

What are idioms? So as not to follow any prejudices at this point, and not to stifle any chance of debate, I will shortly identify idiomatic expressions on the basis of stereotypes.[36]

However, even though my discussion of the compositional nature of idioms relies on citing paradigm cases, I do not believe that anything goes in compiling idiomatic expressions. In order to prevent downright randomness in identifying idioms, I first lay down a number of requirements on idioms.

One criterion that could be employed in identifying idioms is their alleged frozenness, by which I mean the widespread prejudice that idioms cannot undergo standard syntactical deformations like passivation, at least not without destroying their idiomatic interpretation. However, since idioms vary significantly as regards their syntactical inflexibility, I prefer to regard their variable frozenness not so much as a criterion in identifying idioms, but, rather, as an indication of the graded nature of their compositional structure (of which more in Sections 9 and 11). Mutatis mutandis for the alleged lexical inflexibility idioms (which is not discussed further in this paper, though).

A criterion that I won't question in what follows, by contrast, is that idioms are multiword-expressions with phrasal status in the grammar of a given language. The reasoning behind this is that idioms should be distinguished from polymorphic words (like [telephone]),[37] nominal compounds (e.g., [red wine]), as well as proverbs (such as [There is no time like the present]) and other phraseologisms. The degrees view predicts that these fragments of language are varyingly compositional as well, but whether this is actually so, must be examined in future work.

An absolute sine qua none on idioms, alias idiomatic phrases, is that they have a use in a given language. The requirement, in other words, is that idiomatic phrases

**36** A similar route is followed by Andy Egan 2008, p. 381, who, too, picks out idioms on the basis of paradigmatic examples, instead of defining the class of idioms as meeting some particular criterion.
**37** The same distinction is drawn by Weinreich 1969.

are conventionalized phrases. Following current trends in meta-semantics, I conceive of conventions as a distinctive source of meaning.[38] If conventions à la David Lewis 1975 qualify as a source of meaning, then meta-semantic facts can be given in terms of specific linguistic conventions. To illustrate, consider the expression [spill the beans], whose idiomatic meaning in the English language is *REVEAL THE SECRETS*. The meta-semantic conventionalist can explain that [spill the beans] means *REVEAL THE SECRETS*, because there obtains a conventionalized linguistic regularity among the English-speaking community.[39]

Which is not to deny that large swaths of literal talk, too, qualify as conventional in some way. There is a sense, for instance, in which the phrases [being red], [waiting for the bus to come] and [needing help] qualify as conventional in English, and the same goes for [going to New Brunswick], [in 1967] and what have you. Even so, there obtains a crucial difference, which is that the conventions of the English-speaking community virtually play no role in explaining why complex phrases like these have the meaning that they have. Instead, the decisive part of the meta-semantic explanation runs down the syntactic tree.[40] In certain cases, it would actually be quite wrong to hold that a complex expression means what it does because of how it is used by the community. This is so with complex expressions that are only rarely, if ever used by the community in question. And basically the same is true of novel expressions, i.e. for complex expressions that are tokened for the first time. This, after all, is exactly the point of the compositionality principle: that it explains how human beings can produce (and understand) novel phrases and sentences.

Another point worth recalling is that linguistic conventions are only part of the full meta-semantic explanation. Idiomatic phrases would not carry their idiomatic meanings, if they would not be used by a given linguistic community; that is for sure. But on the pluralistic approach followed here, meta-semantic factors rarely come alone. As regards the meanings of complex expressions, in particular, the explanatory story also turns on the mechanics of syntactic composition. This is exactly what

**38** In this vein, Jeff Speaks 2024 classifies meta-semantic conventionalism as the most popular approach to meta-semantic theorizing.

**39** At this point it is worth noting that conventions also make their appearance in the work of authors like Nunberg et al. 1994. Actually, the threesome even refers to David Lewis' work on conventions. Importantly, though, Nunberg, Wasow and Sag do not, or do not obviously conceive of linguistic conventions as a meta-semantic source of meaning.

**40** This, in turn, is not to say that the conventions of a given linguistic community play no role in explaining why the (atomic) parts of complex linguistic structures mean what they do. It would seem rather, that these conventions are of major significance in accounting for the meanings of (comparably) simple phrases like [red], [waiting], [help], [New Brunswick] and [1967]. Consequently, one had better acknowledge that the conventions of the English community have an indirect impact on why complex linguistic structures like the abovementioned mean what they do. Still, the decisive part of the meta-semantic explanation runs down the syntactic tree.

is denied by the traditional view, but the following discussion shows that the traditional approach of analyzing idioms in terms of a total failure of compositionality is a dead-end road. A closer look at stereotypical idioms reveals that their respective meanings can be ranked along a scale of determination, just as predicted by the degrees theory of compositionality. What one finds, more specifically, is that there are different types of idioms, where certain types have their meanings founded compositionally more strongly than others. Basically, I distinguish between four different types of idioms, which are exemplified by the following stereotypes.

| Idiom type | Examples |
|---|---|
| Type-1 | [Pop the question], [lay down the law], [hit the jackpot], [get a life] |
| Type-2 | [By and large], [time and again], [so to speak], [no kidding] |
| Type-3 | [Swallow your pride], [carry the torch for], [pull strings], [spill the beans] |
| Type-4 | [Kick the bucket], [shoot the breeze], [saw logs] |

All tykpes comprise more or less frozen multi-word expressions that have a use in some language or other. But there is yet another important constraint on idiomatic phrases, and this is that they are systematically ambiguous.[41] I take it, more specifically, that idiomatic phrases are ambiguous between idiomatic and literal interpretations, where the latter is fixed by the literal meanings and combinatorial structure of their parts. The literal meanings of idioms need not be well-formed: in some cases, the literal interpretation is fine both, syntactically and semantically speaking, but in other cases, it could at best be regarded as nonsense. Either way, there lurks a meaning gap between the literal meanings of idioms on the one hand, and their idiomatic meanings on the other hand. Some idioms being more compositional than others, it should come as no surprise, moreover, that the meaning gap is larger with some idioms, but smaller with others. One could speculate whether it is these gaps that blind theorists to the fact that idioms are compositional, but the important task is to bridge them. It would seem, moreover, that variations between different types of idioms cannot be explained in terms of a simple trade-off between compositionality and conventionality. "The less compositional a phrase, the more conventional it is" is a well-sounding claim, but the bridging can only succeed by invoking further meta-semantic factors besides compositionality and conventionality, including (moderate) ambiguity and figurative transfer. The following section details just how this works.

