

The ordering of events introduced by Czech *až* and *než**

Laura A. Janda

University of North Carolina at Chapel Hill

Czech has two conjunctions that serve to order pairs of events relative to one another. Both are, however, polysemous, and each one appears to contradict itself, by ordering events differently. It seems that *až* can be antonymous with itself, as in:

1. a. *Počkám, až odejdeš.*
'I'll wait **until** you leave.'
- b. *Odpočinu si, až odejdeš.*
'I'll rest **after** you leave.'

In 1a, the action of the main clause (waiting) precedes the action of the clause introduced by *až* (leaving), whereas in 1b we observe the reverse chronology. This sort of apparent antonymy is, of course, counter-intuitive and begs an explanation in the larger context of a comprehensive account of the meaning of *až*.

However, no explanation of *až* would be complete without an account of *než*, which serves as both a near-twin and a foil for *až*, as in:

2. a. *Zkoušel to tak dlouho, až se mu to podařilo.*
'He kept trying **until** he succeeded.'
- b. *Zkoušel to tak dlouho, než se mu to podařilo.*
'He kept trying **until** he succeeded.'
3. a. *Budou se mít dobře, až začne válka.*
'They'll be doing well **after** the war starts.'
- b. *Měli se dobře, než začala válka.*
'They were doing well **until** the war started.'

In 2, the ordering of events is the same with both *až* and *než*, but the implications of these two statements are not identical. The conjunction *až* has a distinctly causative connotation (the trying brought about the success), whereas *než* implies nothing more

than temporal association (the trying was perhaps random and was simply stopped when success came about). In 3, *až* presents an ordering of the events described opposite of that presented by *než*: whereas in 3a, we imagine that the referents are arms manufacturers who are looking forward to the huge profits they will reap in the coming conflict, in 3b the likely referents are the unfortunate civilians whose lives were disrupted by warfare. A proper explanation should be able to handle all of the cases of seeming antonymy and synonymy observed in the above examples, as well as all the other meanings of both *až* and *než*.

This paper will explore the meanings of *až* and *než* and attempt to explain the way in which various orderings of events are motivated. The framework I invoke is that of cognitive linguistics, as elaborated by Lakoff (1987) and Langacker (1986). In this framework, the role of prototypicality and category structure in producing polysemy is apparent. I will also demonstrate the impact of metaphor in everyday speech, and show how our understanding of spatial relationships shapes our understanding of the passage of time and changing of states. I will differentiate between meaning that is inherent in the conjunctions and meaning that is constructed elsewhere, whether by means of aspect, by means of attenuation due to negative or interrogative constructions, or by means of our extra-linguistic knowledge.

In addition to examples culled from handbooks of Czech (Grepil and Karlík 1986, Daneš *et al.* 1987), I have gathered sample sentences from a section of Havel's (1985) *Dopisy Olze* consisting of over 89,000 words, in order to procure contextualized, natural language data.

At the semantic heart of both *až* and *než* is the comparison of two items. In each case, the item introduced by *až* or *než* serves as the ground, or landmark, against which the other item, or figure (which we will refer to as the trajector) is compared. The figure-ground (or alternatively, trajector-landmark) distinction is a natural product of our physical experience of the world. Johnson (1987:124) describes this link between perception and cognitive organization in the following way:

"Our world radiates from *our bodies* as perceptual centers from which we see, hear, touch, taste, and smell our world. Our perceptual space defines a domain of macroscopic objects that reside at varying distances from us. From our central vantage point we can focus our attention on one object or perceptual field after another as we scan our world. What is 'figure' or 'foreground' at one moment may become 'background' at another, as we move perceptually through our world."

Although on the face of it *až* and *než* may seem to represent rather haphazard collections of meanings, each can be shown to have a semantic network consisting of only two related submeanings, both of which are subject to metaphorical extension. Thus the polysemy of these two conjunctions can be viewed in each case as a coherent whole, despite complications in internal structure.

The most basic meaning of *až* (which we will refer to as "AŽ1") is captioned by the configuration in figure one, in which we observe a trajector (TR) approaching a landmark (LM), usually conceived of as an extreme point in the domain.

TR - - - - ->LM

(domain)

Figure 1: Caption of AŽ1 "reaching"

This basic meaning can be illustrated by 4:

4. *Jeli až k hranici.*

'They rode **as far as** the border.'

