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Modal readings of sentence connectives in German and Portuguese

1. Introduction: Temporal and modal linking of sentences

This paper[1] deals with an aspect of the semantics of sentence connectives, exemplified by German and Portuguese. Following Pasch, Brauße, Breindl & Waßner (2003) and Blühdorn, Breindl & Waßner (2004), we use the term *sentence connective* for certain elements traditionally classified as conjunctions, adverbs and particles, which share the semantic function of encoding relations between sentences. The semantic relata of sentence connectives are the meanings of the connected sentences or clauses.

Since the influential work by Sweetser (1990: 76ff.) it has been widely known that one and the same connective can encode relations of different kinds. As early as the end of the nineteenth century we find the distinction between three types of causal connections in the handbook of German grammar by Blatz (1896/1970: 708, 1128ff.):

> Der Grund kann 1. ein *realer* sein (ein *Sachgrund*, d.h. die Ursache einer Thatsache), z.B. *Wallenstein hatte rasch ein großes Heer versammelt, **denn** die Zahl der unbeschäftigten Abenteurer war bedeutend*, – oder 2. ein *logischer* (*Erkenntnisgrund*, d.h. die Begründung einer ausgesprochenen Ansicht), z.B. *Das Gemeine muß man nicht rügen; **denn** das bleibt sich ewig gleich* (Goethe), – oder 3. ein *moralischer* (*Beweggrund* zu einer Handlungsweise), z.B. *Ich muß ihn hassen; **denn** er hat mich schwer beleidigt.* (Blatz 1896/1970: 708)[2]

In the present paper we define factual reasons (*Sachgründe*) as states of affairs whose factuality results in the factuality of other states of affairs (see Blühdorn

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[2] The reason can be 1. a *real* one (a *factual reason*, i. e. the cause of a fact), for instance *Wallenstein had rounded up a big army quickly, **because** the number of unengaged adventurers was considerable*, – or 2. a *logical* one (an *epistemic reason*, i. e. the justification of an enunciated opinion), for example *Common things are not to be criticised, **because** they will always remain the same* (Goethe), – or 3. a *moral* reason (*motivation* for a behaviour), e. g., *I must hate him, **because** he has greatly insulted me*. (Translation H.B. and T.R.)

2003: 17ff.; 2005: 317; 2006: 265f.). In the following example, the factuality of watering the parsley is presented as the cause of the factuality of its luxuriance:

(1)   A salsa ficou viçosa *porque* a reguei todos os dias.   (Mateus et al. 2003: 108)

(2)   Die Petersilie ist riesig geworden, *weil* ich sie jeden Tag gegossen habe.
      'The parsley has become huge *because* I watered it every single day.'

By epistemic reasons (*Erkenntnisgründe*) we mean propositions whose truth leads to the conclusion that other propositions are also true (Keller 1995: 22ff.). In the following example, it is asserted to be true that knowing the main cause of a certain illness can help to prevent it. The truth of this proposition is used as an argument to support the truth of the second assertion, namely that the question of the cause is what is most important:

(3)   Por que ocorre a doença? Essa é a questão mais importante, *porque*, conhecendo a causa principal da doença, você poderá evitá-la.[3]

(4)   Warum kommt es zu der Krankheit? Das ist die wichtigste Frage, *denn* wenn Sie die Hauptursache der Krankheit kennen, können Sie sie vermeiden.
      'Why does the illness happen? This is the most important question, *because* if you know the main cause of the illness, you can avoid it.'

Blatz did not offer a more indepth discussion of the concept of motivation or "moral reason" (*Beweggrund*). Sweetser (1990: 56ff., 76ff.) shows that a distinction must be drawn between reported motivations that induce the actions of discourse figures and motivations that determine the communicative behaviour of the speaker and his/her partner in a linguistic interaction. In terms of grammar, the former are ordinary factual reasons, whereas the latter have a special semantic and grammatical status called *speech-act modality* by Sweetser (1990: 69ff.). In the following example, an action of the speaker (the request not to work too much) is justified with a "moral reason" (the aversion to work of the people from the state of Bahia):

(5)   Não trabalhem demais, *porque* isso baiano não gosta.   (Tom Jobim)

(6)   Arbeitet nicht zu viel, *denn* das mögen die Leute aus Bahia nicht.
      'Don't work too much *because* people from Bahia don't like it.'

Not only in causal connections but in sentence connections in general it makes a difference whether the connected semantic relata are states of affairs,

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[3]   The examples in this paper, whenever no other source is indicated, were taken from Internet sites in Portuguese found by the search engine *Google*. We thank Selma Meireles for valuable help and comments.

propositions or speech acts. Depending on the category of the semantic relata, the resulting complex sentences have different grammatical properties (see Blühdorn 2005: 317ff.; 2006: 265ff.; 2008a). Before going into more detail, we will provide some additional explanations of the basic concepts to be used in this paper.

States of affairs are temporal objects (see Blühdorn 2003: 18; 2004: 186). They have temporal extensions and are linked to each other by temporal relations. Sentence connections whose semantic relata are states of affairs often display a characteristic distribution of verbal tenses (*consecutio temporum*) (see Lehmann 1988: 205). Connectives which link states of affairs interact semantically with temporal expressions of all kinds. The relation encoded by the connective (similarity, situating, condition, cause; for more details of this typology see Blühdorn 2003: 20; 2008b) concerns the factuality or non-factuality of the connected states of affairs in the dimension of time. Extending traditional terminology, connections between states of affairs can therefore be called temporal connections.

Propositions are logical or epistemic objects (see Lyons 1977: 443ff.). They are logically extended (i. e., they have areas and degrees of logical validity), and they are linked to each other by epistemic (logical) relations (implication, equivalence, complementarity etc.) (see Blühdorn 2008b). Sentence connections whose semantic relata are propositions often display a characteristic distribution of verbal moods (e. g., the requirement of subjunctive mood in a subordinate clause). Connectives which link propositions interact semantically with epistemic expressions of all kinds (epistemic sentence adverbs, modal particles, modal auxiliaries etc.). The relation encoded by the connective (similarity, situating, condition, cause; see Blühdorn 2003: 20; 2008b) concerns the truth or falsity of the connected propositions. Connections between propositions have therefore been called epistemic connections (see Sweetser 1990: 76ff.; Keller 1995).

Speech acts are ethical, i. e., deontic objects. They take place in contexts of social norms of conduct and individual options and goals in social interaction. They are deontically extended (i. e., they have areas and degrees of permittedness, forbiddenness etc.), and they are linked to each other by deontic relations (compatibility, conflict, means, purpose etc.) (see Blühdorn 2008b). Sentence connections whose semantic relata are speech acts often display a characteristic distribution of sentence moods (declarative vs. interrogative vs. imperative). Connectives which link speech acts interact semantically with deontic expressions of all kinds (deontic sentence adverbs, modal particles, modal auxiliaries etc). The relation encoded by the connective (similarity, situating, condition, cause; see Blühdorn 2003: 20; 2008b) concerns the desirability or non-desirability of the connected speech acts. Connections

between speech acts can therefore not only be called illocutionary connections (see Sweetser 1990: 76ff.), but also deontic connections (see Truckenbrodt 2006: 263ff.; Blühdorn 2008b).

