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The performance-competence interplay in the *V until ADJ*- construction

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Outline

- Competence and performance
- Usage-based construction grammar
 - Usage-based models of language
 - Construction grammar
- The [*V until* ADJ]-construction
 - Preliminaries
 - A usage-based description of the [*V until* ADJ]-construction

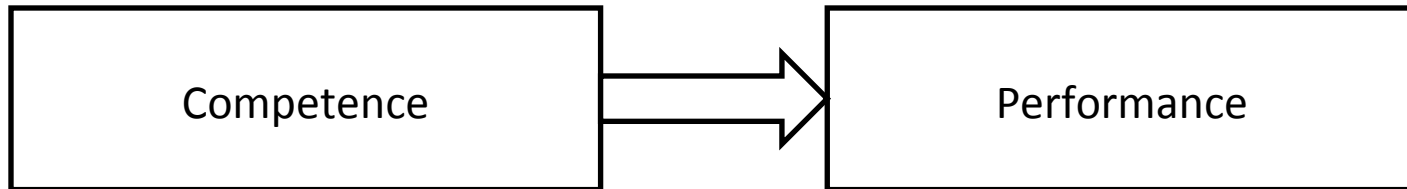
Competence and Performance

Linguistics traditionally distinguishes between competence and performance.

- Competence/langue: language system
- Performance/parole: language use

Competence and Performance

Traditionally, performance is governed, or determined, by competence in a unidirectional fashion:



Competence and Performance

Principles

- The language system is abstract
- The language system is maximally general
- The language system is autonomous

Consequence

- Performance/language use is not worth studying, because it is irrelevant to the language system

Usage-Based Construction Grammar: Usage-Based Models of Language

- In usage-based linguistics, the strict distinction between performance and competence and the unidirectional relation of influence are rejected.
- The basic tenet in usage-based linguistics is that the language system is established through language use.

Usage-Based Construction Grammar: Usage-Based Models of Language

“structure, or regularity, comes out of discourse and is shaped by discourse in an ongoing process. Grammar is, in this view, simply the name for certain categories of observed repetitions in discourse. It is hence not to be understood as a prerequisite for discourse, a prior possession attributable in identical form to both speaker and hearer. Its forms are not fixed templates but emerge out of face-to-face interaction in ways that reflect the individual speakers' past experience of these forms, and their assessment of the present context, including especially their interlocutors, whose experiences and assessments may be quite different.”

(Hopper 1998: 156)

Usage-Based Construction Grammar: Usage-Based Models of Language

“for usage-based theorists the fundamental reality of language is people making utterances to one another on particular occasions of use. When people repeatedly use the same particular and concrete linguistic symbols to one another in "similar" situations, what may emerge over time is a pattern of language use schematised in the minds of users as one or another kind of linguistic category or construction.”

(Tomasello 2003: 99)

Usage-Based Construction Grammar: Usage-Based Models of Language

- Language acquisition (the establishment of competence in the individual) is inductive, as the abstract structures in the language system are schematizations/generalizations over recurring usage-events.
- The language system, in turn, influences further usage-events such that they more or less conform to the regularities in the system.

Usage-Based Construction Grammar: Usage-Based Models of Language

The main assumptions of usage-based linguistics (according to Barlow & Kemmer 2000):

- The intimate relation between linguistic structures and instances of use of language
- The importance of frequency
- Linguistic representations as emergent, rather than stored as fixed entities
- Comprehension and production as integral, rather than peripheral, to the linguistic system
- The interconnectedness of the linguistic system with non-linguistic cognitive systems
- The crucial role of context in the operation of the linguistic system