TR = they rode

LM = border

domain = space

The domain in which TR travels is frequently identified with the body both in concrete (5) and metaphorical (6) terms:

5. *Červenám se až po uši*

'I blush **up to** [my] ears'

TR = blushing

LM = ears

domain = body

6. *mám toho "psaní o sobě" až po krk*

'I have this "writing about myself" **up to** [my] neck (I'm fed up with it)'

TR = having this "writing about myself"

LM = neck

domain = body

This meaning of *až* is subject to several kinds of metaphorical extension, involving the identification of the domain as something other than physical space. Here are the types of extensions most typically observed.

metaphor: time = space

This metaphor is very well documented (cf. Fraisse 1963, Lakoff and Johnson 1980, Lakoff 1987), and pervasive across cultures. English phrases such as *Christmas is still a long way off* and *I can't believe spring is finally here*, which can be translated literally into Czech as *Vánoce jsou ještě daleko* and *Nemohu věřit, že už je tu jaro*, attest to the way in which we use our knowledge of spatial relations to construct our understanding of temporal ones. Here is an example of this metaphorical extension of *až*:

7. *Pracovali až do setmění.*

'They worked **until** dusk.'

TR = working

LM = dusk

domain = time

We will return to this example later in our discussion of item ordering; note for now that in this case and in 1a, TR precedes LM.

metaphor: states = locations

This metaphor is so ubiquitous that we do not normally perceive it at all. We perceive states as containers; in both Czech and English we speak about something being *in a given state*, *v daném stavu*. As an object passes from one state to another, it passes from one container or location to another, witness English *How did you get into such a state*, literally paralleled by Czech *Jak jste se dostal do takového stavu*.

8. *mohl by to být totiž nenápadný začátek rozkladu, který by mohl vést nakonec třeba až k tomu, že by člověk přestal číst i ty noviny*

'it could after all be the imperceptible beginning of decay, which could even lead **up to** the point at which a person might stop reading even the newspapers'

TR = decay

LM = the state in which a person stops reading even newspapers

domain = states of decay

Note all three domains of *až* (space, time, states) betray a scalar dimension, in which the LM represents an extreme point. It can literally be a numerical scale, as in the following type of phrase common in weather reports:

9. *Bude až 15 stupňů tepla*

'The temperature will go **as high as** 15 degrees'

TR = highest temperature

LM = 15 degrees

domain = temperature

Often the extreme is evaluated as excessive, as in:

10. *mezi spoluvězni mám postavení víc než dobré. Až si někdy říkám, že si takový respekt vlastně ani nezasloužím*

'among the inmates I have more than just good standing. [It reaches] to the **point that** I sometimes tell myself that I don't even deserve such respect'

TR = my standing among the inmates

LM = undeservedly good

domain = scale of standing

This evaluation can be intensified by the use of the qualifier *příliš* 'too':

11. *Minulá návštěva byla až příliš improvizovaná*

'The last visit was **to the point of being** too improvised'

TR = the last visit

LM = too improvised

domain = scale of amount of improvisation

A modification of the instantiation of the domain as a scale over which the TR ranges, is the application of *až* instead to a domain consisting of a group of related items, where the scale is more implicit than explicit:

12. *nějak (více či méně) se mi líbí a nějak mě oslovuje spousta různých myslitelů od Klímy až po Husserla*

'there are a number of different thinkers who I like more or less and who more or less address [issues that concern] me, from Klíma **to** Husserl'

TR = I like and my issues are addressed by thinkers

LM = Husserl

domain = various thinkers

Yet another version of this submeaning of *až* assumes that the domain is a canonical or ideal realization of something, and *až* introduces the one item in the domain that was absent in this particular realization. Here the TR reaches but does not include the item named by *až*.

13. *Až na jednoho, přišli všichni.*

'**Except** for one, they all came.'

TR = arrival of people

LM = the one that was missing

domain = total number of people expected

14. *Přednášel dobře, až na to že neuvedl mnoho příkladů*

'He lectured well, **although** he didn't give many examples.'

TR = his lecture

LM = giving plenty of examples

domain = an ideal lecture

There is another basic submeaning of *až* which we will call "AŽ2", captioned in the configuration in figure two. This configuration shows TR at the end point of its trajectory; movement through the domain toward LM is not relevant here. The only relevant fact is that of the juxtaposition of TR and LM.