The truth values of propositions and the values of desirability of speech acts negotiated in epistemic and deontic-illocutionary sentence connections are calculated basically in terms of necessity and possibility (see Kratzer 1991). They are grammatically expressed by means of sentence and verb moods, modal verbs and auxiliaries, modal adverbs and particles and other similar linguistic means. It is therefore reasonable to subsume epistemic and deontic-illocutionary connections under the general label of modal connections (see Keller 1995: 23f.), as opposed to temporal (or "circumstantial", see Kratzer 1991: 640) connections, in which the factuality or non-factuality of states of affairs in temporal contexts is discussed.

The semantic structure of a declarative sentence can be described by the general formula in (7):

(7)   (i, d, A (e, v, P (t, f, S)))

This formula can be paraphrased as in (8):

(8)   A speaker performs a speech act A in an interactional context i. For this context, a value of desirability d is assigned to the speech act. The speech act consists in asserting a proposition P, to which a truth value v (for *verity*) is assigned for the epistemic context e. The proposition describes a state of affairs S, to which a value of factuality f is assigned for the temporal context t.

The formula can be applied to example (9) as shown in (10):

(9)   Hm, Maria ist vielleicht gerade nicht zu Hause.
       'Hm, maybe Maria is not at home right now.'

(10)   The speaker utters the sign string *Maria ist vielleicht gerade nicht zu Hause*. The initial interjection *hm* evaluates this utterance (A) in relation to the given interactional context (i), e. g. as an intentional ("desired" – d) reply to the question why Maria does not answer the phone. By making the utterance, the speaker asserts the proposition (P) 'Maria is not at home right now', but in the given epistemic context (e) s/he shows uncertainty with respect to the truth of this proposition. The epistemic sentence adverb *vielleicht* [maybe] indicates that it is a possibility considered by the speaker, but that s/he is not quite sure about it (v). The proposition describes the state of affairs (S) MARIA IS AT HOME and assigns to it the value "non-factual" (f) for the temporal context in which the utterance is made (*right now* – t).

Sentences can be linked with other sentences at the three levels of their semantic structure: at the temporal, the epistemic and the deontic-illocutionary

level (see Lehmann 1988: 189ff.). The sentences they are linked to (the "anchor" sentences, as we will call them) provide the respective temporal, epistemic or deontic-illocutionary context (t, e or i) to which a value is assigned. As an illustration we consider three variants of example (9):

(9a)   Hm, Maria ist vielleicht gerade nicht zu Hause, *weil* sie einkaufen gegangen ist.
       'Hm, maybe Maria is not at home right now *because* she has gone shopping.'

(9b)   Hm, Maria ist vielleicht gerade nicht zu Hause, *denn* um diese Zeit hat sie dienstags Sport.
       'Hm, maybe Maria is not at home right now, *since* she does sports at this time on Tuesdays.'

(9c)   Hm, Maria ist vielleicht gerade nicht zu Hause, *obgleich* ich mir da nicht so sicher bin.
       'Hm, maybe Maria is not at home right now, *although* I am not quite sure about this.'

One possible interpretation of (9a) is that the speaker has observed that the state of affairs (S) MARIA IS AT HOME is not factual at the time of utterance. The cause of this might be the factuality of the state of affairs MARIA HAS GONE SHOPPING. In this reading, the subordinate "anchor" clause *weil sie einkaufen gegangen ist* provides the temporal context (t) for the "anchored" clause. This context is another state of affairs whose factuality may have caused the non-factuality of Maria's being at home. The most probable reading of (9b) is that the speaker knows that the proposition 'Maria does sports at this time on Tuesdays' is true and that this knowledge leads him/her to conclude that the proposition (P) 'Maria is not at home right now' may also be true. The "anchor" clause *denn um diese Zeit hat sie dienstags Sport* provides the epistemic context (e) for the conclusion encoded by the "anchored" clause. In (9c) the speaker utters the supposition that Maria is not at home at the time of utterance. S/he also refers to a circumstance which diminishes the desirability of this speech act (A), but without entirely blocking it: s/he is not sure about the truth of the supposition. This circumstance, encoded by the "anchor" clause *obgleich ich mir da nicht so sicher bin*, provides the deontic context (i) for the speech act of uttering the supposition, performed by means of the "anchored" clause.

In all three examples the semantic relations between the "anchored" clause and its respective "anchor" clauses are encoded by connectives. In German, as well as in Portuguese, the same semantic relations can also be encoded by verb lexemes, by certain verb forms (participles, gerund forms), by nouns and by other linguistic means. Those other means will not be considered in this paper, which concentrates exclusively on connectives.

2. Modal use of connectives in grammars of Portuguese

Sweetser's distinction of different levels of sentence connection has, as yet, not been fully integrated into the grammars of German (some of the few authors who mention it are Zifonun et al. 1997: 2296f. and Duden 2005: 1084ff.), nor does it play a significant role in the grammars of Portuguese.

Bechara (1999: 493) states, similarly to Blatz (1896/1970), that causal subordinate clauses can introduce "a causa, o motivo, a razão do pensamento" [the cause, the motive, the reason of the thought], but does not explain these concepts in more detail and does not provide separate examples. Peres & Mascarenhas (2006: 165f.) cite a few other traditional grammars of Portuguese which make the same distinction of three types of causal connections, among them Barros (1961).

The *Nomenclatura Gramatical Brasileira* of 1959 and the *Nomenclatura Gramatical Portuguesa* of 1967 include in their typology of sentence connections two classes which are conceptually related to Sweetser's epistemic and speech-act connections: conclusive and explicative connections (see Cunha & Cintra 2009: 595, 611f.; Peres & Mascarenhas 2006: 158ff.). But traditional Portuguese grammarians do not seem to have been interested in exploring in depth the semantic peculiarities of those connections. The main focus of interest used to be on their syntactic behaviour on the scale between coordination and subordination. The fact that conclusive and explicative connections link propositions or speech acts, while other classes of connections link states of affairs, passed unobserved until very recently or was at least not taken as a starting point for further investigation.

This is also true for Gärtner (1998), who does not distinguish between connections of states of affairs, propositions or speech acts, even though a considerable part of his grammar is dedicated to sentence connections. In his chapter on complex sentences (1998: 337–582) he focuses exclusively on relations between states of affairs (temporal objects). Consequently he investigates in detail the sequence of tenses in the connected clauses (also see ibid.: 449ff.), whereas modality is treated in less depth.