Usage-Based Construction Grammar: Usage-Based Models of Language

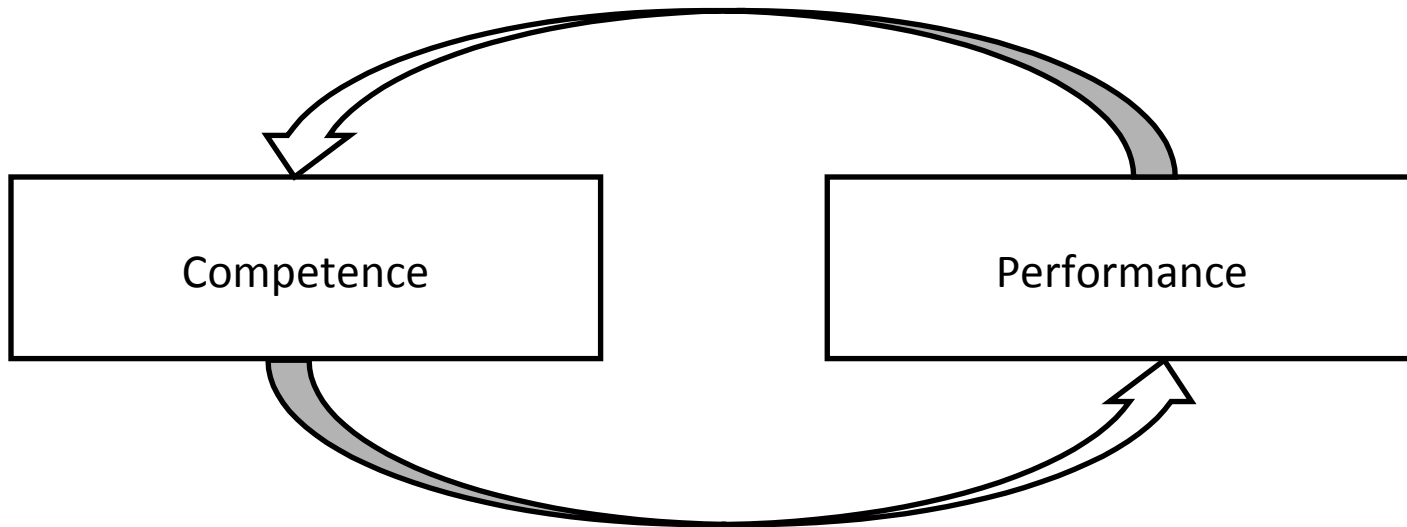
The establishment of language competence as common ground is akin to the establishment of any other type of socio-cultural systems:

“frequency and emergent structure involve more than unmediated linguistic behavior. Situations and their participants are also repetitive phenomena, and linguistic routinization is ultimately inseparable from cultural practices in general.”

(Bybee and Hopper 2001: 21)

Usage-Based Construction Grammar: Usage-Based Models of Language

The competence-performance interplay in
usage-based linguistics



Usage-Based Construction Grammar: Usage-Based Models of Language

- Usage-based linguistics ultimately gives language competence the same status as any other type of system in human cognition.
- Language is subject to the same structures and processes as any other type of cognitive system.
- Language competence is thus, like any other type of cognitive system, experientially based.
- The language system is not maximally general.