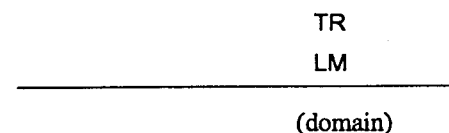


Fig. 2: Caption of AŽ2 "juxtaposition"

The transformation of a configuration from that of a path to that of a mere endpoint of a path is not at all unusual. Witness the contrast between these two meanings of English *over*: *Sally went over the hill* (here the activity of the TR traces a path) and *Sally lives over the hill* (here TR is at the endpoint and the path is not traced by the activity named in the verb; for more on this phenomenon, see Brugman 1981 and Lakoff 1987).

The juxtaposition can be realized in physical space, as in:

15. *Má nejhorší nálada stojí sice v mém seznamu špatných nálad [...] až na osmém místě*

'It must be admitted that my worst mood stands (only) in eighth place on my list of bad moods'

TR = my worst mood

LM = eighth place

domain = places on my list of bad moods

but more frequently we observe the metaphorical extension of AŽ2 to the domain of time, and it is here that issues of event ordering become interesting. There are two options in terms of the interpretation of event ordering, and these are dependent upon the nature of the LM, rather than upon the semantics of *až*. A temporal juxtaposition should normally be perceived as simultaneity, and indeed this appears to be the default value for AŽ2. The only problem is, however, that the aspectual system of Czech contains a category of events that cannot be simultaneous with any other events, namely events marked by perfective verbs. The perfective aspect describes an event that has no internal dimension whatsoever (cf. Comrie 1976: 4-3), a fact that is corroborated by the exclusion of the present tense for perfectives. Perfectives have no present tense, for this would entail simultaneity with the present. Nor can perfectives be simultaneous with past or future events; a perfective event is either embedded in an imperfective event (or other time period), or it is sequenced relative to another event. Thus a perfective event cannot serve as the temporal locus for a simultaneous event. It is therefore the aspect of the LM that is crucial to the ordering of juxtaposed events. LM always serves the role of ground in the figure-ground distinction outlined above, so it is therefore the backdrop for TR. If LM is perfective, it persists in its role as ground for TR, but cannot be simultaneous with TR. The only other option for an event that is the background for another event is for it to be sequenced prior to that event. Thus, if LM is a perfective event, then it precedes TR; if LM is something other than a perfective event (an imperfective event, a calendrical period, or any other temporal landmark), then it is simultaneous with TR. Observe this distribution in the following examples (here the aspect of LM is indicated, but the domain is not, because in every case the domain is time):

LM and TR are simultaneous:

16. *Až budeš v Praze, zeptej se Zuzany*

'When you are in Prague, ask Zuzana'

TR = ask Zuzana

LM = you will be in Prague — an imperfective event

17. *Je zajímavé, že mne to napadlo až při našem rozhovoru*

'It is interesting that it occurred to me only during our conversation.'

TR = it occurred to me

LM = during our conversation — a duration of time

18. *Škoda že návštěva nebyla až dnes, byl bych v lepší formě*

'it's too bad that the visit wasn't [put off until] today, I'd be in better shape'

TR = visit

LM = today — a calendrically determined period

LM (a perfective event) precedes TR:

19. *Není to tedy jen otázka po tom, co bude, až dozní určitá konkrétní radost*

'It isn't just a question of what there will be once the concrete enjoyment has faded away'

TR = what there will be

LM = the concrete enjoyment has faded away — a perfective event

20. *A tak i já po milióntém si představuji, jak se s Tebou uvítám, až se jednoho dne objevím doma*

'And so I am also for the one million and first time thinking about how I will greet you when one day I show up at home.'

TR = I will greet you

LM = I will show up at home — a perfective event

Often there is a connotation of causality involved in the interpretation of AŽ2. LM, as the background, often serves as either the event that triggers TR or the condition that facilitates TR. Lakoff 1987 provides a framework for understanding how temporal links of this kind come to be understood as causal links (largely because a prototypical cause precedes its effect). Here are some examples demonstrating the way in which a temporal link can be perceived as a causal link between two events:

21. *až bude opravené, co nejdřív auto prodej*

'when it is fixed, sell the car as soon as possible'

TR = sell the car

LM = the car is fixed — an imperfective event/state

22. *zřejmě je ode mne z různých stran očekáváno, že až se odtud jednou vrátím, něco o tom všem napíšu*

'clearly it is expected of me from various sides, that once I return from here, I will write something about all this'

TR = I will write something about all this

LM = I will return from here — a perfective event

23. *někteří mí úspěšní kamarádi nebudou vědět, jak se tvářit, až mě někde potkají*

'some of my successful friends will not know how to act, when they meet me somewhere'

TR = they will not know how to act

LM = they will meet me — a perfective event

The state of repair of the car facilitates its sale (21), as does the return from prison facilitate literary activity (22). Further, the unexpected meeting actually causes the confusion of the successful friends that is pondered in the last example (23).