Mateus et al. (2003), when dealing with the semantic relata of sentence connections, always speak of propositions and not of states of affairs, or of speech acts. For causal connections (2003: 108) they distinguish between temporal cause-effect relations, inferential evidence-conclusion relations, and relations between acts and their motives, but the examples they give in order to illustrate these types of relations are not very helpful:

(11)   A salsa ficou viçosa *porque* a reguei todos os dias.
      'The parsley has become huge *because* I watered it every single day.'

(12)   *Visto que* choveu nas alturas certas, a colheita deste ano é excepcional.
      '*Given that / As* it rained at the right times, the harvest this year is outstanding.'

(13)   *Como* os alunos estavam cheios de trabalho esta semana, adiei o teste.
      '*As* the students had so much work to do this week I postponed the test.'

Example (11) clearly shows a temporal relation between states of affairs. In example (12), an epistemic reading (connection of propositions) does not seem plausible. From knowing that it rained at the right times it is not possible to conclude that the harvest is outstanding. A temporal reading of (12), as paraphrased in (12a), seems much more probable:

(12a) This year an outstanding harvest has occurred, and this state of affairs was caused by another state of affairs, namely that it rained at the right times.

Modal readings, in contrast, are preferable for the variants in (12b) and (12c):

(12b) Visto que choveu nas alturas certas, a colheita deste ano *deve ser* excepcional.
      'Given that / As it rained at the right times, the harvest this year *must be* outstanding.'

(12c) Visto que *não* choveu nas alturas certas, a colheita deste ano é *mesmo* excepcional.
      'Considering that it *didn't* rain at the right times, the harvest is *actually* outstanding.'

In (12b) the modal auxiliary construction *deve ser* indicates that a conclusion is drawn (epistemic connection). In (12c) the speech act of evaluating the harvest is contrasted with conditions which do not really seem to support the selected positive value (deontic-illocutionary concessive connection).

Example (13) is intended by Mateus et al. to illustrate the justification of an act by a motive. The relevant act is the postponing of the test by the speaker. This act, however, is only reported and not performed in the example. Therefore the causal connection cannot be interpreted as a justification of a speech act. Instead, a temporal reading as in (13a) must be chosen:

(13a) The speaker knew that the students had too much work to do, and this state of affairs made him put into practice another state of affairs, namely the postponing of the test.

In another section, under the heading *conexões inferenciais* [inferential connections], Mateus et al. (2003: 97) deal with sentence connections which present the truth of a proposition as evidence for or an argument in favour of the truth of another proposition. The other proposition, then, is a conclusion drawn from the first. They give three examples, two of which do not, in fact,

allow inferential (epistemic) readings. For the third one an inferential reading is possible, but not preferred:

(14) Estava mau tempo *e por isso* decidimos ficar em casa.
      'The weather was bad and *therefore* we decided to stay at home.'

(15) Chegámos atrasados, *pois* está um trânsito infernal.
      'We arrived late *because* the traffic is terrible.'

(16) O João está constipadíssimo e *portanto* não vem à festa.
      'John has a bad cold and *therefore* he will not come to the party.'

In the first two examples the connections are clearly temporal. From observing the weather or the road traffic, it is not possible to draw conclusions about one's own staying at home or arriving late in the past. The weather and the traffic in these examples are not to be interpreted as evidences for the truth of any propositions, but simply as states of affairs which caused other states of affairs to happen, in this case staying at home and arriving late (similar observations in Peres & Mascarenhas 2006: 151f.).

In the third example an epistemic reading is possible: from knowledge about the health of a person it is possible to make predictions of whether this person will come to a party. Without any context, however, a temporal reading is preferable also for this example, since John having a cold is probably the state of affairs which prevents his going to the party from happening.

Sweetser's distinction of the different levels of connection is explicitly taken up and elaborated for Portuguese by Neves (2000: 804ff.). In her chapter on causal connections she distinguishes between the linking of states of affairs (*estados de coisas*), of propositions (*proposições*) and of speech acts (*atos de fala*). Here are two of her examples:

(17) Não deve ter havido nada *porque* seria a primeira pessoa a tomar conhecimento disto.
      'There should not have been anything (it must have been nothing), *because* I would have been the first person to know about it.'

(18) Vamos cantar pra Santa Clara uma reza pra ela não deixar chover hoje de noite. Você canta comigo, *porque* Santa Clara gosta muito de crianças.
      'Let us sing a prayer for Saint Clara not to give us rain tonight. You sing along with me, *because* Saint Clara loves children.'

In (17) the knowledge of the speaker that s/he would have been the first person to be informed is presented as an argument for supposing that nothing serious happened. This is a clear case of an epistemic connection between two propositions. One proposition is considered to be true, and that leads to the conclusion that the other one is also true. A plausible interpretation of example

(18) is that the speaker asks her child to sing along with her and that Saint Clara's sympathy for children serves as a justification or motive for this speech act. Here the clauses are linked at the deontic-illocutionary level.

References to Sweetser's distinction of the levels of connection can also be encountered in some of the papers in volumes VII (Neves 1999) and VIII (Abaurre & Rodrigues 2002) of the publications resulting from the research project *Gramática do Português Falado* [Grammar of Spoken Portuguese], e. g., in the papers by Camacho on additive, by Pezatti on alternative, and by Neves on causal, conditional and concessive sentence connections (all in Neves 1999: 351–591) as well as in Pezatti's (2002) article on conclusive sentence connections.

Another recent work which makes explicit reference to Sweetser is the article on sentence connections in Portuguese by Peres & Mascarenhas (2006). But the typology of connections proposed by those authors (2006: 146ff.) follows the tradition of Portuguese grammar handbooks in focussing on predominantly syntactic criteria and arranging the classes of connections on a gradient between juxtaposition and subordination. The semantic category of the connected relata does not play a central role in that approach.

3. Tests for distinguishing between temporal and modal readings of connectives

The discussion of examples (12) to (16) from Mateus et al. (2003) has shown that it is not always easy to distinguish whether two clauses are linked at the temporal or at a modal level. Many sentence connections have more than one reading. Thus example (19) can be interpreted as a temporal, an epistemic or a deontic-illocutionary connection. The different readings can be distinguished by translating the example into German, as in (19a–c):

(19) *Desde que* ele está sujeito a ser consultado sobre todo e qualquer assunto, deve ter uma base sólida de conhecimento em geral.   (Neves 2000: 803)
      '*Since* he might be consulted on all and every subject, he must have a solid general knowledge.'

(19a) *Seit* es ihm passieren kann, dass er über alle möglichen Themen befragt wird, benötigt er ein solides Allgemeinwissen.
      '*Since* he was given a position where he might be consulted on all and every subject, he needs a solid general knowledge.'