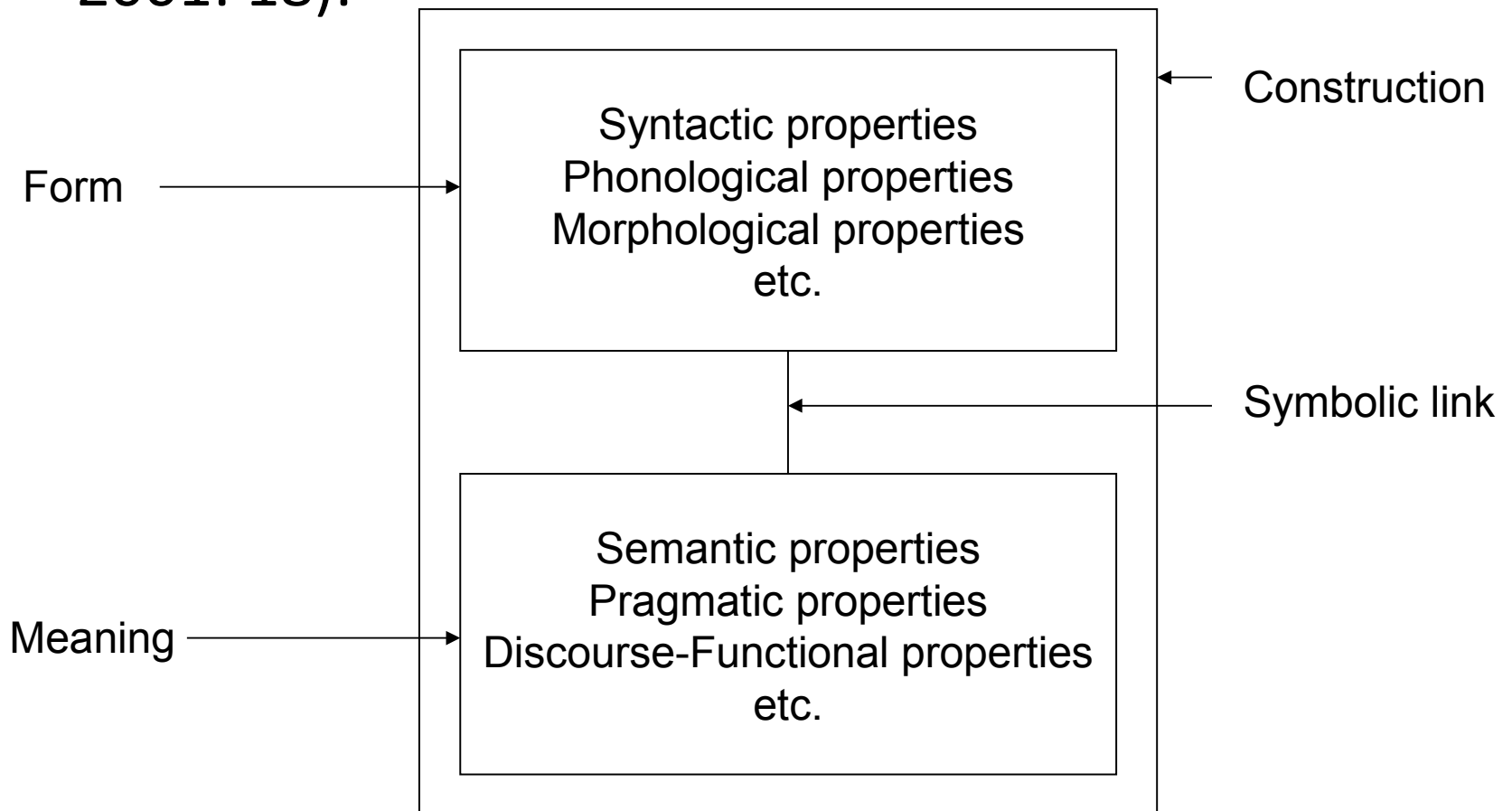
Usage-Based Construction Grammar: Construction Grammar

Principles of construction grammar (e.g. Fillmore 1988, Fillmore et al. 1988, Goldberg 1995, Croft 2001):

- The language system does not consist of abstract syntactic combinatorial rules, but of networks of constructions.
- A construction is a symbolic unit which pairs linguistic form with conventionalized meaning.
- Constructions may be simple, consisting of just one element, or complex, consisting of more than one element. In complex constructions the formal template itself is associated with conventionalized meaning.
- The lexicon and grammar are not strictly separated from each other but form a lexicon-syntax continuum.
- Pragmatic features of constructions are just as integrated parts of the language system as semantic features are.
- A construction has internal properties pertaining to their internal structural make-up and external properties pertaining to the contexts in which it appears.
- Constructions are gestaltic in nature and may, and often do, display varying degrees of idiomaticity.
- Constructions may feature substantive (lexically closed) or schematic (lexically open) elements.

Usage-Based Construction Grammar: Construction Grammar

The anatomy of the grammatical construction (Croft 2001: 18):



Usage-Based Construction Grammar: Construction Grammar

The usage-based take of the grammatical construction:

“an entrenched routine ... that is generally used in the speech community ... and involves a pairing of form and meaning”

(Croft 2005: 274)

Usage-Based Construction Grammar: Construction Grammar

The usage-based take on the grammatical construction

- The network of constructions that constitute the language system (and thus language competence) is inductively acquired.
- The language system is not maximally general but may contain redundancy at all levels.
- The constructional network is emergent – and experientially based.
- The constructional network is organized according to the same structural principles and subject to the same processes as all other aspects of human cognition.
- A construction is best described through empirical observations of its usage patterns.