The significant role of aspect in disambiguating order was recognized by Daneš *et al.* (1987: 477), who stated that *až* orders events simultaneously unless it presents a perfective event. There are, however, some exceptions to this rule. One is the use of imperfective verbs to describe habitually repeated perfective events, as in:

24. *K spánku se ukládali, až když z oděvu vyždímali vodu*

'They would go to bed once they had wrung the water out of their clothes.'

TR = they were going to bed

LM = they were wringing the water out of their clothes — a series of perfective events collectively indicated by an imperfective verb

Here the speaker and hearer recognize a habitual daily routine, and also understand that one cannot go wringing out one's clothing in one's sleep. We see sequential ordering even though the event in LM is described by an imperfective verb. The use of temporal adverbs in the main clause can likewise produce sentences that do not appear to conform to the aspectual rule:

25. *Až dopíšeš dopis, maminka už bude spát.*

'When you finish writing the letter, mother will already be sleeping.'

TR = mother will already be sleeping

LM = you will finish the letter — a perfective event

Here the adverb *už* 'already' has thrown the temporal sequence off a bit, for it suggests a result, something normally associated with perfective verbs. The import of the sentence, is, however, in keeping with the ordering observed thus far: 'when you finish the letter [you will notice that] mother will be sleeping / mother will already have fallen asleep'.

To summarize briefly only the temporal uses of *až*:

AŽ1 "reach" signals activity prior to and until LM

AŽ2 "juxtaposition" signals activity

simultaneous to a non-perfective LM

-or-

after a perfective LM.

The only point of possible ambiguity in this system is in determining whether a perfective clause introduced by *až* instantiates AŽ1, where TR precedes LM (as in examples 1a and 2a); or AŽ2, where LM precedes TR (as in examples 1b, 3a, and 19-23). I will suggest that it is our extra-linguistic knowledge that helps to disambiguate these two types. Lakoff (1987) has presented extensive evidence to the effect that human beings construct idealized cognitive models about the way in which the world functions, and has shown that these models have profound effects on our organization of lexical information and linguistic use of lexicon. If we look at the types of verbs in temporal AŽ1 expressions (*počkat* 'wait' *zkoušet* 'try') and compare them with the types of verbs in temporal AŽ2 expressions (*odpočinout si* 'rest', *mít se dobře* 'do well', *být* 'be', *uvítat se s* 'greet', *prodat* 'sell', *napsat* 'write', *nevědět* 'not know') we note that the former all share a teleological orientation not present in the latter. In other words, the verbs in AŽ1 expressions denote actions that seek some external boundary (here provided by LM), whereas the verbs in AŽ2 expressions do not. Consider again the sentences in 1. With regard to *waiting*, the hope is always that something will bring it to an end, whereas the same cannot be said to be true of resting. When confronted with a verb like *waiting*, both hearer and speaker will recognize the *až* clause as the endpoint, but will prefer instead the interpretation of

AŽ2 for a verb like *resting*. Note also that with the teleological verbs expressing AŽ1, the order of the clauses tends to be iconic; it is impossible to say something like **Až odejdeš, počkám* (cf. 1a), although for nearly all other uses of both *až* and *než* the actual linear order of the clauses has no semantic consequence.

Whereas *až* signals contiguity or contact in all of its meanings, *než* signals something that is very nearly the opposite: separation. As with *až*, it is helpful to distinguish two submeanings of *než*, the first of which is captioned in figure three:

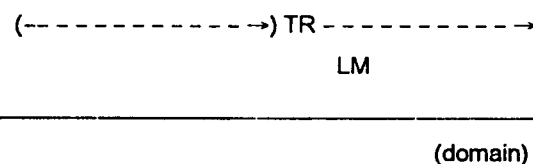


Fig. 3: NEŽ1 "surpassing"

