DANIEL GUTZMANN

Use-Conditional Meaning

Studies in Multidimensional Semantics

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“This damn book is for you!”

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General preface

Oxford Studies in Semantics and Pragmatics publishes original research on meaning in natural language within contemporary semantics and pragmatics. Authors present their work in the context of past and present lines of inquiry and in a manner accessible to both to scholars whose core areas of expertise are in linguistic semantics and pragmatics, and to researchers in related and allied fields such as syntax, lexicology, philosophy, and cognitive science. The series emphasizes rigorous theoretical analysis grounded in detailed empirical investigation of particular languages.

This is a companion series to *Oxford Surveys in Semantics and Pragmatics*. The *Surveys* series provides critical overviews of the major approaches to core semantic and pragmatic phenomena, a discussion of their relative value, and an assessment of the degree of consensus that exists about any one of them. The *Studies* series equally seeks to put empirical complexity and theoretical debate into comprehensible perspective, but with a narrower focus and correspondingly greater depth. In both series, authors develop and defend the approach and line of argument which they find most convincing and productive.

In this monograph, Daniel Gutzmann draws a bright line between semantics (conditions on truth) and pragmatics (conditions on use, as in Kaplan's "Ouch!"). Adapting traditional tools of formal semantics, he builds this distinction into a grammar that allows expressions to impose grammatical constraints on both kinds of meaning simultaneously. Unlike the pathbreaking work of Potts on expressives such as "damn", Gutzmann's multidimensional fragment is strictly compositional. Gutzmann tests his proposal with two main in-depth case studies: grammatical constraints on sentence mood (whether an utterance serves as a statement or a question or some other kind of speech act); and modal particles in German, which have notoriously elusive discourse effects, including *doch*, *ja*, *wohl*, and others. The result is a carefully worked-out, innovative, and fully compositional approach to multidimensional meaning.

Acknowledgments

The first time I came into contact with formal semantics was when one of my earliest teachers in linguistics, Markus Steinbach, handed me Chris Potts's *The Logic of Conventional Implicatures*. Even though all those formulas and symbols it contains were completely cryptic to me back then, they held a great fascination. With some virtual help from Horst Lohnstein in the form of a well-worn second-hand copy of his introduction to semantics, I somehow managed to get to a point where I could grasp those formulas and worked my way through that book. At that point, I was completely hooked on linguistics, and formal semantics in particular. But even then, I would not have thought that six years later, I would hold a dissertation on semantics in my hand. Fittingly, the dissertation continued the path initially set out by my first contact with semantics. And now, turning a revised version of that dissertation into a book published by the same publisher as published the book that got me started with semantics somehow feels as if I have finally come full circle.

There are many people who influenced me and my linguistic thinking during the time of my first encounter with linguistics up to the submission of the final manuscript of this book and who thereby, directly or indirectly, contributed to its final form. Jörg Meibauer and Markus Steinbach were the first to spark my interest in linguistics and they went on to support me during my time in Mainz. Also at Mainz, Elke Brendel taught me a lot about the logical foundations on which all semantics rests. Erik Stei became a friend and regular discussant for all things philosophical. When I moved on to become a PhD student at the *Graduiertenkolleg* "Sentence Types" at Frankfurt, Elena Castroviejo Miró was "my postdoc" and helped me to dig even deeper into issues of multidimensionality. When I finally got a position at the University of Frankfurt, my part-time office-room-mates Viola Schmitt and Katharina Hartmann kept me both entertained and thinking about other linguistic phenomena unrelated to my thesis.

Eric McCready, whose work I started to follow eagerly when I was still a student, had a huge influence on me as a linguist. Never would I have thought back then when I was checking the semantics archive for more of his work that he would become one of my supervisors. But he

did and I think his influence, though never intrusive, shows throughout this book. Besides being a great semanticist and philosopher, he is also one of the coolest guys to hang out with.

Hans-Martin Gärtner, who acted as my third supervisor, is not only one of the cleverest people I have ever met, but is also perhaps, of everyone I know, the person who thinks things through the most, in every detail. I learned a lot from him about arguing carefully, and to respect old works on current topics. I am grateful to have worked with him and for all the support he has given me through the years.