The [V *until* ADJ]-construction: Preliminaries

Examples of the construction:

- *Bake* rolls 10 to 12 minutes or *until golden*.
- Any type of kale will work in this pasta sauce as long as it *is wilted until tender* before blending.
- I *roasted it until slightly crunchy on the outside and tender in the middle*.
- I feel as if I'm in a stalactite nursery, where limestone formations *are grown until big enough to be shipped off to a real cave*.
- Slowly add broth mixture, *whisking until smooth*.
- *Cook* 3 minutes or *until lightly browned*, breaking up meat into small pieces.

The [*V until ADJ*]-construction: Preliminaries

Formal features of the construction:

- Formal schema: [*V until ADJ*]
- The V-slot is realized by various verb forms (e.g. 'bake' [imperative], 'is wilted' [passive], 'roasted' [past participle], 'whisking' [present participle]).
- The ADJ-slot may be realized by single adjectives (e.g. 'smooth') or adjective phrases featuring premodifiers (e.g. 'lightly browned'), postmodifiers (e.g. 'big enough to be ...'), or both (e.g. 'slightly crunchy on the outside...').
- It may appear with a direct object (e.g. 'I roasted it until slightly crunchy...') or without a direct object (e.g. 'whisking until smooth'), and it may appear with or without adverbials.

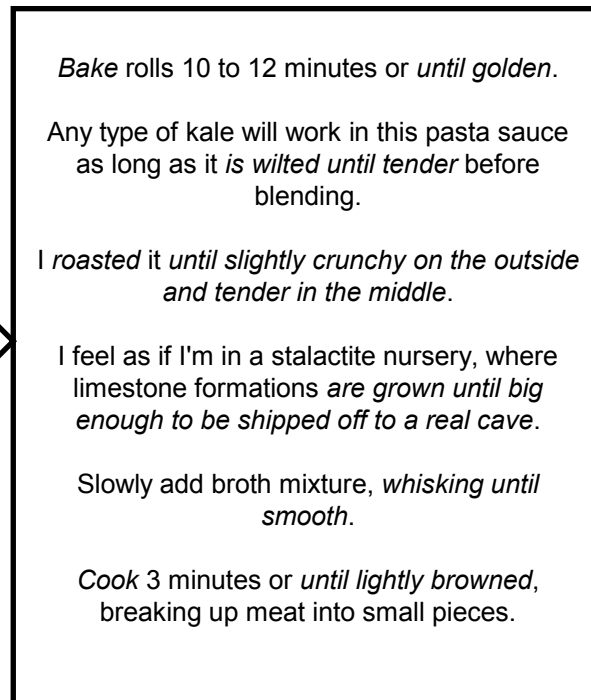
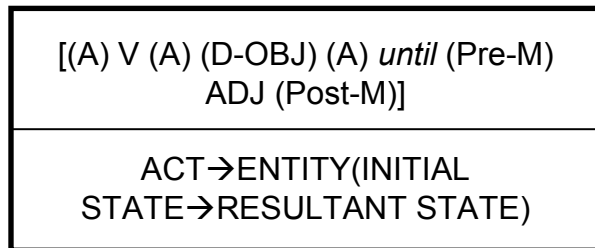
The [*V until ADJ*]-construction: Preliminaries

Semantic features of the construction:

- The construction seems to express a scenario in which the V-slot expresses an act in which an entity, as a result of that act, undergoes a change of state. The resultant state is expressed by the ADJ-slot ('e.g. 'bake ... until golden', 'are grown until big...', 'roasted ... until slightly crunchy ...')

The [V *until* ADJ]-construction: Preliminaries

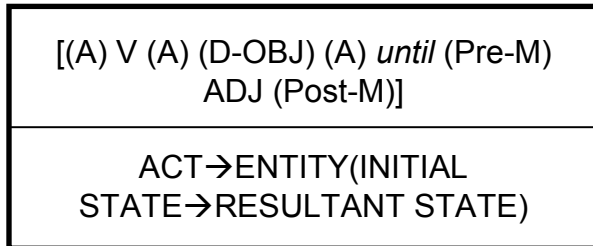
A maximally general rendering of [V *until* ADJ]:



The construction thus licenses all instances of it being put to use in performance.

The [V *until* ADJ]-construction: Preliminaries

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Slowly add broth mixture, *whisking until
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Cook 3 minutes or *until lightly browned*,
breaking up meat into small pieces.