**41** This is another important point, on which we agree with Weinreich 1969.

# 9 Graded Compositionality in the Realm of Idioms

I first provide an overview of the four basic types of idioms and then go on to differentiate these in more detail. At the upper end of the compositional scale are systematically ambiguous phrases, whose idiomatic meanings do not deviate all-too-much from their standard literal interpretations. The wording 'not all-too much' is deliberately vague, such as to allow for different gradations. What unites these cases is that the meaning gap can be bridged without invoking overt figurative mechanisms, such as metaphorical and metonymical transfer. Instead, the trick can be done by accepting manageable ambiguity. Actually, there are two types of idioms, whose idiomatic interpretation shows a moderate distance from their standard literal interpretations, namely type-1 and type-2 idioms. In both cases, the bridging involves no figuration, but turns on positing ambiguities instead. The difference is that, in type-1 cases (like [pop the question]), the explanation furthermore draws on syntactic structure, whereas in type-2 cases (like [time and again]) it does not. The reason, why the meaning of type-2 cases cannot be explained in terms of their syntax, is that the latter is idiosyncratic and, hence, not generalizable. Since compositionality demands that the meaning of complex expressions turns on both their meaning and the combinatorial structure of their parts, I conclude that type-1 cases of idioms are more compositional than type-2 cases.

Below type-1 and type-2 cases are systematically ambiguous phrases, whose idiomatic use deviates significantly from their literal interpretations, such that the gap between these cannot be bridged in terms of manageable ambiguity. The term 'significantly' is deliberately vague, such as to allow for different gradations, but, again, there is a common denominator. The common denominator is that the meaning gap is bridged in terms of overtly figurative mechanisms, such as metaphorical transfer. Overtly figurative idioms, too, come in various sub-types. One can reasonably distinguish, in particular, between type-3 and type-4 cases of idioms. Type-3 cases comprise idiomatic phrases (like [spill the beans]), which have the parts of their idiomatic meanings corresponding to the syntactic parts of the relevant expressions, even though the meanings cannot be accounted for without invoking mechanisms of overt figuration. Such idioms are clearly compositional, but they are less compositional than type-1 and type-2 cases, precisely because they involve figurations like metaphorical transfer. Even less compositional, finally, are type-4 cases (like [kick the bucket]), where the meaning gap cannot be bridged without invoking further mechanisms like figuration, but where parts of the idiomatic

meaning fail to line-up with syntactical parts of the phrase in question. To summarize:

| Type of idiom | Example | Idiomatic meaning partially depends on literal meaning | Syntax matters | Figuration involved |
|---|---|---|---|---|
| Type-1 | [Pop the question] | Yes | Yes | No |
| Type-2 | [Time and again] | Yes | No | No |
| Type-3 | [Pull strings] | Yes | Yes | Yes |
| Type-4 | [Kick the bucket] | Yes | No | Yes |

Before differentiating the individual types in more detail, I should like to note that there are further ways of ranking idioms, which differ from our proposal in one way or other. In this context, it is particularly worth mentioning the fourfold system developed by Cacciari and Glucksberg 1991.[42] Also, there's the threefold proposal indicated by Espinal and Mateu 2010. Compared to these, our most controversial choice probably is the placement of type-2 idioms, which usually only appear at the lower end of the compositional scale. I find it questionable, though, whether there is such thing as a single best way of ranking different idiomatic types. My reason for ranking idioms like [time and again] comparably high is that they are not overtly figurative, whereas idioms like [pull strings] and [kick the bucket] are. In all of this, the decisive point should not be lost sight of, which is that idioms can be ranked along a compositional scale at all.

## 9.1 Idioms of Type-1: Founding Idiomatic Meaning Without Figuration

Like all other idioms, type-1 cases have a use in the language, and like all other idioms, they are systematically ambiguous. What distinguishes type-1 idioms from other types of idioms is two things. First, that the mereological structure of their idiomatic meaning lines up with the syntactic structure of the idiomatic expression. And, second, that their idiomatic interpretation does not deviate dramatically from their standard literal interpretation. The first hallmark is what distinguishes type-1 idioms from type-2 idioms, whose syntactic parts fail to map onto different parts of their idiomatic interpretation. This is highlighted in the next section. In this section, the focus is on the moderate distance between the idiomatic interpretation and the standard literal interpretation, which can be bridged without invoking overt

42 A more recent outline of this fourfold system of idioms is found in Section 5 of Glucksberg 2001.

figurative mechanisms like metaphorical transfer. By way of illustration, consider the expression [pop the question], whose idiomatic meaning is widely specified as *SUDDENLY ASK FOR MARRIAGE*.

Why is it that the idiom [pop the question] means *SUDDENLY ASK FOR MARRIAGE*? The answer can be given in terms of the syntactically driven composition of meaning. A phrase like [pop the question] would not count as idiomatic, of course, if it would not have a conventionalized use among a certain language community. However, the substantial part of the meta-semantic explanation turns on the (literal) meanings of its parts and the particular way these parts are combined. This line of thought can principally be cashed out in different ways. One means to secure that type-1 cases have their idiomatic meanings determined compositionally is by situating the relevant words within the same semantic field. In this vein, Raymond Gibbs 1993 proposes that "the more salient some word is within an idiom, the more likely that the word shares the same semantic field as does its referent."[43] On Gibbs's conception, the idea would be to say that [ask] and [pop] are in the same semantic field, and so are [the question] and [marriage question]. The Gibbsian proposal turns, then, on an analysis of semantic fields. Personally, though, I prefer to say that cases like [pop the question] have their idiomatic meanings determined compositionally in terms of the literal meanings of their parts. Thus, in the context at hand, I find it acceptable to say that [pop] means *ASK SUDDENLY*, and that [the question] means *THE QUESTION OF MARRIAGE*. The meanings of these expressions can then be combined in the usual way, such as to yield the complex meaning *SUDDENLY ASK FOR MARRIAGE*, which everyone agrees is idiomatic.