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My biggest thanks, however, are reserved for Ede Zimmermann. He is not only one of the most brilliant semanticists and thinkers I know, but was also the best principal supervisor for my thesis I can imagine. He gave me all the freedom and independence I needed to cook up my ideas, but whenever any question popped up, he took all the time in the world to discuss every tiny detail. Without him, this book would not be as it is. I am also grateful to him for always supporting me in my efforts to hold down a faculty job and write a thesis while having a family.

My family, of course, deserves much more gratitude than any words in an Acknowledgments section will ever be able to express. As much as I enjoy my work and like to spend my time thinking about language and linguistics, they are the ones who always bring me back to the real world. Watching my kids growing up a little more every day always reminds me that there are many things that matter much more in life than the latest tech in semantics.

August 2014 D. G.

List of abbreviations, symbols, and typographic conventions

Abbreviations

[±2*d*]	[±*2-dimensional*]
[±*f*]	[±*functional*]
[±*rs*]	[±*resource-sensitive*]
A	adjective
Adv	adverb
C	complementizer
CG	common ground
Conj	conjunction
COP	copula
CP	complementizer phrase
CP^{spec}	specifier position of CP
D	determiner
DP	determiner phrase
FEM	feminine
HON	honorific
LER	lexical extension rule
LF	logical form
IMP	imperative
INF	infinitive
MASC	masculine
MP	modal particle
NEG	negation
NEUT	neuter
N	noun
NOM	nominative
NP	noun phrase
Part	particle
PF	phonological form
Pro	pronoun
PST	past tense

Sf	suffix
TC	truth conditions
TOP	topic
t-content	truth-conditional content
UC	use conditions
u-content	use-conditional content
UCI	use-conditional item
V	verb
VP	verb phrase

Symbols

c	context
c_S	speaker of context c
c_H	hearer of context c
c_W	world of context c
$c_@$	actual context
$w_@$	actual world
$[\![\cdot]\!]$	interpretation of logical expressions
$\|\|\cdot\|\|$	interpretation of natural language expressions
$(\!\| \cdot \|\!)^c$	combined semantic information
$\Downarrow_c$	lowering operator for use-conditional content
$\neg$	logical negation
$\vee$	logical inclusive disjunction
$\wedge$	truth-conditional conjunction
$\exists$	existential quantifier
$\forall$	universal quantifier
$\odot$	use-conditional conjunction
$\star$	use-conditional type shifter
λ	lambda operator
$\diamond$	possibility modal
$\sim$	focus interpretation operator
I_σ	indentity function on type σ
π	projection function
$\Rightarrow$	lexical extension
$\leftrightsquigarrow$	abbreviation function
$\rightarrow$	implication; "implies"
$\not\rightarrow$	"does not imply"
$\gg$	"presupposes"

$\not\gg$	"does not presuppose"
$+>$	"implicates"
$\cap$	set intersection
$\cup$	set union
$\subseteq$	subset relation
$\in$	element relation
$[\cdot]_{\text{F}}$	focus feature
$[\cdot]_{\text{T}}$	topic feature
prop	a proposition

Typographic conventions

In linguistic examples, I use **boldface** to highlight relevant expressions, and SMALL CAPS to indicate focus accent on an expression. In semantic formulas, **boldface** marks logical constants. In the main text and in quotations, I use *italics* to give emphasis. *Italics* in the main text are also used for expressions in the object language. I use 'single quotation marks' for translations of language examples and "double quotation marks" for all other quoted matter, such as verbatim quotes and scare quotes.

1

Introduction

1.1 Pragmatics and the scope of semantics

Semantics and pragmatics, traditionally contrasted with phonology, morphology and syntax, which all focus on the *form* of linguistic expressions, are the subdisciplines of linguistics that deal with *meaning*. The idea of distinguishing these two approaches to meaning is usually attributed to Morris (1938: 6), according to whom semantics studies "the relations of signs to the objects to which the signs are applicable", while pragmatics studies "the relation of signs to interpreters". Under this view, semantics is as an abstraction from pragmatics, as is explicit in the work of Carnap:

> If in an investigation explicit reference is made to the speaker, or, to put it in more general terms, to the user of a language, then we assign it to the field of pragmatics. [. . .] If we abstract from the user of the language and analyze only the expressions and their designata, we are in the field of semantics. (Carnap 1942: 9)

The question of how this abstraction approach can be spelled out in detail leads to some fundamental questions for the semantic enterprise. In order to distinguish semantics from pragmatics, we must have a clear picture of what semantics is supposed to deal with in the first place. What is the scope of semantics? How much and what kind of meaning should be regarded as semantic aspects of linguistic meaning? An answer to these questions will provide us with some criteria to delimit which aspects of the meaning of linguistic expressions count as semantic, leaving other aspects to the pragmatic side. At the same time, conceptually defining the scope of semantics raises requirements that the formal or empirical tools used to study and describe semantic aspects of linguistic expressions have to meet. Giving answers to these questions and developing the corresponding tools for the resulting conception of semantics is one of the major goals of this book.