The [*V until* ADJ]-construction: A Usage-Based Description

Data: *Corpus of Contemporary American English* (COCA) – 450 million words, 1990-2012 (Davies 2012)

- 2011 subcorpus - 20,445,868 words.
- 685 usage-events (or instances) of [*V until* ADJ].

The [*V until ADJ*]-construction: A Usage-Based Description

- Collostructional analysis: calculates the attraction of lexical items to a schematic slot in a construction (Stefanowitsch & Gries 2003).
- Covarying collexeme analysis: calculates the co-attraction of two lexemes in two schematic slots in the same construction (Stefanowitsch & Gries 2005) .

The [*V until ADJ*]-construction: A Usage-Based Description


Two important principles:

- Principle of semantic compatibility: “words can (or are likely to) occur with a given construction if (or to the degree that) their meanings are compatible.” (Stefanowitsch & Gries 2005: 4)
- Principle of semantic coherence: “since a word in any slot of a construction must be compatible with the semantics provided by the construction for that slot, there should be an overall coherence among all slots.” (Stefanowitch & Gries 2005: 11)
- Investigating the lexemes attracted to, and repelled from, a construction may thus provide us with an idea of the semantics (and other properties) of the construction itself.

The [V *until* ADJ]-construction: A Usage-Based Description

- Collostructional analysis

- Input frequency 1: Lexeme in construction
- Input frequency 2: Lexeme in all other constructions
- Input frequency 3: Constructon with all other lexemes
- Input frequency 4: All other constructions with all other lexemes.




p-value
(collostruction
strength)

(Fischer-Yates, log-likelihood, or similar)

- Covarying collexeme analysis

- Input frequency 1: Lexeme 1 in slot 1 in construction.
- Input frequency 2: Lexeme 2 in slot 2 in construction
- Input frequency 3: All other lexemes in slot 1 in construction
- Input frequency 4: All other lexemes in slot 2 in construction



p-value
(collostruction
strength)

The [V *until* ADJ]-construction: A Usage-Based Description

- Using Gries' (2007) *coll.analysis* software, I performed:
 - Collostructional analysis of V-slot
 - Collostructional analysis of ADJ-slot
 - Covarying collexeme analysis of V- and ADJ-slots

The [V *until* ADJ]-construction: A Usage-Based Description

Collostructional analysis of V-slot (top 15 attracted items out of 69)

- Virtually all verbs on the top 15 are cookery terms expressing scenarios of preparing ingredients.

COOK → ACT OF PREPARATION → INGREDIENT

- 'Cook' particularly strongly attracted to [V *until* ADJ]

- Semantic subclasses:

- Heating of ingredient
- Cooling of ingredient
- Manipulation of texture of ingredient

} ingredient undergoes change of state

This suggests that the [V *until* ADJ]-construction is strongly associated with cookery terminology/register.

Rank	Lexeme	CollStrength
1	cook	2543.2488136958
2	bake	1363.36600018116
3	saut	649.087856679974
4	whisk	568.351962317863
5	beat	425.949840249938
6	heat	411.013060752841
7	stir	376.293234363189
8	process	278.807456720272
9	puree	259.487946479337
10	roast	200.65426479407
11	grill	192.604240526648
12	microwave	167.030751752012
13	chill	160.470204880830
14	refrigerate	148.525454495313
15	blend	141.900070332377

The [V *until* ADJ]-construction: A Usage-Based Description

Collostructional analysis of ADJ-slot (top 15 attracted items out of 53)

- With the exception of 'ready' virtually all attracted items express physical states/features.
- Semantic subclasses:
 - Texture/constitution
 - Color
 - Smell
 - Temperature
 - Other

Perceivable through our primary senses (tactile, olfactory, visual etc.)

This suggests that the ADJ-slot serves primarily to express physical states of the ingredient in the ingredient preparation scenario – especially physical states that can be perceived via our senses (tactile, olfactory, visual etc.)