At this point, some may worry that the specified meanings are not the literal meanings of the expressions in question. In line with this, one may want to stress that the literal meaning of [pop] is *POP* and that the literal meaning of [the question] is *THE QUESTION*, point.

However, the obvious reaction to an objection like this, is to distinguish between the literal interpretation of a given expression and something like its standard literal interpretation, all of which contrast with potential figurative extensions of these. *ASK SUDDENLY* may not be the standard interpretation of the word [pop], but it does not follow that the interpretation is therefore overtly figurative, at least not when combined with [the question].

The whole strategy thus turns on accepting manageable ambiguity. More specifically, the strategy turns on accepting a manageable ambiguity of words appearing in certain idiomatic phrases. To become clear about the kind of ambiguity I have in mind, it is worth emphasizing that the number of senses attributed to words and phrases like [pop] and [the question] is comparably low and transparent as well.

**43** Gibbs 1993, p. 63.

For example, I would say that [pop] means *POP* and *SUDDENLY ASK*, when combined with [the question]. Similarly, I would say that [question] means *QUESTION* and *QUESTION FOR MARRIAGE*, when combined with [pop]. The ambiguity is thus not random, but induced by the idiomatic phrases in question.

A similar account is provided by Sam Glucksberg 1993, who speaks of "phase-induced-polysemy".[44] However, whereas Glucksberg's PIP-model is taken to apply across the board, the current approach is limited to type-1 and type-2 idioms. Crucially, the acceptance of such ambiguities does not generalize to include type-3 and type-4 idioms, which rely on overt figuration instead. For example, I am not assuming that the word [kick] means *KICK* and *SUDDENLY DIE*, when combined with [the bucket]. Also, accepting a manageable ambiguity of words appearing in type-1 and type-2 idioms is not the same as attributing mere meaning potentials (as per Pustejovsky 1995) to all expressions of a given language.

## 9.2 Idioms of Type-2: Foundation Without Figuration and Idiosyncratic Syntax

Idiomatic phrases are most compositional, when they meet two conditions. The idiomatic meaning of type-1 cases can be accounted for, in particular, by accepting manageable ambiguity, and by letting different parts of the idiomatic meaning correspond to syntactic parts of the underlying expression. Type-2 cases, by contrast, comprise idioms, whose idiomatic meaning can be accounted for by accepting manageable ambiguity, but not in terms of their combinatorial structure, because the latter is idiosyncratic and hence not properly generalizable. Since in cases like these, meta-semanticists can do without invoking overt figuration, type-2 cases qualify as being more compositional than type-3- and type-4-cases. But since the structure plays no explanatory role, type-2 cases are less compositional than type-1-cases.

By way of illustration, consider [time and again],[45] whose idiomatic meaning is widely specified as *(VERY) OFTEN* and *AGAIN AND AGAIN*, respectively. The syntactical structure being idiosyncratic, it could hardly figure in meta-semantic explanations. Another point is that the syntactic parts do not correspond to any parts of the idiomatic interpretation anyway. Even so, the idiomatic meaning shows no significant distance from the literal interpretation of the phrase. And so, the meaning gap can be bridged without mechanisms of overt figuration. In fact, there is no need to hold that the idiomatic meaning of [time and again] results from an overt figurative extension of the word [time]. For, as is well-known, the word [time] is a highly

**44** Glucksberg 1993, p. 11.

**45** Cp. Culicover et al. 2017, p. 554.

ambiguous word, and it is does not seem far-fetched to say that one of its literal meanings is the enumerative *(VERY) OFTEN*. The use of the word [time] in the idiom [time and again] actually comes close to what Vyvyan Evans 2005 dubs the instance-sense of [time],[46] exemplified by sentences like [The horse managed to clear the jump five times in a row].

Similar thoughts are expressed by Sam Glucksberg 1993 concerning [by and large]. Having noted that the idiom is widely considered non-compositional, on grounds that the syntactic-cum-semantic analysis allegedly fails to produce anything that is relevant to the idiomatic meaning, he writes:

> The word [large] bears some relation to the idiom meaning of *GENERALLY*, and so relevant modifications should be possible, as in [by and not-so-large], in a context that would support this qualification. (Glucksberg 1993, p. 19).[47]

Glucksberg goes on to claim that the productive use of negation (as in [by and not-so-large]) provides another problem for the view that [by and large] fails to be compositional. Instead, both observations suggest that…

> […] the idiom [by and large] is not purely or completely non-compositional, because the semantics of [large] do bear some functional relation to the idiom's meaning. Thus, the idiom is partially, if minimally, compositional. (ibid., p.20).

The only respect, in which I would disagree with Glucksberg is that the relation between the expression [by and large] and *GENERALLY* is "minimal", but otherwise his considerations are grist to our mills. Its syntactical structure being idiosyncratic, [by and large] is less compositional than type-1 idioms. But since the meaning of [by and large] is considerably constrained by the literal meaning of one of its parts, the idiom is more compositional than type-3 and type-4 idioms, whose meanings are ultimately determined by figurative mechanisms.

## 9.3 Idioms of Type-3: Founding Idiomatic Meaning Through Figuration

Type-3 cases comprise all those idiomatic phrases (like [pull strings]), which have their syntactic parts corresponding to the semantic parts of their idiomatic interpretation, and furthermore involve a transfer from a literal source domain to some figurative target domain. With type-3 idioms, the impact of the compositional

**46** See Evans 2005, p. 55.

**47** With this in mind, it is telling to note that [time and again], too, allows for relevant modifications, including [time and time again].

mechanism is conjoined, and thus weakened by a different meta-semantic source, namely that of figurative transfer. Yet there is an indirect way, in which the literal meanings of the phrase's parts contribute to its idiomatic meaning. To become clear about the indirect impact of the compositional mechanism, consider the following four-part line of reasoning.