While the exact rendering of the distinction between semantics and pragmatics and their interaction has given rise to much discussion and

still remains highly controversial,[1] the basic idea, which has not lost any of its intuitive appeal, is very simple. Whereas semantics studies the literal meaning of an expression, the subject of pragmatics is what and how speakers communicate by utterances of that expression. In other words, semantics is more tied to the *conventional* aspects of linguistics meaning as encoded in the lexicon, while pragmatics deals with the *conversational* aspects of speaker meaning in concrete discourse contexts.

The distinction between conventional and conversational aspects of meaning found a theoretical elaboration in truth-conditional semantics in the Fregean tradition, which constitutes a paradigmatic case of a systematic answer to the question of what the scope of semantics is. Semantics concerns those aspects of meaning that are relevant for determining the truth conditions of a sentence. This conception immediately gives us a procedure to test whether two expressions differ semantically in meaning or not. If an expression is substituted by another one while leaving the rest of the sentence as it was and the truth conditions of the sentence change, the two expressions differ in semantic meaning. If, on the other hand, the truth conditions remain the same, their semantic meaning must also be the same. Applying this procedure shows, for instance, that *cat* and *turtle* differ in meaning, because substituting one for the other changes the truth condition of the overall sentence. Example (1.1a) may well be true while (1.1b) is false and vice versa.[2]

(1.1) a. A **cat** sleeps under the couch.
b. A **turtle** sleeps under the couch.

In the same vein, this test establishes that *couch* and *sofa* have the same meaning because, barring quotational contexts, two sentences that differ only with respect to these two words will always have the same truth conditions. There are no situations in which (1.2a) is true while (1.2b) is false or vice versa. Either both are true or both are false.

(1.2) a. The turtle sleeps under the **couch**.
b. The turtle sleeps under the **sofa**.

Expressions like *couch* and *sofa* can be exchanged without changing the truth conditions of the sentence in which they occur. They are truth-conditionally equivalent.

[1] See, amongst others, Bianchi (2004); Borg (2004); Cappelen and Lepore (2005); Carston (2002); Levinson (2000); Preyer and Peter (2005, 2009); Recanati (2004a,b, 2010); Szabó (2005); Turner (1999).

[2] Throughout this book, I will use boldface to highlight relevant aspects of the examples.

In contrast, according to the criterion of truth-conditionality, *non-truth-conditional* meaning that cannot be accounted for by the contribution it makes to the truth conditions of a sentence belongs to the realm of pragmatics. This definition of pragmatics is most famously captured in the so-called Gazdar formula (Gazdar 1978: 2).

(1.3) PRAGMATICS = MEANING − TRUTH CONDITIONS

This definition of pragmatics, and thereby of semantics, means that aspects like conversational implicatures (Grice 1975) are pragmatic, as they are not part of the truth-conditional content of a sentence. Consider the following example uttered at a party:

(1.4) A: Where is Kate?
B: A bunch of people left three minutes ago.
+> 'Maybe Kate left with them.'

In the context of A's question, B's answer implicates that Kate possibly left the party as well. However, this inference is obviously not part of the truth-conditional content of the sentence B uttered. It is true if a bunch of people left the party three minutes before the utterance time, even if Kate left the party alone ten minutes ago, or if she did not leave at all. And obviously, the implicature that Kate left is not part of the conventional meaning of the sentence. Just imagine this sentence in isolation or in a different context like, say, after the question *Where is Dave?*, and it does not convey anything about Kate's whereabouts.

However, when we go beyond simple cases like *cat/turtle* or *couch/sofa*, which I call cases of literal meaning, or conversational implicatures as just discussed, we will notice quickly that *truth-conditionality* as a criterion for semantics does not characterize the same aspects of meaning as the criterion of *conventionality*.