Unlike AŽ1, NEŽ1 is not necessarily concerned with the activity in the prior part of the domain; it focuses on the TR's surpassing LM. Also unlike *až*, *než* does not have a primary base in the domain of the physical world. Instead the domain is typically a scale of some quality or of likelihood or preference. By far the most frequent use of *než* is found with comparative adjectives and adverbs:

26. *dílo, zdá se mi, by mělo být vždycky jaksi "chytřejší" než jeho autor*
'the work, it seems to me, should always be somewhat "more clever" than its author'

TR = the work

LM = its author

domain = scale of cleverness

27. *Kafkovi rozumím jaksi lépe a víc, než jiní*

'I understand Kafka somewhat better and more than other people'

TR = I understand Kafka

LM = other people understand Kafka

domain = scale of how well Kafka is understood

Because *než* can combine with any adjective or adverb, both the scales of lateness and of soonness can be invoked, providing opposite orders of events. In these cases,

however, the ordering is determined by the adjectives or adverbs and does not result from the semantics of *než* itself:

28. *tenhle dopis Ti přichází o týden později, než by měl*
'this letter is coming to you a week later than it should'

TR = this letter is coming

LM = this letter should come

domain = scale of lateness

29. *Ted' už mi je sem neposílej, odjedu dřív, než bysem došly*

'Don't send them to me here now, I will leave sooner than they would arrive here'

TR = I will leave

LM = they would arrive here

domain = scale of soonness

If an adjective or adverb is modified by a quantifier denoting excess, there can be a reading according to the scale of possibility, such that the action of TR has exceeded the point where something at LM could take place. The counterfactual nature of LM is indicated by the use of the conditional mood:

30. *Je tuze pyšná, než aby se doprošovala.*

'She is too proud to go begging.'

TR = she is proud

LM = upper limit of pride that would allow begging

domain = scale of pride

31. *protože jsem si řekl, že všechno víš i beze mne a že já naopak o stavu Hrádečku a Tvých možnostech vím příliš málo, než abych do toho mohl kvalifikovaně zasáhnout* 'because I told myself that you know everything even without me and that I on the other hand know too little about the state of Hrádeček and about your options to be qualified to interfere'

TR = what I know about the state of Hrádeček and your options

LM = the smallest amount of knowledge about the state of Hrádeček and your options that would qualify me to interfere

domain = scale of knowledge about the state of Hrádeček and your options

Likelihood or preference are frequently indicated by the use of *než* with the comparative *spíš(e)* 'rather, sooner, more likely':

32. *Řekl bych, že je to takový spíš umělecký, než vědecký přístup*
'I would say that it is an artistic rather **than** a scientific approach'

TR = the approach

LM = a scientific approach

domain = scale ranging from scientific to artistic

33. *A proto se snažím i v mnoha jiných věcech vidět spíš příznaky něčeho dobrého než špatného*

'And that is why I try even in many other things to see signs of something good rather **than** of something bad'

TR = signs

LM = signs of something bad

domain = scale ranging from signs of something bad to signs of something good

In surpassing LM, TR puts distance between itself and LM, and therefore stands out as separate from or other than LM. It is therefore not surprising that adjectives and adverbs built from the root *jin-* 'other, different' are frequently found in collocation with *než*:

34. *tady je všechno přeci jen trochu jinak, než venku*
'after all everything here is a bit different **than** on the outside'

TR = everything here

LM = everything on the outside

domain = range of what things are like

35. *máš-li možnost koupit pro změnu pastu jiné značky, než jsem měl dosud, učiň tak*

'if you have an opportunity to buy for a change a different brand of toothpaste **than** I have had so far, do so'

TR = brand of toothpaste

LM = the toothpaste I have had so far

domain = range of brands of toothpaste

Thus far the use of *než* is entirely straightforward and has little to do with item ordering. There are, however, various means by which *než* can become an impenetra-

ble barrier, effectively trapping TR at LM rather than allowing it to pass on, as in NEŽ2:

(-----→) TR |
LM

(domain)

Fig. 4: NEŽ2 "barrier"

Among the devices that create this barrier are negation or calling into question of the TR clause. The use of negation can be observed both with *jin-* 'other, different' and with comparatives:

36. *nikdy jsem si totiž nemyslel, že dramatik je někdo chytřejší než divák*
'mind you I was never of the opinion that a playwright is someone more clever **than** a playgoer'

TR = playwright

LM = playgoer

domain = scale of cleverness

37. *ani v dopisech z vězení se dost dobře nemohu stát někým jiným, než kým jsem*