The first and foremost thing to note is that, like all other idioms, type-3 idioms are ambiguous between a literal and an overt figurative meaning. For example, the idiom [pull strings] is ambiguous between the literal meaning *PULLING THE STRINGS OF A MARIONETTE* and its figurative meaning *MAKING USE OF ONE'S PERSONAL CONTACTS*. Secondly, the syntactic parts of type-3 cases line up with different parts of the literal meaning. Thus, in the case at hand, the word [pull] corresponds to *PHYSICAL MANIPULATION*, while the word [strings] corresponds to *THE STRINGS OF A PUPPET*. At the same time, the syntactic parts of type-3 idioms line up with different parts of the idiomatic meaning. More specifically, the word [pull] corresponds to *PSYCHOLOGICAL INFLUENCE*, while the word [strings] corresponds to *PERSONAL CONTACTS*. Finally, the literal meanings of the phrase's parts are metaphorically transferred to their idiomatic meanings. In particular, there obtains a transfer from the literal source domain of *PUPPET-STRINGS* to the figurative target domain of *PERSONAL CONTACTS*, and another transfer from the literal source domain of *PHYSICAL MANIPULATION* to the figurative target domain of *PSYCHOLOGICAL MANIPULATION*. This is what yields the complex idiomatic meaning of the phrase. And so the literal meanings of the phrase contribute to the idiomatic meaning, albeit only indirectly and partially. For the bridging of the meaning gap is completed by a different mechanism, namely that of metaphorical transfer.

What does it mean to say that some interpretation is overtly metaphorical or, more generally, overtly figurative? The traditional philosophical understanding is that metaphor relies on a mingling of different domains. Drawing on a distinction proposed by Ivor Richards 1936, these domains are widely cashed out as the metaphor's tenor and the metaphor's vehicle, respectively, where the vehicle is used to conceive about the tenor in a certain way. Thus, in the case of Shakespeare's famous.

(1) Juliet is the sun,

the vehicle of the sun is used to predicate something of the tenor Juliet, say that Julia is the center of the speaker's life, or that Julia spends warmth, or that Julia is reliable, or whatever. There is reason to think that metaphorical predications are otherwise inexpressible, but what matters for the foundation of idiomatic meaning, is the considerable difference between the relevant domains. As noted by David Hills 2022:

> When we resort to metaphor, we contrive to talk about two things at once; two *different and disparate subject matters* are mingled to rich and unpredictable effect. (Hills 2022, Section 1, emphasis mine).

The metaphorically explored domains being so disparate, there is quite some way to go in bridging the meaning gap. And this, in turn, suggests that the contribution of the compositional mechanism is rather weak, especially when compared with type-1 and type-2 idioms, which do without overt figuration. The upshot is that idioms of type-3 are less compositional than type1-and type-2 idioms, respectively.

Before continuing, it is worth pointing out that the characterization of type-3 idioms is consistent with what is known as *the dead metaphor view of idioms*, at least if the latter is understood as saying that idioms originate from live metaphorical uses, but have lost their vividness due to excessive usage, i.e. because the metaphorical use has become conventionalized with time.[48]

## 9.4 Idioms of Type-4: Figuration Without Structural Correspondence

At the low end of the compositional scale are idioms (like [kick the bucket]), which lack a direct mapping between the syntactic parts of the underlying expressions and the structural parts of their idiomatic meanings, but yet involve a strong figurative transfer from some literal source domain to some figurative target domain.

In one respect, type-4 idioms are not at all like type-3 idioms, but very much like type-2 cases instead, namely insofar their syntactic structure fails to match the mereological structure of their idiomatic meaning (e.g., whereas [die] is an intransitive verb, [kick] is not). Since the syntax of type-4 idioms thus fails to correspond to different parts of their idiomatic meaning, the latter could hardly be determined by the meanings of the parts and the particular way, in which the parts are combined syntactically. There is, however, another respect, in which type-4 are not at all like type-2 idioms, but very much like type-3 idioms instead, namely insofar their idiomatic meaning cannot by fully explained without invoking overt figurations like metaphorical transfer (holding that [kick] is systematically ambiguous between *KICK* and *DIE* is unacceptable). However, just because the syntax of type-4 cases fails to underwrite their idiomatic meaning, and just because the latter ultimately comes about as a matter of figurative transfer, does not guarantee that the literal meanings of the parts lack relevance. Quite the contrary.

At least three considerations speak against the conclusion that type-4 cases are entirely non-compositional. The first and foremost point to take into account is that

**48** Outspoken proponents of the dead-metaphor view of idioms are hard to find, but Alston 1964, p. 99, comes close to holding such a view. Gibbs 1993 is highly critical of the dead-metaphor view, but actually has in mind the alleged frozenness of idioms.

the literal meanings of the words figuring in type-4 cases have an indirect impact on their idiomatic meanings. Concerning the etymology of [kick the bucket], for instance, the *Oxford Dictionary of Idioms* defines:

> The bucket in this phrase may be a pail, on which a person committing suicide might stand, kicking it away before they hanged themselves. Another suggestion is that it refers to a beam on which something can be hung up; in Norfolk dialect the beam from which a slaughtered pig was suspended by its heels could be referred to as a *bucket.* (Siefring 2004, p. 159).

I am not claiming that these are the only etymological explanations on the market, let alone the best. However, the decisive point of the etymological explanation is that the literal meanings of [kick] and [bucket] are indispensable when it comes to explaining why the idiom means *DIE*; that, in some way or other, the idiomatic meaning originates from the literal meanings of these words. This, then, is another respect, in which type-4 idioms are exactly like type-3 idioms.