First, in the context of the entire semantics vs pragmatics debate, it has become clear that there is also non-conventional meaning that may nevertheless contribute to the truth conditions of an utterance. Consider, for instance, the following various examples of so-called pragmatic enrichment, taken from Carston (2002: 22) and Bach (1994: 134–5.).

(1.5) a. Paracetamol is better. [*than what?*]
b. He's too young. [*for what?*]

(1.6) a. I have eaten breakfast. [*today*]
b. You're not going to die. [*from this cut*]

In (1.5), there is some constituent missing that is needed in order for the sentence to express a complete proposition, while in (1.6) the proposition is expanded in order to express a more specific and contextually more plausible proposition. Such saturation and expansion processes are considered to be pragmatic since they are governed not by linguistic rules, but rather by conversational principles like salience, plausibility, or relevance. This can be evidenced by the fact that under the right circumstances the content may easily be enriched by something other than what is given in the brackets. However, it seems obvious that the enriched content is truth-conditionally relevant. It makes a difference in truth conditions, if, say, (1.5b) is completed with *to drink alcohol* or *to ride the roller coaster*, as it is easy to think of a situation where the former is true, but the latter is false. Pragmatic enrichment therefore constitutes an aspect of meaning in which truth-conditionality and conventionality as classification criteria pull in different directions. According to the former, they are semantic; according to the latter, they are pragmatic.

However, it is another class of examples in which the two criteria do not line up that will be the main topic that I will study in this book. There are aspects of meaning that, though being part of the conventional meaning of an expression, do not contribute to its truth-conditional content. I will call this *use-conditional meaning*. Consider, for instance, the following minimal pair (Frege 1897/1979: 140):

(1.7) a. This **dog** howled the whole night.
b. This **cur** howled the whole night.

Both sentences have the same truth-conditional content as they both are true in the case that the dog in question howled the whole night. However, (1.7b) expresses a negative speaker attitude towards the dog which is absent from (1.7a). That is, while we can substitute *cur* for *dog* without altering the truth value, it leads to infelicity in contexts in which the speaker has no negative attitude towards the dog.[3] Similar considerations apply to the following example.

(1.8) This **damn** dog howled the whole night.

Like (1.7b), the *damn* of (1.8) expresses a negative attitude towards the dog in question. In contrast to *cur*, this is its sole function as it does not make any truth-conditional contribution. What is crucial for the present discussion is that the negative attitude expressed by *cur* or *damn* is part

[3] Such pairs of expressions are called *propositional synonyms* by Cruse (2004: 155).

TABLE 1.1 Conventions vs truth conditions

	+ truth-conditional	− truth-conditional
+ conventional	descriptive meaning	use-conditional meaning
− conventional	pragmatic enrichment	conversational implicatures

of their lexical and thereby conventional meaning. According to the criterion of conventionality, this aspect of meaning should therefore fall within the scope of semantics. But under the truth-conditional picture, it is pragmatic, as it does not contribute to the truth-conditional content. Therefore, expressive adjectives like *damn* or colored expressions like *cur* constitute another case in which conventions and truth conditions as criteria for categorization yield different results.

Thus, at least for some cases, the two features drag us in different directions and therefore do not define the same aspects of meaning. As depicted in Table 1.1, we can find kinds of meaning for all possible valuations of the two features.

The choice of whether we want to base semantics on conventions or on truth conditions leads to different sets of phenomena respectively falling within the scope of semantics. Without further restriction, a truth-conditional semantics encompasses ordinary descriptive meaning as well as the pragmatic enrichment processes. In contrast, a conventional semantics deals with ordinary descriptive meaning as well with the use-conditional meaning expressed by expressions like *damn* or *cur*.

In this book, I defend a conventionalist view of semantics. I do this mainly indirectly, by developing a properly semantic approach to use-conditional meaning, but I will also provide related conceptual discussion wherever necessary. Judging just by the data, however this class of meaning seems much more amenable to a semantic treatment than does the process of pragmatic enrichment. This is also evident from the questions that will govern my investigation of use-conditional meaning, which are pretty much semantic in nature: How is the use-conditional content of an expression compositionally determined by the content of its parts? How do use-conditional expressions interact with truth-conditional expressions? In contrast, questions about pragmatic enrichment most likely concern pragmatic aspects, like how the enriched content is calculated in the utterance context, which contextual factors guide the hearer to infer it, and similar questions. Furthermore, the conventionalist view still lets us treat semantics

as an abstraction from pragmatics, since those aspects of meaning that require reference to speaker intentions and utterance contexts, namely pragmatic enrichment and conversational implicatures, are left to pragmatics. That is, I assume with Kaplan (1999: 42), that semantics should also deal with those "non-descriptive features of language that are associated with certain expressions by linguistic convention".