(19b) *Da* es ihm passieren kann, dass er über alle möglichen Themen befragt wird, wird er wohl ein solides Allgemeinwissen haben.
'*Since/as* he might be consulted on all and every subject, I suppose he has a solid general knowledge.'

(19c) *Da* es ihm passieren kann, dass er über alle möglichen Themen befragt wird, verlange ich von ihm, dass er ein solides Allgemeinwissen hat.
'*Since/as* he might be consulted on all and every subject, I want him to have a solid general knowledge.'

The German connective *seit*, in contrast to *since* in English and *desde que* in Portuguese, can only encode temporal connections. Thus (19a) requires a temporal reading: the beginning of the time interval in which it is factual that the person referred to can be consulted on all and every subject coincides with the beginning of the time interval in which it is factual that this person needs a solid general knowledge. In this case, the modal auxiliary construction *deve ter* in (19) has been interpreted in the sense of Kratzer's (1991: 640) "circum-stantial modality" and has therefore been translated by the verb *benötigen* [to need].

The translations in (19b) and (19c) use the conjunction *da* [as] instead of *seit*. Both are possible equivalents of *desde que*, but *seit* and *da* are specialized on different types of connections and, therefore, reveal semantic differences which remain implicit with *desde que* (and with *since*). The conjunction *da* (see Blühdorn 2006: 259ff., 272ff.; 2009) is hardly ever used for temporally situating connections in contemporary German. In the great majority of cases it encodes conditional or causal connections and, more specifically, modal ones (for details of the typology of relations see Blühdorn 2003: 13ff.).

(19b) and (19c) have identical translations of the subordinate clause, but differ in the translation of the main clause. In (19b) *deve ter* has been translated by a modal auxiliary construction. *Werden* [will] together with the epistemic particle *wohl* [possibly] suggests an epistemic interpretation: the speaker knows that the person referred to can be consulted on all and every subject, and this information leads him/her to suppose that the person has a solid general knowledge.

In (19c) *deve ter* has been translated by the performative main verb *verlangen* [to demand]. A modal auxiliary construction with *müssen* [must], perhaps with the additional deontic particle *unbedingt* [definitely], would also be appropriate to achieve the same deontic reading: the fact that the person referred to can be consulted on all and every subject is the motive which makes the speaker demand that this person should have a solid general knowledge.

As we have seen, *desde que* in (19) is ambiguous. It can be read as a connective at the temporal, the epistemic or the deontic-illocutionary level.

Which reading is chosen in each individual case depends strongly on the context of use. Within a narrative context such as an overview of a person's professional career, a temporal reading might be most suitable. In a context in which the knowledge of a person is being discussed, an epistemic reading might be preferable. And if the context is about the speaker's expectations with respect to a person's capacities, a deontic-illocutionary reading might be most appropriate.

While many sentence connections in empirical data are ambiguous as to the semantic level of linking, many others do not allow for more than one reading – partly for contextual and partly for grammatical reasons. It is therefore important to discuss how sentence connections can be tested with respect to possible readings. The availability of reliable test procedures is an indis-pensable requirement for integrating the distinction between temporal and modal uses of sentence connectives into the grammaticography of Portuguese and German. In what follows, we will briefly present four test procedures which can be used for this purpose (for more details see Blühdorn 2005: 317ff.; 2006: 265ff.; 2008a).

3.1. Paraphrasing

In the previous sections we used paraphrases which contained the key terms *state of affairs/proposition/speech act*, *cause/evidence/motive*, and *factuality/ truth/desirability* in order to distinguish between the different readings of sentence connections. Thus, clauses which are temporally connected can be embedded into the formula *it is (not) the case that S* or *S has (not) happened*, without bringing about a change of descriptive meaning (in the sense of Lyons 1977: 50f., 197). If modally connected clauses are embedded into these formulas, their descriptive meaning as well as their speech-act meaning will change significantly. Clauses linked by an epistemic connection can be embedded into the formula *the speaker believes (does not believe) that P* or *P is (not) true*; clauses linked by a deontic-illocutionary connection can be embedded into the formula *it is (not) desirable that A* or *the speaker wants (does not want) A*. Such paraphrases make explicit part of the speech-act meaning of the sentences, without changing their descriptive meaning.

(20a) is a paraphrase for example (19) which forces a temporal reading, (20b) is a paraphrase for the same connection that forces an epistemic interpretation, and (20c) is a paraphrase that forces a deontic-illocutionary interpretation:

(20a) *Desde que* é o caso que ele está sujeito a ser consultado sobre todo e qualquer assunto, é também o caso que ele necessita de uma base sólida de conhecimento em geral.
'*Since* it is the case that he might be consulted … it is also the case that he needs…'

(20b) *Desde que* é verdade que ele está sujeito a ser consultado sobre todo e qualquer assunto, pode-se supor que ele tem uma base sólida de conhecimento em geral.
'*As* it is true that he might be consulted …, it can be supposed that he has…'

(20c) *Desde que* ele está sujeito a ser consultado sobre todo e qualquer assunto, é desejável (o locutor exige) que ele tenha uma base sólida de conhecimento em geral.
'*As* he might be consulted …, he is required to have / the speaker wants him to have…'

3.2. Scope of negation and modal adverbs

A second important test concerns the scope of semantic operators. Temporal connectives can enter into the scope of negation and of modal sentence adverbs, while modal connectives must remain outside the scope of such operators. For illustration, let us look at example (21):

(21) A salsa *não* ficou tão viçosa(,) *porque* a reguei todos os dias.
'The parsley has *not* become so huge(,) *because* I watered it every single day.'

There are three different readings available for (21). The first one is that the speaker watered the parsley every single day, that the parsley has become huge, but that the former was not the cause of the latter:

(21a) (não porque (reguei (a salsa))$_S$ (ficou tão viçosa (a salsa))$_S$)$_P$[4]
      (not because (I watered (the parsley))$_S$ (has become so huge (the parsley))$_S$)$_P$

In this reading the connective is within the scope of negation. The connected relata must be states of affairs (S), i. e., the connection is temporal. The sentence as a whole is one proposition (P) (see Peres & Mascarenhas 2006: 117). It is denied that the fact of watering was the cause of the occurrence of the luxuriance. If this reading is intended, no comma between the connected clauses is used in written Portuguese (see Luft 1996: 63f.). In spoken Portuguese the whole sentence is realized as one intonation phrase. An

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[4] In order to illustrate scope relations, we use simple formulas which represent the hierarchy of operators and operands by bracketing and linear sequence, but which remain as close as possible to natural surface structure in all other respects. The subscripts S and P indicate the semantic levels of states of affairs and propositions.

(ascending) secondary stress can fall, e. g., on the negative particle *não* in the main clause; the (descending) focal stress can be put on the verb *reguei* in the subordinate clause.