The second point is that crucial aspects of the literal meaning of the words figuring in type-4 idioms can survive in their idiomatic use. It has been demonstrated, for example, that the idiom [kick the bucket] encodes *SUDDENNESS*, just like the literal use of the word [kick] does. Therefore, the idiom is not suited to characterize cases of protracted death; in a way, one just cannot kick the bucket as one slowly dies.[49]

The final thing to take into account is that the literal meanings of the words figuring in idiomatic phrases are somehow active in productive discourse, i.e. in creative extensions and modifications produced in real-life language use. And type-4 idioms like [kick the bucket] provide no exception here. This has long been noted by Cacciari and Glucksberg 1991, and is elaborated further by Andy Egan 2008 and Madeleine Arseneault 2014a. By way of illustration, consider the following conversations.

> Question: Did that old lady finally kick the bucket?
>
> Answer-1: Nah, she barely nudged it.[50]
>
> Answer-2: Well, she almost connected yesterday; but today, she really put the boot on it.[51]

In (Answer-1) and (Answer-2), the idiom [kick the bucket] is extended and modified creatively. In particular, the idiom is modified in a way that would seem to depend on

**49** This has long been noted by Nunberg 1977, p. 214, and is affirmed by the empirical studies conducted by Hamblin and Gibbs 1999.

**50** This answer is discussed by Cacciari and Glucksberg 1991, p. 221.

**51** This answer is discussed by Egan 2008, p. 393 and Arseneault 2014a, p. 151.

the literal meaning of its constituent parts, and not upon their idiomatic understanding. Even more specifically, we can say that the creative use in (Answer-1) and (Answer-2) depends on the literal understanding of [kick] (in the sense of *STRIKING FORCIBLY WITH A BOOT*)), but not on its idiomatic meaning (in the sense of *DYING*). To Egan and Arseneault, this suggests a pragmatic treatment of idioms (to which we'll turn in Section 10.4.), but the basic insight here is that, if the literal meanings of their constituents are active in creative extensions and modifications of idiomatic phrases, their overall meaning could hardly qualify as being independent from the meanings of the parts, even though the former fail to be fully determined by the latter.

# 10 Different Theories of Idioms

Why think that compositionality is a graded mechanism? The decisive reason no doubt is that there is ample direct evidence for such a view. The thing is that, when considering different linguistic phenomena or different fragments of natural languages like English, one discovers that some expressions are more compositional than others. In the foregoing sections, this was demonstrated with respect to idioms. In order to make the case watertight, though, one does well to take a look at other theories of idiomatic phrases. The following sections are devoted, accordingly, to a number of different theories, none of which explicitly states that some idioms are more compositional than others. These theories include the long word view of idioms, the standard lexical view and what I call the pure chunks views. My discussion points to some of the problems of these views, and so suggests that the degrees view is preferable to these. Subsequently, I turn to discussing pragmatic accounts, which turn out to be compatible with the degrees view.

## 10.1 The Long Word View

According to the long word view, idiomatic phrases lack proper parts. Appearances to the contrary, they are more or less like morphemes, or single-morphemic words, just a bit longer. Hence their name. Lacking parts, moreover, idioms could have no syntactic structure that merges different words into whole phrases. It only seems as if idioms had phrasal structure, where, in truth, the lexicon includes downright bizarre entries like [kick_the_bucket], complete with spaces, underscores and other special characters.[52] The long word view is outlined and put to criticism by Madeleine

52 This is emphasized by Arseneault 2014a, p. 152.

Arseneault 2014a.[53] One of the few advantages of the long word view is that it accounts for the frozenness of idioms, i.e. for the fact that idioms fail to undergo standard syntactical transformations. As detailed by Arseneault:

> If the idiom is a single word, then some syntactic transformations cannot be applied to parts of the idiom. In this way, since [bucket] is not a part of the idiom (viz. [kick the bucket]), pseudo-cleft-transformations and topicalizations cannot occur: it can't be the bucket that Chuck kicked. (Arseneault 2014a, p. 144, addition in brackets mine).

It must immediately be noted, though, that frozenness is at best a characteristic of a select few of idiomatic phrases. This point is elaborated by the threesome Nunberg et al. 1994, who clarify that idioms like [pull strings] undergo all different sorts of syntactical transformation, inducing modification, topicalization, quantification, ellipsis and anaphoric reference.

> Adjectival modification
>
> Pat got the job by pulling her *mighty* strings.
>
> Modification by relative clauses
>
> Pat got the job by pulling strings *that weren't available to anyone else.*
>
> Topicalization
>
> *Those* strings, she would not pull for you.
>
> Quantification
>
> Pat could have pulled *even more* strings.
>
> Ellipsis
>
> Pat's strings were pulled, but Chuck's _____ were not.
>
> Anaphoric reference
>
> Pat pulled her mighty strings for me, but *they* just weren't strong enough.

On closer inspection it turns out that the vast majority of idioms is syntactically flexible in at least some ways. Thus, in a careful study, Attila Cserép 2019 demonstrates that

**53** Arseneault 2014a, p. 143, suspects that the view is probably without proponents. It would seem, though, that a number of psycholinguistics come close to proposing such a view. See, for instance, Swinney and Cutler 1979, p. 524, on the idiom-processing model of Bobrow and Bell 1973.

even paradigmatic example of frozen idioms like [kick the bucket] exhibit some flexibility, actually including passive use.

> Passivation
>
> Sadly, Rivers died in September and with *her bucket kicked*, the world became that bit dimmer.[54]

This, in turn, points to the major disadvantage of the long word view, which is that it fails to distinguish between different types of idioms.

Another serious drawback of the long word view is that it fails, dramatically, from an explanatory point of view. Why is it that the idiom [kick the bucket] means *DIE SUDDENLY*? A proponent of the long word view could not provide an answer in terms of the (literal) meanings of any constituent parts and the way these are syntactically combined. This should come as no surprise: for if idioms have no proper parts, then their meaning cannot be explained in terms of any such parts. But from the meta-semantic perspective, this is still a major disappointment, also because the theory shifts all the explanatory burden onto other factors. In the worst case, no explanation is given at all, such that the relation between a long word and its meaning turns out to be a brute semantic fact. In this vein, non-decomposable idioms have traditionally been thought, as Hamblin and Gibbs 1999, p.33, note, "to receive their meanings through stipulation".[55]

Before turning to the lexical view, it should finally be emphasized that, in spite of all appeasement, idiomatic phrases not only seem to consist of parts, but altogether have their meanings determined by these parts, at least to a certain degree. Even with paradigmatic examples of non-compositional idioms like [kick the bucket], it has been demonstrated, as shortly noted in Section 9.4, that crucial aspects of the literal meaning of their parts (such as the suddenness of the process) survive in their idiomatic use.