1.2 Use-conditional meaning

Having proposed a conventionalist approach to semantics in order to relate this book to the overall question of the scope of semantics, let us now come back to the linguistic phenomena that will be the main topic of this work. Due to the dominant truth-conditional orientation of formal semantics, expressions that conventionally contribute use-conditional content have mostly been excluded from formal analyses, even if they have been identified as problematic for the strictly truth-conditional enterprise from the very beginning. For instance, Frege mentions what he calls "colored" variants of purely descriptive expressions, like the pair *cur* and *dog* in (1.7), and other expressions that fall outside the scope of the truth-conditional approach to meaning (cf. Horn 2007). However, this does not force us to abandon the techniques and tools developed in over a century of truth-conditional semantics. Quite the contrary. As Kaplan (1999) suggested and this book will hopefully demonstrate, the methods of truth-conditional semantics can be extended to cover use-conditional aspects of meaning. What I have called conventionalist semantics is hence a rather conservative extension of the scope of semantics, by broadening our conception of meaning and adjusting our formal tools.

Consider again the expressive adjective *damn* in (1.8). Although the negative expressive attitude it displays is not part of the sentence's truth conditions, it nevertheless contributes something else to its overall meaning. For instance, suppose a context in which the speaker does not have any negative feelings towards the addressee's dog she sees for the first time, nor towards dogs in general. Now, suppose that the speaker nevertheless utters the following:

(1.9) #I did not know that you have a **damn** dog.

Even if the speaker lacks the negative attitude, the presence of *damn* does not render her utterance false. It is true as long as she did not

know that the addressee has a dog. However, her use of *damn* in such a context makes the utterance infelicitous. This means—and this is the basic idea—that even if *damn* is truth-conditionally irrelevant, it does impose conditions on the felicitous use of the sentence in which it occurs. That is, instead of analysing the meaning of *damn* with reference to its contribution to a sentence's truth conditions, we can talk about the meaning of *damn* by describing the *use conditions* for an utterance in which *damn* is used.

The idea of a theory of meaning as use is of course not new. Such theories, most famously represented in the work of the later Wittgenstein (1953), are generally conceived as being oppositional to formal theories of meaning. It was Kaplan who, notwithstanding this background, sketched in a now classic underground paper (1999) how traditional formal semantics can be enriched by taking a use-conditional perspective on certain expressions.

> For certain expressions of natural language, a correct Semantic Theory would state rules of use rather than something like a concept expressed. (Kaplan 1999: 6)

Kaplan's idea is that once we add use conditions as the basis for the meaning of some expressions to our semantic framework, such expressions become amenable to the standard techniques of formal semantics, so that "we can bring out our old toolbox, and go to work" (Kaplan 1999: 9).

1.3 Hybrid semantics

Importantly, employing the use-conditional perspective does not mean that we should abandon the truth-conditional basis. We now have two *modes of expression* in which content can be conveyed (Kaplan 1999: 16).[4] Some expressions convey only truth-conditional content (*dog*), others contribute only use-conditional content (*damn*), while other contribute both (*cur*). That is, for many complex expressions, we need to state the truth as well as the use conditions to capture their overall meaning. Therefore, we have two dimensions according to which a sentence can be evaluated:

[4] Instead of truth- vs use-conditional, Kaplan (1999) calls these modes *descriptive* and *expressive*. See also Cruse (1986: 271), who speaks of two *semantic modes*, the *propositional* and the *expressive*.

(1.10) a. "The damn dog howled the whole night" is **true** if the dog howled the whole night.

b. "The damn dog howled the whole night" is **felicitously used** if the speaker feels negatively about the dog.

I call expressions that express both truth- and use-conditional content *hybrid* expressions. Accordingly, I use the term *hybrid semantics* for a semantic framework that employs these two dimensions in order to analyse the meaning of natural language expressions. Since such a framework combines two modes of expression, hybrid semantic approaches are multidimensional, which means that linguistic expressions receive two (more or less) independent semantic values. That is, using 1 and 0 for true and false, and ✓ and ↯ for felicitous and infelicitous respectively, the semantic value for a hybrid sentence will be one of the following four tuples:

(1.11) $\langle 1, ✓ \rangle$ $\langle 1, ↯ \rangle$
$\langle 0, ✓ \rangle$ $\langle 0, ↯ \rangle$

The main question for the hybrid semantics approach is the doubled question of compositionality:

How is the *truth*-conditional meaning of a complex expression calculated on the basis of the truth-conditional and use-conditional meaning of its parts and the way they are put together?