The second interpretation of (21) is that the speaker watered the parsley every single day, that the parsley has not become so huge and that the excess of water was the cause of the failure to become huge:

(21b) (porque (reguei (a salsa))$_S$ (não ficou tão viçosa (a salsa))$_S$)$_P$
      (because (I watered (the parsley))$_S$ (has not become so huge (the parsley))$_S$)$_P$

In (21b) the connective is outside the scope of negation. Negation only has scope over the main clause. In this reading, the connected relata can, again, be states of affairs, i. e., the connection can be established at the temporal level. Then the sentence as a whole is one proposition. It is asserted that the fact of watering was the cause of the parsley's not becoming huge. If this reading is intended, there is a tendency to separate the connected clauses by a comma in written Portuguese. In spoken Portuguese the whole sentence can still form one single intonation phrase. In this case, however, the secondary stress will not be placed on the negative particle *não*, but rather on the predicative *viçosa*, and the focal stress will tend to fall on *dias*.

A third interpretation of (21) is that the speaker, who knows that s/he watered the parsley every day, concludes that it can therefore not have become very huge. In this reading, the knowledge of the excessive watering serves as evidence which supports the speaker's conclusion:

(21c) porque (sei que (reguei (a salsa))$_S$)$_P$ (concluo que (não ficou tão viçosa (a salsa))$_S$)$_P$
      because (I know that (I watered (the parsley))$_S$)$_P$ (I conclude that (has not become so huge (the parsley))$_S$)$_P$

In (21c) the connective is not only outside the scope of negation, but also outside the connected propositions, i. e., the connected relata are propositions and not states of affairs. The connection is therefore at the epistemic level. If this reading is intended, school grammars of Portuguese require a comma between the connected clauses (see Luft 1996: 63). In spoken Portuguese the clauses are realized as separate intonation phrases. In the first intonation phrase, focal stress can be placed on *ficou*, in the second one it can fall on *dias*.

The discussion has shown that in temporal connections the connective can be within the scope of negation. This is not possible in epistemic, nor in deontic-illocutionary connections.

Similar observations can be made for modal sentence adverbs such as *talvez* in (22). For such adverbs, only the first and third readings are available, i. e., in a temporal connection a modal sentence adverb cannot be within the scope of

the connective. For lack of space we confine ourselves here to giving the formulas for the different readings:

(22) *Talvez* a salsa tenha ficado tão viçosa(,) *porque* a reguei todos os dias.
      '*Maybe* the parsley has become so huge(,) *because* I watered it every single day.'

(22a) (talvez porque (reguei (a salsa))$_S$ (tenha ficado tão viçosa (a salsa))$_S$)$_P$
      (maybe because (I watered (the parsley))$_S$ (has become so huge (the parsley))$_S$)$_P$

(22b) #(porque (reguei (a salsa))$_S$ (talvez tenha ficado tão viçosa (a salsa))$_S$)$_P$[5]
      #(because (I watered (the parsley))$_S$ (maybe has become so huge (the parsley))$_S$)$_P$

(22c) porque ((reguei (a salsa))$_S$)$_P$ (talvez (tenha ficado tão viçosa (a salsa))$_S$)$_P$
      because ((I watered (the parsley))$_S$)$_P$ (maybe (has become so huge (the parsley))$_S$)$_P$

In written Portuguese a comma is used between connected clauses if the main clause contains a negative element or a modal sentence adverb which does not have scope over the connective. No comma is used if the connective is within the scope of negation or of a modal sentence adverb. Thus, modally connected sentences usually have a comma in written Portuguese, while temporally connected ones do not (see Luft 1996: 63f.).

   We can use example (17), which contains a negative particle in the main clause, as an additional illustration of the scope test:

(17) *Não* deve ter havido nada *porque* seria a primeira pessoa a tomar conhecimento disto.
      'There should *not* have been anything/nothing, *because* I would have been the first person to know about it.'

If a temporal reading is available for this example, then the connective should be able to fall within the scope of negation:

(17a) (deve não porque (seria (a primeira pessoa a x))$_S$ (ter havido (nada))$_S$)$_P$
      (should not because (I would have been (the first person to x))$_S$ (have been (nothing))$_S$)$_P$

In such a reading of (17), the interpreter would have to presuppose that nothing happened. The question under discussion would be whether the fact that nothing happened was caused by the fact that if anything had happened, then the speaker would have been the first to know about it. (17) would then be a means of uttering the belief that there is no such relation of causality. Such a

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5 We use the # symbol to mark expressions that are semantically deviant. (22b) is deviant because a modal sentence adverb such as *talvez* cannot be part of a description of a state of affairs.

reading of (17) is theoretically possible, but it seems very unlikely that a real-life context could be found in which it is appropriate. In order to indicate that such a reading is intended, the speaker would have to realize the whole sentence as one intonation phrase. An ascending secondary stress would have to be put on the negative particle *não*, and the focal stress on *conhecimento*.

   Thinking of real-life situations, it seems to be much more probable that (17) would occur in a context in which the question under discussion is how the speaker comes to suppose that nothing has happened. In this case the connective cannot be within the scope of negation. Consequently, only a modal reading is available:

(17c) porque ((seria (a primeira pessoa a x))$_S$)$_P$ (deve (não ter havido (nada))$_S$)$_P$
      as ((I would have been (the first person to x))$_S$)$_P$ (it should (have been (nothing))$_S$)$_P$

In order to guarantee this reading, according to traditional grammar, (17) should have been written with a comma.

   For structural reasons, the scope test can only be applied to connections in which the subordinate clause follows the main clause. Connections in which it precedes the main clause such as (19) must first be reordered as in (23a/b):

(23a) Ele *não* deve ter uma base sólida de conhecimento em geral, *desde que / visto que* ele está sujeito a ser consultado sobre todo e qualquer assunto.
      'He does *not* have to have a solid general knowledge, *since/as* he might be consulted on all and every subject.'

(23b) *Talvez* ele deva ter uma base sólida de conhecimento em geral, *desde que / visto que* ele está sujeito a ser consultado sobre todo e qualquer assunto.
      '*Maybe* he must have a solid general knowledge, *since/as* he might be consulted on all and every subject.'

3.3. Verb tenses and temporal adjuncts

In temporal connections, all temporal elements contained in the clauses, such as verb tenses, temporal adverbs, and temporal prepositions, are semantically related to each other and build up a coherent chronological system (see Lehmann 1988: 205). In modal connections, the verb tenses and other temporal elements of each clause relate independently to the time of utterance.

   For illustration, let us first have a look at the tenses in example (24):

(24) Visto que *choveu* nas alturas certas, a colheita deste ano *é* excepcional.
      [*chover*-perfect preterit]   [*ser*-simple present]
      'Given that / As it *rained* at the right times, the harvest this year *is* outstanding.'