## 10.2 The Lexical View

Unlike the long word view, the lexical view does not deny that idiomatic phrases have meaningful mereological structure. But proponents of the view are quick to add that the literal meanings of the parts are irrelevant when it comes to determining the idiomatic meaning of idioms. As far as I can see, this is precisely the view that van der Linden 1992, p. 223, dubs the traditional view, whose proponents include Bruce Fraser 1970 and high-profile linguists like Noam Chomsky 1980.

**54** Cserép 2019, p. 485.

**55** Also cp. Titone and Connine 1999, p. 1657.

However, even though the standard lexical view does not contradict appearances, it basically confronts the very same problems that so much threaten the long word view and then at least one more. If, appearances to the contrary, idioms have no semantic parts, and lack syntactic structure, then it is no wonder why the meanings of idioms fail to be determined by the meanings and combinatorial structure of any would-be-parts. But if idioms do exhibit meaningful mereological structure, then it becomes downright mysterious how the parts and their combinatorial structure could possibly fail to determine the idiom's meaning.

## 10.3 The Pure Chunks View

Just like the lexical view, and unlike the long word view, the pure chunks view says that idiomatic phrases exhibit mereological structure. But very much unlike the lexical view (and the long word view), the pure chunks view assumes that parts of idioms have figurative meanings and holds that it is these figurative meanings that combine to determine the idiomatic meaning of a given phrase. On the pure chunks view, there is, accordingly, no gap between the literal meanings of a given idiom and its figurative use.

The view is identified, qua chunks view, by Arseneault 2014a; Egan 2008, who rightly attribute it to Nunberg et al. 1994. Since, however, Nunberg, Sag and Wasow deny that idioms are generally compositional, I prefer to classify their view as a pure chunks view. More carefully: Nunberg, Sag and Wasow draw a twofold distinction between idioms that have their meanings systematically distributed over their parts and idioms that fail to have such distributed meanings. They regard the former as idiomatically combining expressions (ICEs, for short), whereas the latter are classified as idiomatic phrases (IPs, for short). In this twofold framework, only ICEs are composed of figurative chunks, whereas IPs are not compositional at all. A fortiori, Nunberg, Sag and Wasow fail to acknowledge that some idioms are more compositional than others.[56] Given what has been said so far, this should be the main drawback of the (pure) chunks view, which is otherwise a vast improvement over the long word view and the standard lexical view.

A second drawback of the pure chunks view is that it opens the door to unbridled ambiguity. For each idiom or, at any rate, for each idiomatically combining expression, the lexicon of a given language will not only have to contain the literal, but also its idiomatic meaning. As noted by Arseneault 2014a:

**56** Espinal and Mateu 2010, p. 1409, come to the same conclusion as we do.

> For the Chunks view, the idiomatic parts of [let the cat out of the bag] will each require entries for both their idiomatic and their ordinary literal meanings. […] Although a big lexicon is not in itself a reason to reject the Chunks view, all else being equal, if an alternate account can avoid positing as much ambiguity, then it would be a reason to favor the alternate account. (Arseneault 2014a, 152-3).[57]

Populating lexica with ambiguous expressions is tolerable, as long as that process is manageable. But it's not acceptable if anything goes. By my lights, ambiguities should only be posited with type-1 and type-2 idioms, but not with type-3 (and type-4), which are better treated in terms of figuration instead.

A third, related problem is that the pure chunks view fails to duly acknowledge that the literal meanings of an idiom's syntactic parts have an influence on its idiomatic meaning. The pure chunks view recognizes a systematic correspondence between the meaning of a given idiom and the figurative meaning of the parts. Unfortunately, though, the view fails to emphasize that the figurative meanings originate from the literal meanings in question. By way of illustration, consider, once more, [pull strings]. The complete meta-semantic explanation involves a metaphorical transfer from the literal domain of *PUPPET-STRINGS* to the figurative domain of *PERSONAL CONTACTS*, and another metaphorical transfer from the literal domain of *PHYSICAL MANIPULATION* to the figurative domain of *PSYCHOLOGICAL MANIPULATION*. But then, if the whole meaning of the idiom [pull strings] is determined, to considerable extent, by the figurative meanings of [pull] and [strings], respectively, and if, moreover, the figurative meanings of [pull] and [strings] originate from their literal counterparts, then the latter play a significant role in accounting for the idiom's meaning. As noted in our discussion of type-3 idioms, the literal meanings of the parts thus play an indispensable role in accounting for the idiomatic meaning, although at some point in the explanatory chain, the compositional processes is supplemented by another meta-semantic factor (viz., the figurative transfer).

## 10.4 Pragmatic Accounts of Idiomatic Meaning

Given, then, that the long word view of idioms, the standard lexical view and the pure chunks view are all fraught with problems, the degrees view turns out to be a serious contender on the market. In this section, I finally turn to pragmatic accounts of idiomatic meaning. The main lesson for taking home is that pragmatic views are consistent with our finding that idioms are compositional to varying degrees.

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**57** This is well in line with Katz's and Fodor's views about the economic gain of compositionality. Cp. Katz and Fodor 1963, p. 192.

Just like every other view except for the long words view, pragmatic views take the apparent mereological structure of idiomatic phrases at face value. Moreover, just like the lexical view, but very much unlike the pure chunks view, pragmatic views say that the parts of idiomatic phrases contribute their literal meanings to the compositional process. The literal meanings of the parts fall short, however, of determining the full idiomatic meanings of the phrases in question. Pragmatic views thus acknowledge a gap lurking between the literal and the idiomatic interpretations of idiomatic expressions. Their trick is to bridge the meaning gap by suitable pragmatic factors. Actually, the literature contains various proposals of this type. According to Rosa Elena Vega-Morena 2003, for instance, the construction of idiomatic meaning is ultimately a matter of relevance. Andy Egan 2008, by contrast, holds that idiomatic meaning cries out for pretense analysis. And Madeleine Arseneault 2014b develops an implicature account of idiomatic meaning. The following discussion is tailored towards an implicature account, but most everything we say should be transferable to relevance and pretense accounts.