How is the *use*-conditional meaning of a complex expression calculated on the basis of the truth-conditional and use-conditional meaning of its parts and the way they are put together?

These two questions will play a major role throughout this book and become especially important when I work Kaplan's suggestions up into a formal framework.

1.4 Goals for the book

Given this background, I formulate three goals that I want to reach in this book. The first is conceptual, the second formal and theoretical, and the third is empirical.

(i) Work out the core idea of hybrid semantics.

This involves laying out the philosophical motivations for such an approach in a little more detail. More importantly, my aim is to find a

way to provide denotational semantics for use-conditional content in a way that uses the resources from standard truth-conditional semantics.

(ii) Develop a compositional, multidimensional formal framework for hybrid semantics.

While I take the core idea of hybrid semantics to be relatively independent of any actual formal implementation, my goal is to provide a compositional formal logic, which I will call $\mathcal{L}_{\text{TU}}$, for this framework. As we will see, the influential work by Potts (2005) provides an excellent starting point for my enterprise, but neither plumbs the empirical depth of use-conditional phenomena, nor is strictly compositional.

(iii) Put the formal framework to use for actual linguistic analyses.

Even if the first two goals are rather technical in nature, I do not want the development of $\mathcal{L}_{\text{TU}}$ to be an exercise in logic. Primarily, I want it to be a useful tool for the purposes of natural language semantics. Therefore, I will test the framework by using it for analyses of two use-conditional phenomena in German, namely sentence mood and modal particles. My aim is to show that $\mathcal{L}_{\text{TU}}$ offers helpful tools to account for these phenomena and that it can provide new insights into these complex subjects.

1.5 Notes on terminology

Before I give an overview of the chapters to follow, let me make a few remarks regarding terminology. I have chosen the term *use-conditional* for the second mode of expression, in analogy to the truth-conditional first mode. Obviously, this term already derives from the approach I have in mind. Of course, the idea that the meaning of some expressions goes beyond mere truth-conditional relevance has been given many different names over the years. Amongst these are: *colored* (Frege 1897/1979), *emotive* (Jakobson 1960; Stevenson 1937), *evaluative* (Hare 1952), *expressive* (Kaplan 1999; Potts 2007b), *procedural* (Bezuidenhout 2004), *non-cognitive* (Cruse 1986), *non-descriptive* (Davis 2005; Kaplan 1999), *non-ideational* (Davis 2005), and, of course, also *use-conditional* meaning (Recanati 2004b). Not all of these terms are synonymous, but the empirical overlap between all these concepts is so great that in many cases these labels can be substituted for each other. However, out of all

these terms, *use-conditional meaning* most perfectly captures the core ideas of the approach I will develop, and, in addition, is descriptively relatively neutral in contrast to, say, *emotive* or *evaluative* meaning. Therefore, I will stick to Recanati's (2004b) suggestion, which is also mentioned by Kaplan (1999). I will often abbreviate *use-conditional content* as *u*-content and contrast it with the *truth-conditional* or *t*-content. In the same vein, expressions or constructions that contribute use-conditional content will be referred to as *UCIs*, for *use-conditional items*.

1.6 Overview of the individual chapters

In what follows, I give a brief overview of the structure of this book and short summaries of what the individual chapters are about. I will start with the empirical, theoretical, and philosophical background for understanding use-conditional meaning.

Chapter 2 In the next chapter, I elaborate on Kaplan's (1999) vision of a theory of meaning as use. I sketch the core ideas of his proposal and highlight the parallels and differences between truth and use conditions. To spell out Kaplan's ideas explicitly, I suggest that the denotations of use-conditional propositions are provided in the form of sets of contexts. The felicity of an utterance can then be defined as the inclusion of the current context in a context set, analogously to the way in which truth conditions are defined with respect to traditional propositions. Since many expressions will exhibit both kinds of content, I introduce the idea of *hybrid semantics*, according to which the overall semantic information of an expression is given by both its truth- and use-conditional content. I then continue by reflecting on Kaplan's idea of an extended notion of semantic validity. In the second half of the chapter, I provide a brief overview of the descriptive and terminological foundations for this book, where I distinguish between five kinds of use-conditional items (UCIs) which differ with respect to how they interact with other content. This survey will build the empirical testing ground for the next part of this book, in which the formal framework for hybrid semantics will be developed.