A temporal interpretation of (24) depends on the assumption that it rained in a first moment and that the harvest became outstanding at a later point in time. The tenses in the clauses are distributed correspondingly: *pretérito perfeito* [past tense] in the subordinate clause and present tense in the main clause. An inverted chronology of the states of affairs, indicated by a different distribution of tenses, as e. g. in (24a), would not be compatible with our knowledge of the world:

(24a) Visto que *vai chover* nas alturas certas, a colheita deste ano *é* excepcional.
      [*chover*-future]   [*ser*-simple present]
    'Given that / As it *will rain* at the right times, the harvest this year *is* outstanding.'

A temporal reading of (24a) is inadequate, but depending on the context, an epistemic or a deontic-illocutionary reading may be available.

In (25), the same distribution of tenses as in (24a) provides a chronology which is compatible with a temporal reading of the connection:

(25) Já que *vai chover* durante o fim-de-semana, *passamos* por um posto de gasolina para meter água no reservatório do limpa-parabrisas.
      [*chover*-future]   [*passar*-simple present]
    'As it *will rain* at the weekend, we *go* to a petrol station to put some water into the windscreen-wiper reservoir.'

A possible interpretation of (25) is that filling up the water reservoir is meant as a preparation for a rainy weekend. In this example, an inverted chronology, indicated by a tense distribution as in (24), would also be compatible with a temporal reading. But then a purpose interpretation of the connection is quite improbable. In (25a) the rainy weather rather appears to be the cause that leads to filling up the water reservoir:

(25a) Já que *choveu* durante o fim-de-semana, *passamos* por um posto de gasolina para meter água no reservatório do limpa-parabrisas.
    [*chover*-perfect preterit]   [*passar*-simple present]
    'As it *rained* at the weekend, we *go* to a petrol station to put some water into the windscreen-wiper reservoir.'

These examples show how the reconstruction of the chronology of states of affairs affects the interpretation of temporal connections. As long as a coherent chronology can be construed in accordance with general world knowledge, temporal readings of connections are possible. Otherwise they are excluded.

(24b) is a variant of (24) for which an epistemic reading of the connection is preferable:

(24b) Visto que *choveu* nas alturas certas, a colheita deste ano *deve ser* excepcional.
    [*chover*-perfect preterit]   [modal auxiliary *dever*-simple present]
    'As it *rained* at the right times, the harvest this year *must be* outstanding.'

In this variant, the tenses in the clauses are not related to each other. They relate independently to the time of utterance. In conditional and causal connections, the tense of the verb in the main clause indicates the moment in which the speaker draws the relevant conclusion. It is typically a present tense form. Past tenses only occur together with deictic shifts such as in reported speech. The tense of the verb in the subordinate clause is more flexible. It encodes the temporal relation between the time of utterance and the source of the evidence which makes the speaker draw the conclusion.

Similar observations hold for adverbial adjuncts of time. In temporal connections, they not only influence the interpretation of the clause of which they are a constituent, but also the interpretation of the sentence as a whole:

(26) Como os alunos estavam cheios de trabalho *esta semana*, adiei o teste.
    'As the students had so much work to do *this week* I postponed the test.'

(27) Foi isso que me veio à mente *esta manhã*, enquanto eu caminhava.
    'This was what came to my mind *this morning* while I was out for a walk.'

Example (26) suggests that the test was postponed in the same week in which the students had so much work to do, and (27) means that the walk happened on the same morning on which the idea came to the mind of the speaker.

In modal connections, in contrast, temporal adverbs can only influence the interpretation of clauses of which they are constituents:

(28) Como os alunos estavam cheios de trabalho *no mês passado*, devem estar bem cansados.
    'As the students had so much work to do *last month* they must be very tired.'

(29) Uma das vítimas morreu *esta manhã*, enquanto a outra faleceu *na noite de sexta-feira*.
    'One of the victims died *this morning*, while the other one perished on *Friday night*.'

In (28), the supposition that the students are tired is not made in the month before the moment of the utterance, but at the moment of the utterance itself. In (29) both clauses have a temporal adjunct of their own. Here the connective *enquanto* [while] cannot be understood in the sense of a temporal overlap of the states of affairs described. It must be read in the modal sense of comparing the propositions with respect to their truth.

3.4. Cleft constructions

Subordinate clauses linked by a temporal connection have the syntactic status of adverbial adjuncts. In many cases they can be separated from the rest of the main clause by a cleft construction in which the subordinate clause is left-dislocated and the rest of the main clause takes the form of a *que*[that]-clause. The two parts are linked by a form of the verb *ser* [to be] (see Reichmann 2005: 25–35):

(30) *É porque a reguei todos os dias* que a salsa ficou viçosa.
       '*It is because I watered it every single day* that the parsley has become huge.'

(31) *É desde que está sujeito a ser consultado sobre todo e qualquer assunto* que ele precisa de uma base sólida de conhecimento.
       '*It is since he might be consulted on all and every subject* that he must have a solid general knowledge.'

(32) *Foi enquanto eu caminhava esta manhã* que isso me veio à mente.
       '*It was while I was out for a walk this morning* that this came to my mind.'

In contrast, subordinate clauses linked to the main clause by a modal connection cannot be separated by cleft constructions (see Kortmann 1996: 29):

(33) #*Foi enquanto uma das vítimas faleceu na noite de sexta-feira* que a outra morreu esta manhã.
       '*It was while one of the victims perished on Friday night* that the other one died this morning.'

(34) **É porque isso baiano não gosta* que não trabalhem demais.
       '*It is because people from Bahia don't like it* that don't work too much.'

(35) *É porque Santa Clara gosta muito de crianças* que você canta comigo.
       '*It is because Saint Clara loves children* that you sing along with me.'

(36) #*É porque, conhecendo a causa da doença, é possível evitá-la* que essa é a questão mais importante.
       '*It is because, if you know the cause of the illness, you can avoid it* that this is the most important question.'

(37) #*É porque eu seria a primeira pessoa a tomar conhecimento disto* que não deve ter havido nada.
       '*It is because I would have been the first person to know about it* that it must have been nothing.'

(33) is semantically deviant. In the cleft construction only a temporal reading would be available, but a temporal reading of the connective *enquanto* [while] (which indicates a relation of simultaneity) would be incompatible with the

temporal adjuncts in the connected clauses and is therefore blocked. (34) is syntactically deviant because commands cannot be embedded in *que*-clauses. For the same reason *você canta comigo* [you sing along with me] in (35) cannot be interpreted as a request, but only as a description of a state of affairs. While the original sentence (18) allows a deontic-illocutionary reading of the connection, the cleft construction in (35) can only be read temporally.