The most straightforward reason for adopting a pragmatic theory is that, at some point in the analysis of idioms, pragmatic features become mandatory anyway. So far, our discussion has focused on different, context-invariant types of idiomatic phrases, considered more or less in abstraction from real-life language use. But at some point in the analysis, one would certainly want to include the actual use of idiomatic phrases and this, of course, necessarily goes along with the embedding of idiomatic phrases in sentential structures as well as concrete contexts, in which particular tokens of these sentential structures are produced. And pragmatic effects arguable become mandatory at this level. By way of illustration, consider the idiom [kick the bucket]. It is fine to specify its idiomatic meaning as *(SUDDENLY) DIE*, but that's a semantic fact about the context-invariant idiom type, and not about its meaning in real-life language use. In order to fix the meta-semantics of the latter, it is indispensable to consider full-fledged sentences involving the phrase, as in:

(2) Did that old lady finally kick the bucket?

The felicitous use of a sentence like (2) presupposes a number of meta-semantic factors: a spatio-temporal environment, a particular lady somehow salient in that environment, a speaker and their audience, and, plausibly, also an array of pragmatic factors. Most notably, the speaker would seem to be required to refer to the lady in question. Also, there should be an act of predication involved. Plus, the speaker is to make sure that the audience understands what they say. The addressee, in turn, is required to update. And so on. Since pragmatic features thus enter the picture anyway, it is natural to suggest that the pragmatics also plays a role in determining the idiomatic meanings of such sentence tokens. The main worry that one might have about a proposal like this, is that it threatens to become too liberal. As

Elisabeth Camp 2006 puts the issue concerning the Gricean analysis of figurative speech:

> This can seem inherently implausible. More importantly, it can also appear methodologically suspect. If the traditional "Gricean" is allowed to treat the uses to which we ordinarily put our words in such a cavalier fashion, then it looks like he can postulate any semantics he pleases. He can always insist that the speaker said just what his semantics predicts, and invoke his elaborate pragmatic machinery to bridge the gap between that and what is intuitively communicated. (Camp 2006, p. 281).

Also, there is Jason Stanley's worry that pragmatic theories fail to account for the frozenness of idioms, but rather tend to overgenerate,[58] but here my concern is not with doubts about pragmatic theories, nor with dispelling such doubts. Instead, my aim is to work out that pragmatic accounts like the implicature view harmonize with the graded view of idioms. By way of introducing implicature, then, imagine Johnny and Mary, who often spend their evenings together going to the movies. Today, too, Johnny queries whether Mary would like to go, but she responds:

(3) I am tired.

At this point, one can distinguish between what Mary literally says, and what she communicates thereby. What Mary literally says asserting (3) is that she is tired. But what she communicates thereby is something entirely different, namely something to the effect that *SHE DOESN'T FEEL LIKE GOING TO THE MOVIES TODAY*. What is thus communicated by uttering (3) in a suitable context may alternatively be classified as a post-propositional effect, a secondary proposition, or a full-fledged proposition, which is determined by intuitive truth-conditions. But whatever option one chooses, one buys in a significant gap between the literal content of Mary's utterance and her communicating that *SHE DOESN'T FEEL LIKE GOING TO THE MOVIES TODAY*, and the Gricean holds that the latter is generated via implicature. Wayne Davis 1998 calls this the "generative assumption".[59]

Gricean accounts of communicative contents are plausible (if potentially farfetched) in cases, where speakers are deliberately flouting some general conversational maxim (e.g., relevance), but can still be regarded as co-operative in discourse. The Gricean mechanism can likewise be seen as underlying metaphorical and other figurative predications and, therefore, as underlying the idiomatic

**58** See Stanley 2001, p. 64ff. Egan 2008, p. 396ff., develops a critical reply to Stanley's argument. Arseneault 2014b, p. 63ff., argues that Stanley's argument is best addressed in terms of implicature, rather than pretense. By my lights, Stanley's objection should be considered in the light of the variable frozenness of idioms.

**59** Davis 1998, p. 17.

meanings of type-3 and type-4 idioms in the sense developed above. Paul Grice's own example is the metaphorical.

(4) You are the cream in my coffee.[60]

Given a suitable context and allowing that the speaker is being co-operative, they may be regarded (not as committing a categorical mistake, but rather) as implicating, and so as generating a secondary proposition like *YOU ARE THE BIGGEST THING IN MY LIFE*. In a further step, the Gricean proposal can then be applied to utterances of sentences containing type-3 and type-4 idioms, which, on our view, are partially grounded in metaphorical transfer. To see how the explanatory story might go, consider an utterance of the sentence.

(5) Elon got the job by pulling strings.

The idiom [pull strings] receives its idiomatic meaning through a metaphorical transfer from the source domain of puppet strings to the target domain of personal contacts. So far, however, little was revealed about the grounds of such figurations. The Gricean can probably fill a lacuna by providing a deeper explanation here, namely by linking metaphorical speech to implicature. What remains, then, is to generalize the account, as proposed, for instance, by Arseneault 2014b:

> We now turn to an account of how idiomatic meaning is determined for idiomatic phrases in their typical use. My proposal is that idioms in their typical use achieve this via generalized conversational implicature. These implicatures are conversational implicatures because they are conveyed in virtue of conversational expectations. What makes them generalized is that the implicature is generally conveyed by a specific combination of words whenever that combination is used. (Arseneault 2014b, p. 69).[61]

While we're at it, there is another point worth highlighting, which is that pragmatic effects can probably be captured by degrees theory of compositionality. Being secondary propositions (or full propositions, or post-propositional effects, or whatever), implicatures and pretenses presuppose the expression of a (primary) proposition, where the expression of such a proposition relies, in turn, on two different elements. The first element is a token of a concrete linguistic structure, ideally a particularized instance of a meaningful sentence type in the declarative. The second element is a suitable context, in which such sentence token is produced. On this intuitive picture, a proposition is basically the product of the meaning of the sentence type in question and contextual parameters like time, place, speaker and entities salient in the