Chapter 3 Before developing my own multidimensional logic to provide a formalization of the basic ideas of hybrid semantics, I review

some **previous approaches to multidimensional meaning**. I start with Potts's (2005) logic $\mathcal{L}_{\text{CI}}$, which provides a multidimensional semantics for conventional implicatures and has been very influential. Since multidimensionality is one of the key aspects of hybrid semantics, and the category of conventional implicature has been shown to be closely related to use-conditional meaning, his formal framework provides a good starting place for developing a formal logic for hybrid semantics. I present and review his logic $\mathcal{L}_{\text{CI}}$ in detail, before assessing it by examining how it can deal with various kinds of UCIs as well as with other constructions involving use-conditional meaning. As it turns out, $\mathcal{L}_{\text{CI}}$ proves to be too restrictive. It is not able to deal with mixed UCIs. Therefore, I continue with a similar review of McCready's (2010) extension $\mathcal{L}^{+}_{\text{CI}}$ that introduces new types and composition rules. As the assessment shows, it can deal with all kinds of UCIs, but still has problems with some of the other constructions. I conclude by addressing an issue of compositionality that is common to both variants of the logic, which I collectively refer to as $\mathcal{L}^{\star}_{\text{CI}}$. This problem is rooted in the specific way the two dimensions are treated. As I will explicate, $\mathcal{L}^{\star}_{\text{CI}}$ exhibits only what I call *interpretational* multidimensionality, by which I mean that the expressions are all one-dimensional, in the sense that it is only the interpretation of an entire semantic structure (either in the form of a parsetree or a proof) that delivers multidimensional content. The procedure by which this is achieved is problematic for compositionality, because it has to take into account arbitrarily embedded constituents, instead of just the immediate ones, in order to calculate both meaning dimensions of a complex expression.

Chapter 4 On the basis of my reviews of $\mathcal{L}_{\text{CI}}$ and $\mathcal{L}^{+}_{\text{CI}}$, I develop **a multidimensional logic for hybrid semantics** that tries to solve the problems raised in Chapter 3. The new logic, which I call $\mathcal{L}_{\text{TU}}$, is capable both of dealing with the entire range of UCIs and accounting for the additional constructions that have been shown to be problematic for $\mathcal{L}^{\star}_{\text{CI}}$. The key innovation of $\mathcal{L}_{\text{TU}}$ that enables resolutions of the problems previously identified is that it embraces true multidimensionality: that is, every natural language expression is represented by a three-dimensional meaning profile in the compositional semantics. In contrast to the interpretational multidimensionality of $\mathcal{L}^{\star}_{\text{CI}}$, I call this *compositional multidimensionality*. I begin the development of $\mathcal{L}_{\text{TU}}$ by showing how the core ideas of $\mathcal{L}^{\star}_{\text{CI}}$ can naturally be reformulated and extended in such a framework and how this will help to simplify

the system by reducing the number of types and composition rules. In contrast to the previous approaches, $\mathcal{L}_{\text{TU}}$ does not impose many restrictions on possible multidimensional expressions. Instead, restrictions are formulated as conditions on the lexicon–syntax interface of the logic. Besides helping to keep the compositional semantics simple, this move makes it possible to keep the lexicon simpler too. Since the derivational system needs three-dimensional meaning profiles, however, there is a gap between lexical and compositional semantics. This gap is bridged by so-called *lexical extension rules* that expand the one- or two-dimensional lexical representations into proper three-dimensional profiles that can be used in semantic derivations. I conclude with an assessment of $\mathcal{L}_{\text{TU}}$ that parallels the assessments of $\mathcal{L}^{\star}_{\text{CI}}$, and which shows that $\mathcal{L}_{\text{TU}}$ can indeed deal with all the cases discussed before. Having set up the formal framework for hybrid semantics, the third part of this book consists of case studies in which the system is applied to analyses of two linguistic phenomena.