Examples (36) and (37) are semantically deviant in the above wording, but they can be reformulated in such a way that temporal readings of the connections become possible:

(36a) *É porque, conhecendo a causa da doença, é possível evitá-la* que eu considero essa questão tão importante.
       '*It is because, if you know the cause of the illness, you can avoid it* that I regard this question as so important.'

(37a) *É porque eu seria a primeira pessoa a tomar conhecimento disto* que eu acredito que não houve nada.
       '*It is because I would have been the first person to know about it* that I believe it was nothing.'

Unlike in the original sentences (3) and (17), no direct conclusions are drawn in (36a) and (37a). Instead, the conclusions and the evidence on which they were based are reported. In this case the clauses are connected at the temporal level (similar examples in Peres & Mascarenhas 2006: 153f.), which can be recognised, among other things, by the fact that the tenses are now related to each other and can be changed together:

(36b) *Era* porque, conhecendo a causa da doença, é possível evitá-la que eu *considerava* essa questão a mais importante.
       '*It was* because, if you know the cause of the illness, you can avoid it that I *regarded* this question as so important.'

(37b) *Foi* porque eu seria a primeira pessoa a tomar conhecimento disto que eu *acreditei* que não houve nada.
       '*It was* because I would have been the first person to know about it that I *believed* it had been nothing.'

"Anchor" clauses of modal connections are generally excluded from left-dislocation in cleft constructions. If a cleft construction is possible without a change of descriptive or speech-act meaning, then it is clear that the clauses are connected temporally. But not all temporal connections are equally compatible with cleft constructions:

(38) ?*Foi como os alunos estavam cheios de trabalho esta semana* que adiei o teste.
      '*It was as the students had so much work to do this week* that I postponed the test.'

The conjunction *como* [since], besides encoding a semantic relation that can be interpreted as cause – consequence, signals that the state of affairs described in the subordinate clause is already known to the addressee. This property does not fit well with the information structure established by the cleft construction. In a cleft construction, the left-dislocated expression is typically marked as focal information, the rest of the sentence being background information. Left-dislocation of a clause introduced by *como* is therefore odd in most cases.

3.5. Interpretation of test results

Not all the tests lead to equally reliable results in all cases:

– The paraphrase test is, in principle, quite reliable for connections at all three levels, but as it is carried out, at least partially, in everyday language, it is not independent of individual preferences of wording and can therefore not always eliminate differences of judgement between individual interpreters.
– The scope test can unambiguously exclude temporal and modal readings of connections. A connective which is within the scope of negation and/or of an epistemic operator can only be interpreted temporally. A connective which has scope over a modal operator (e. g., an epistemic or deontic modal auxiliary, a modal sentence adverb or a modal particle) can only be interpreted at a modal level. But a connective which has scope over negation still allows temporal and modal readings.
– The tense test can unambiguously attest and exclude temporal readings. If tenses and temporal adjuncts interact semantically beyond the boundaries of the connected clauses, then the connection is temporal. If tenses and temporal adjuncts do not interact between the clauses but relate independently of each other to the time of utterance, then the connection can only be interpreted at a modal level.
– The cleft test can unambiguously attest temporal and exclude modal readings of connections. If a cleft construction is possible without a change of descriptive or speech-act meaning, the connection must be temporal. If it is not possible, the connection will typically be modal.

In order to reliably distinguish between temporal and modal readings of empirical sentence connections, all four test procedures should be carried out if possible.

4. Further perspectives: Semantic specialisation of linking constructions

In German, most connectives can be used for establishing connections at all three levels (see Blühdorn 2003: 15ff.; 2004a: 129; 2004b: 191f., 203ff.; 2006: 265; 2008a).

For Portuguese, Neves (2000: 804f.) observes that connections with *porque* [because] usually have epistemic and/or deontic-illocutionary, but only rarely temporal readings. This observation can be confirmed by examining empirical data. But why should this be the case? The German equivalent of *porque*, the subordinating conjunction *weil*, is used significantly more frequently for encoding temporal connections than for encoding modal connections (see Frohning 2007: 130ff.). How can this difference between *weil* and *porque* be explained?

Unlike German, Portuguese makes extensive use of (impersonal and personal) infinitive clauses embedded by prepositions, as in the following examples:

(39) Três funcionários de empresa são presos *por fazer* cópias piratas de DVDs.
      'Three employees are arrested *for making* (impersonal infinitive) illegal copies of DVDs.'

(40) Estudantes paraenses recebem computadores *por terem chegado* à semifinal do jogo.
      'Students of the state of Pará receive computers *for having reached* (personal infinitive) the semi-finals of the game.'

Constructions of this kind always suggest temporal readings in Portuguese (see Peres & Mascarenhas 2006: 162f.). Example (39) can only mean that the factuality of the copying was the cause of the factuality of the arrest, and (40) means that the factuality of reaching the semi-finals led to the factuality of receiving the computers. Modal readings are excluded in these examples.

Portuguese infinitive clauses are unmarked for mood (indicative vs. subjunctive vs. imperative) (see Cunha & Cintra 2009: 496). This means that they do not contribute actively to the overall modal semantics of the sentence. They simply fit into the modal structure provided by the main clause. In finite clauses, mood is an important and pervasive grammatical device for encoding epistemicity and deonticity. Even though infinitive clauses are not necessarily totally devoid of epistemic and deontic information, they are clearly less appropriate than finite clauses for encoding independent propositions and/or speech-acts.

It seems natural, then, that infinitive clauses (if available) are preferred for encoding temporal connections and finite clauses for encoding modal

connections. Some of the sentence connectives of Portuguese are arranged in lexical pairs, each consisting of a preposition and a corresponding conjunction: *por/porque,para/para que, sem/sem que, desde/desde que, até/até que, antes de/antes que, depois de/depois que* etc. We leave aside for future empirical research the question of whether all these pairs manifest the same division of labour as *por* and *porque*.

References

Abaurre, Maria Bernadete M. & Rodrigues, Angela C. S. (eds.) (2002): *Gramática do Português Falado.* Vol. VIII: Novos estudos descritivos. – Campinas: Editora da Unicamp.

Barros, Tomás de ([14]1961): *Gramática Portuguesa.* – Porto: Editora Educação Nacional.

Bechara, Evanildo ([37]1999): *Moderna Gramática Portuguesa.* – Rio de Janeiro: Lucerna.

Blatz, Friedrich ([3]1896/1970): *Neuhochdeutsche Grammatik mit Berücksichtigung der historischen Entwickelung der deutschen Sprache.* – Karlsruhe: Lang (Reprint Hildesheim: Olms).