**60** Grice 1989, p. 34.

**61** In our framework, the conventional aspect is captured as a general feature of idioms, namely by requiring that idioms have a use among a given language community.

context. And so propositions are determined by factors that clearly go beyond the meaning of the relevant sentence type. At the same time, such propositions are never independent from the meanings of the sentences produced in a given context. Which is just another way of saying that the meaning of the sentence determines the proposition to a certain degree. And basically the same should go for the secondary proposition. For, if secondary propositions require the expression of a proposition, and if propositions, in turn, are partially determined by the literal meanings of the sentences used to express them, then secondary propositions should be indirectly determined as well. The details must be worked out elsewhere, but the upshot is that that pragmatic effects (like implicature and pretense) are determined by the literal meanings and combinatorial structure of the words used to generate them, albeit only to a certain degree.

## 11 Further Types of Idioms

The main result of Section 9 is that idioms are compositional to varying degrees. In this section, I carry the differentiation a little further and emphasize that the distinction between type-1, type-2, type-3 and type-4 idioms is really just a basic distinction, with much potential for further gradations. Specifically, I suggest that our basic fourfold distinction can plausibly be refined and extended in at least four different ways.

Probably the most far-reaching factor and most generous source of further diversity in the realm of idioms is that figuration is a graded affair as well. Further work is required to confirm this conjecture, but, intuitively, it would seem that figurations vary significantly in terms of creativity. In this vein, Boguslav Bierwiaczonek 2024 conceives of metaphor as graded. In particular, Bierwiaczonek distinguishes between three different types of metaphor, depending on their varying distance between their respective source and target domains. The general idea, in any case, is to balance the creativity of metaphors against their compositional structure and claim that the more creative they are, the less compositional metaphors are.

Second, there are what Cacciari and Glucksberg 1991 classify as quasi-metaphorical idioms, whose literal meanings qualify as a paradigmatic instances of their idiomatic interpretations. The standard example would be [carrying coals to Newcastle].[62] As far as their paradigmatic instances are concerned, such idioms might be classified as perfectly compositional. Things can hardly get more literal,

**62** The authors also mention the metonymic [bury the hatchet]. See Cacciari and Glucksberg 1991, p. 230.

after all, than carrying coals to Newcastle. But since things are different with the non-literal uses of quasi-metaphorical idioms, it is not exactly where to place these on our compositional scale.

Another distinction is highlighted by Espinal and Mateu 2010, whose observations draw on the varying syntactical flexibility of idioms (discussed in Section 10.1). In particular, Espinal and Mateu point to idiomatic phrases like [cry one's heart out over], which seem to be less flexible syntactically than type-3 cases, but more flexible than type-4-cases.[63] Assuming, as is plausible, that varying syntactic flexibility is indeed a guide to different degrees of compositionality, we should recognize a further type of idiom sandwiched between type-3 and type-4-cases, respectively.

At the lowest end of the compositional scale, finally, one may wish to include pure argument structure à la Goldberg 1995. Examples of idiomatic argument structure include the ditransitive, the so-called caused motion construction, the way-construction, the schematic [VP X's NP-off]-construction, and so on. With pure idiomatic argument structure, there are reasonable doubts whether the meaning of the whole is determined by the meaning and combinatorial structure of their parts. But that should basically be because the parts are not specified or, at any rate, underspecified. The ditransitive, for instance, is cashed out in terms of the schema [Subj, V, Obj1, Obj2], which entirely consists of slots to be filled. Even so, it would not be appropriate to claim that the meaning of the whole argument structure is entirely independent of the meaning of its parts. First, it can be argued that argument structure is meaningful, after all. Thus, the ditransitive is widely cashed out as saying that *X CAUSES Y TO RECEIVE Z.* And, second, it is hard to deny that the meaning of schematic argument constructions is constrained by the types of words that can figure in them. As argued, for instance, by Goldberg 1995, the subject slot must refer to a volitional agent, while the object slot must refer to a willing recipient.[64]

## 12 Conclusion and Prospects for Future Work

This paper serves several agendas. Its main aim is to present a degrees view of compositionality, according to which some fragments of natural language are more compositional than others. In the course of the paper, it was shown, moreover, that

**63** For details, see Espinal and Mateu 2010, Section 2.

**64** This is why sentences (6a) and (7a) are well-formed, whereas sentences (6b) and (6b) are not.

(6a) Joe baked his mother a cake.

(6b) * Joe brought his mother a cake, since he did not eat it on his way home.

(7a) Sally brought the boarder a package.

the degrees view dissolves a (seemingly) dilemmatic situation at the heart of semantics, which is that countless expressions fail to have their meanings fully determined by the meanings and combinatorial structure of their respective parts, while, at the same time, natural languages are ripe with expressions that have their meanings determined compositionally to almost perfect degree. The challenge thus is to address recalcitrant expressions without losing sight of those cases, in which compositionality works perfectly well. The degrees view provides just such a solution by attributing an undiminished role to compositionality, and holding that complex expressions are generally compositional, albeit with varying intensity. In order to provide further motivation, the degrees view was applied in the realm of idioms, which are usually held to resist composition by definition. Our investigation reveals that there are four different types of idiomatic phrases, which can be ranked and differentiated further along a compositionality scale. Overall, the results of this paper suggest, then, that the degrees view of compositionality is a promising alternative to the standard view, and worth developing further. Actually, it was indicated already where there is need for further investigation. Amongst other things, it is worth investigating whether the degrees theory of compositionality applies to metaphorical speech and to the expression of propositions and post-propositional effects. Further promising fields of research include semi-productive morphology, nominal compounds, quantified phrases, that-clauses for expressing propositional attitudes, quotation, constructions, as well as proverbs and other phraseologisms.

**Acknowledgments:** I wish to thank an anonymous referee for very helpful suggestions concerning an earlier version of this paper.

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