Chapter 5 The first case study is an examination of the notion of **sentence mood**. Sentence mood is understood as the semantic correlate of syntactic sentence types and as a restrictor of the speech acts that can be performed by an utterance. Given the traditional philosophical assumption that the meaning of a sentence can be divided into its sentential content and its mood, the main question is how these two kinds of meaning interact with each other to yield a sentence's overall content. I review three kinds of approach to this question. What differentiates these three kinds of approach is where they locate the contribution of sentence mood. Integrative approaches unite sentence mood operators and sentential content in a single semantic representation, which leads to false predictions regarding truth conditions. Implicit approaches do not use sentence mood operators, but attempt to derive the different moods directly from the denotational type of a sentence, which only works for the three main moods but not for more specialized versions. Multidimensional approaches distribute the contribution of mood and content into two different meaning dimensions, so that explicit mood operators can be used, while avoiding the problems of integrative approaches. However, this particular instance of a multidimensional approach does not explain where these operators come from. I therefore present and review Truckenbrodt's (2006b) complex approach to the syntactic constitution of sentence mood in German. Although it is shown to have some conceptual problems, these can be overcome if

his approach is transferred into the hybrid semantic framework of $\mathcal{L}_{\text{TU}}$, which is what I do at the end of the chapter.

Chapter 6 The second case study deals with **modal particles in German**. These particles constitute an entire class of functional expletive UCIs, which are characterized by peculiar syntactic and semantic properties that set them apart from other kinds of particles. After providing an overview of their properties and behavior, I show that the great majority of them can be derived directly from their use-conditional nature. In order to show this, I develop a formal analysis by using the tools of $\mathcal{L}_{\text{TU}}$ and, based on that, illustrate how several properties of modal particles fall out of this semantics and its interaction with other components. In addition, I address their interaction with the sentence mood, building on the semantics developed in Chapter 5. I argue that there are actually two kinds of modal particles, free modifiers and real sentence mood operators, and show that the restrictions to specific sets of sentence types are based on a clash of semantic types or an incompatibility of the use conditions expressed by the particles and mood operators.

Chapter 7 I use the final chapter of this book to step into **uncharted dimensions**. I highlight some topics which, I think, are fruitful fields for further investigation. I discuss two directions in which the framework of hybrid semantics and its implementation in $\mathcal{L}_{\text{TU}}$ can be elaborated or extended. First, I examine the notion of *at-issue content*, which was introduced by Potts (2005), and argue that the distinction between truth- and use-conditional content is orthogonal to the distinction between at-issue content and side issues, because the former pair cannot be reduced to one or the other of the latter. Secondly, I suggest that the relations between the different meaning dimensions in $\mathcal{L}_{\text{TU}}$ and the various kinds of updates on the discourse components like the common ground or the question under discussion that have recently been discussed should be investigated thoroughly. In addition to these possible elaborations on $\mathcal{L}_{\text{TU}}$, I briefly address two fields of linguistic analysis for which, as I hope, the conceptual and formal tools offered by the hybrid semantic framework may prove to be helpful: the diachronic analysis of pragmaticalization processes, and typological studies of use-conditional meaning.

2

The case for use-conditional meaning

2.1 Use-conditional semantics

The starting point for the formal approach to use-conditional meaning that I will develop in this book is the insights of David Kaplan. In his very influential though still not formally published paper of 1999, Kaplan sketches a vision of semantic theory that goes way beyond the borders of standard truth-conditional semantics. At the heart of his project lies the observation that

> For certain expressions of natural language, a correct Semantic Theory would state **rules of use** rather than something like a concept expressed.
>
> (Kaplan 1999: 6, my emphasis, DG)

This is of course not a new idea since it goes back to the traditions of ordinary language philosophy and is most famously articulated by Wittgenstein in his *Philosophical Investigations*:

> For a *large* class of cases—though not for all—in which we employ the word "meaning" it can be defined thus: the meaning of a word is its use in the language [. . .].
>
> (Wittgenstein 1953: §43)

However, what is important for Kaplan—something that is arguably not the case for Wittgenstein—is that the theory of meaning he envisions is still a *semantic* theory. He stresses that the conditions of use he has in mind are regulated by linguistic convention and are associated with certain expressions, and that they are therefore part of the semantics of these expressions.

> [B]y clarifying the relation between speaker intention and linguistic convention in regard to the expressive use of language, we strengthen the argument that **there are non-descriptive features of language that are associated with certain expressions by linguistic convention, and thus belong to semantics**, and not to a separable discipline,