'not even in letters from prison can I really become someone other **than** who I am'

TR = the person I can be

LM = the person I am

domain = range of persons I can be

With the negative verb *nezbývat* 'not remain, leave no alternative,' the use of *jin-* 'other' is redundant, and we observe a truncation of the type of construction in 37:

38. *Takže mi nezbývá, než zase jen čekat*
'So nothing remains for me [to do, other] **than** just to wait again'

TR = what remains of my possibilities

LM = just waiting again

domain = range of my possibilities

The use of an interrogative in the main clause can call into question the portion of the domain beyond LM. Here the interrogative functions much like negation, for it suggests that this space cannot be traversed by TR:

39. *jak jinak se vlastně ohlašuje tajemství a zážrak, než vybočením z určitého pořádku*

'how indeed do mystery and wonder announce themselves **other than** by means of a deviation from the given order'

TR = how mystery and wonder announce themselves

LM = deviation from the given order

domain = possible ways in which mystery and wonder might announce themselves

Like all examples of NEŽ2, what is implied is that there is only one possibility for TR, that defined by LM (here, deviation from the given order).

There is yet a third factor that determines the presence of a barrier characteristic of NEŽ2, and this is once again aspect. Perfective aspect renders the contents of the clause introduced by *než* impenetrable, cutting off further action. Here *než* orders TR prior to LM and LM serves as the boundary for the action in TR. The use of *než* is also motivated in many (but not all) examples as an elliptical version of the collocation *dříve než* (cf. 29 above).

40. *Než se s tím strojem intimněji sblížím, budu asi kolem něj trochu zmatkovat*

'**Before** I become more intimately acquainted with this machine, I will probably have to bungle around it a bit'

TR = I will bungle around the machine

LM = I will become intimately acquainted with the machine

domain = time

Note that this temporal use of *než*, although it yields the same ordering as AŽ1, has somewhat different implications. Recall that the verbs in temporal expressions of AŽ1 are teleological and that the LM for them is the endpoint toward which they are aimed. The same is not true of NEŽ2. Here the action in TR is not necessarily aimed toward any endpoint, instead an event (LM) simply comes along that brings it to an end.

Here is a summary of the temporal uses of both *až* and *než*:

až:

AŽ1 "reach" signals activity prior to and until LM if the verb in TR has a teleological orientation

AŽ2 "juxtaposition" signals activity simultaneous to a non-perfective LM -or- after a perfective LM.

než:

NEŽ1 "surpassing" does not signal order itself, but may contribute to the interpretation of either order in the presence of the comparative adverbs *později* 'later,' *dříve* 'sooner'

NEŽ2 "barrier" signals activity before a perfective LM

This presentation demonstrates the advantage to be gained from semantic interpretation according to the framework of cognitive linguistics, namely a coherent account of the disparate polysemy of items such as the conjunctions treated here. It is also a testimony to the complex factors that enter into our linguistic construction of time and order, among them metaphor, extralinguistic knowledge, and grammatical knowledge (aspect), in addition to lexical knowledge.

References

- Brugman, C. 1981. *Story of Over*. M. A. thesis, University of California, Berkeley.
- Comrie, B. 1976. *Aspect*. Cambridge: Cambridge University Press.
- Daneš, F. et al. 1987. *Mluvnice češtiny, 3: Skladba*. [Czech grammar, vol.3: Syntax] Prague: Academia.
- Fraisse, P. 1963. *The Psychology of Time*. Westport, Conn.
- Grepl, M. and Karlík P. 1986. *Skladba spisovné češtiny* [Literary Czech Syntax]. Prague: Státní pedagogické nakladatelství.
- Havel, V. 1985. *Dopisy Olze* [Letters to Olga]. Toronto: Sixty-Eight Publishers.
- Johnson, M. 1987. *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. Chicago and London: University of Chicago Press.

Lakoff, G. 1977. "Linguistic Gestalts," in *Papers from the Thirteenth Regional Meeting, Chicago Linguistic Society*: 236-87. Chicago: Chicago Linguistic Society.

Lakoff, G. 1987. *Women, Fire, and Dangerous Things*. Chicago and London: University of Chicago Press.

Lakoff, G. and Johnson M. 1980. *Metaphors We Live By*. Chicago: University of Chicago Press.

Langacker, R. 1986. *Foundations of Cognitive Grammar, vol. I*. Stanford: Stanford University Press.