Blühdorn, Hardarik (2003): "Zur Semantik der Konjunktion *als*. Paradigmatische und syntagmatische Aspekte." – In: Elke Hentschel (ed.): *Particulae Collectae. Festschrift für Harald Weydt zum 65. Geburtstag. Linguistik online* 13, 11–53.
    (URL: http://www.linguistik-online.com/13_01/bluehdorn.pdf [02/09/2009])

– (2004a): "Temporalkonnektoren: Einleitung." – In: Hardarik Blühdorn, Eva Breindl & Ulrich H. Waßner (eds.) (2004): *Brücken schlagen. Grundlagen der Konnektorensemantik,* 125–136. Berlin: de Gruyter.

– (2004b): "Die Konjunktionen *nachdem* und *bevor*." – In: Hardarik Blühdorn, Eva Breindl & Ulrich H. Waßner (eds.) (2004): *Brücken schlagen. Grundlagen der Konnektorensemantik,* 185–211. Berlin: de Gruyter.

– (2005): "Zur Semantik kausaler Satzverbindungen: Integration, Fokussierung, Definitheit und modale Umgebung." – In: *Studi Linguistici e Filologici Online. Rivista Telematica del Dipartimento di Linguistica dell'Università di Pisa* (SLiFO) 3 (2), 311–338.
    (URL: http://www.humnet.unipi.it/slifo/2005vol2/Bluhdorn3.2.pdf [02/09/2009])

– (2006): "Kausale Satzverknüpfungen im Deutschen." – In: *Pandaemonium Germanicum. Revista de Estudos Germanísticos* (Universidade de São Paulo) 10, 253–282.
    (URL: http://www.fflch.usp.br/dlm/alemao/pandaemoniumgermanicum/site/images/ pdf/ed2006/Kausale_Satzverknpfungen_im_Deutschen.pdf [02/09/2010])

– (2008a): "Epistemische Lesarten von Satzkonnektoren. Wie sie zustande kommen und wie man sie erkennt." – In: Inge Pohl (ed.): *Semantik und Pragmatik – Schnittstellen,* 217–251. Frankfurt a. M.: Lang.

– (2008b): "On the syntax and semantics of sentence connectives." – Ms., Mannheim: Institut für Deutsche Sprache.
    (URL: http://www.ids-mannheim.de/gra/texte/blu_connectives.pdf [02/09/2009])

– (2009): "Verknüpfungs-Eigenschaften deutscher Kausal-Konnektoren zwischen syntaktischer Hierarchie und Linearität." – Ms., Mannheim: Institut für Deutsche Sprache.
    (URL: http://www.ids-mannheim.de/gra/texte/blu_verknuepfungseigenschaften.pdf [02/09/2010])

Blühdorn, Hardarik, Breindl, Eva & Waßner, Ulrich H. (eds.) (2004): *Brücken schlagen. Grundlagen der Konnektorensemantik.* Berlin: de Gruyter.

Cunha, Celso F. da & Cintra, Luís F. Lindley ([5]2009): *Nova Gramática do Português Contemporâneo.* – Rio de Janeiro: Lexikon.

Duden ([7]2005): *Die Grammatik.* – Mannheim: Dudenverlag.

Frohning, Dagmar (2007): *Kausalmarker zwischen Pragmatik und Kognition. Korpusbasierte Analysen zur Variation im Deutschen.* – Tübingen: Niemeyer.

Gärtner, Eberhard (1998): *Grammatik der portugiesischen Sprache.* – Tübingen: Niemeyer.

Keller, Rudi (1995): "The epistemic *weil*." – In: Dieter Stein & Susan Wright (eds.): *Subjectivity and subjectivisation. Linguistic perspectives,* 16–30. Cambridge: Cambridge University Press.

Kortmann, Bernd (1996): *Adverbial Subordination. A Typology and History of Adverbial Subordinators Based on European Languages.* – Berlin: de Gruyter.

Kratzer, Angelika (1991): "Modality." – In: Arnim von Stechow & Dieter Wunderlich (eds.): *Semantics. An International Handbook of Contemporary Research,* 639–650. Berlin: de Gruyter.

Lehmann, Christian (1988): "Towards a typology of clause linkage." – In: John Haiman & Sandra Thompson (eds.): *Clause Combining in Grammar and Discourse,* 181–225. Amsterdam: Benjamins.

Luft, Celso Pedro (1996): *A vírgula. Considerações sobre o seu ensino e o seu emprego.* – São Paulo: Ática.

Lyons, John (1977): *Semantics.* 2 vols. – Cambridge: Cambridge University Press.

Mateus, Maria Helena, Brito, Ana Maria, Duarte, Inês et al. ([5]2003): *Gramática da Língua Portuguesa.* – Lisboa: Caminho.

Neves, Maria Helena de Moura (ed.) (1999): *Gramática do Português Falado.* Vol. VII: Novos Estudos. – Campinas: Editora da Unicamp.

– (2000): *Gramática de Usos do Português.* – São Paulo: Ed. UNESP.

– (2006): *Texto e gramática.* – São Paulo: Contexto.

Pasch, Renate, Brauße, Ursula, Breindl, Eva & Waßner, Ulrich H. (2003): *Handbuch der deutschen Konnektoren. Linguistische Grundlagen der Beschreibung und syntaktische Merkmale der deutschen Satzverknüpfer (Konjunktionen, Satzadverbien und Partikeln).* – Berlin: de Gruyter.

Peres, João Andrade & Mascarenhas, Salvador (2006): "Notes on sentential connections (predominantly) in Portuguese." – In: *Journal of Portuguese Linguistics* 5, 113–169.

Pezatti, Erotilde Goreti (2002): "As construções conclusivas no português falado." – In: Maria Bernadete M. Abaurre & Angela C.S. Rodrigues (eds.) (2002): *Gramática do Português Falado*. Vol. VIII: Novos estudos descritivos, 185–225. Campinas: Editora da Unicamp.

Reichmann, Tinka (2005): *Satzspaltung und Informationsstruktur im Portugiesischen und im Deutschen. Ein Beitrag zur Kontrastiven Linguistik und Übersetzungswissenschaft*. – Frankfurt a. M.: Lang.

– (2007): "A clivagem no português: Critérios de classificação e métodos de tradução." – In: Yves Gambier, Miriam Shlesinger & Radegundis Stolze (eds.): *Doubts and Directions in Translation Studies. Selected contributions from the EST Congress, Lisbon 2004*, 253–266. Amsterdam: Benjamins.

Sweetser, Eve (1990): *From etymology to pragmatics. Metaphorical and cultural aspects of semantic structure*. – Cambridge: Cambridge University Press.

Truckenbrodt, Hubert (2006): "On the semantic motivation of syntactical verb movement to C in German." – In: *Theoretical Linguistics* 32, 257–306.

Zifonun, Gisela, Hoffmann, Ludger, Strecker, Bruno et al. (1997): *Grammatik der deutschen Sprache*. 3 vols. – Berlin/New York: de Gruyter.