Rank	Leseme	CollStrngth
1	smooth	1935.06954928982
2	tender	1469.46855062709
3	brown	1168.96991703839
4	golden	1029.79557710478
5	fragrant	409.452063050227
6	hot	324.314851694815
7	soft	242.393151625368
8	creamy	232.712198988923
9	crisp-tender	224.590275968538
10	crisp	215.584909013357
11	ready	210.000731829166
12	crumbly	149.665968757806
13	foamy	140.22579932284
14	translucent	129.803196849299
15	firm	104.984543429229

The [V *until* ADJ]-construction: A Usage-Based Description

Covarying collexeme analysis of ADJ-slot (top 15 co-attracted items out of 186)

- In most cases, there is a more or less natural relation between the act and the resultant state, in the sense that the item in the ADJ-slot describes a physical properties which is a likely, or logical, result of the act itself:

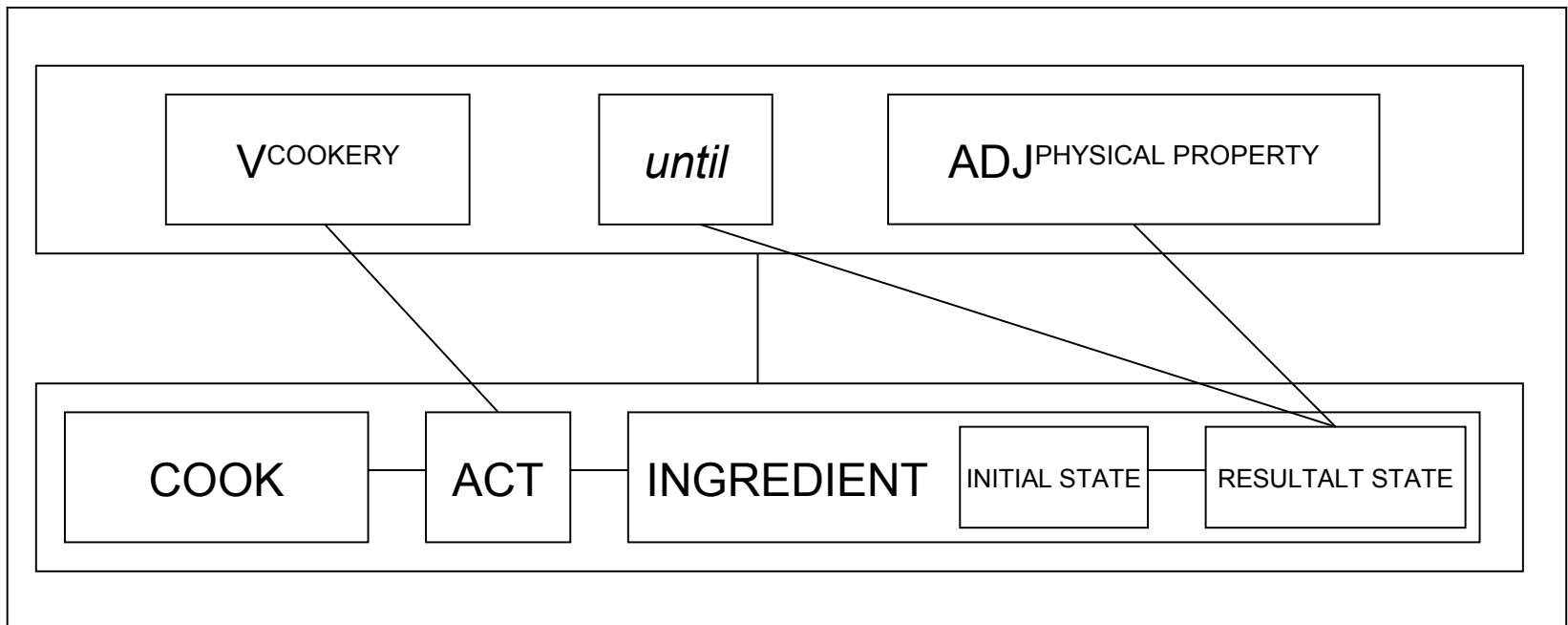
- process → smooth
- puree → smooth
- heat → hot
- heat → shimmering
- bake → golden
- bake → brown

- This suggests that [V *until* ADJ] does indeed express a cause-effect scenario.

Rank	V	ADJ	CollStrength
1	process	smooth	77.4883250053926
2	whisk	smooth	74.3081493119387
3	heat	hot	71.7345772456578
4	chill	ready	62.1620612323359
5	cut	crumbly	57.341948534496
6	bake	brown	54.4547827592036
7	puree	smooth	52.0719010329519
8	bake	golden	45.5595208552395
9	beat	creamy	45.4066658218417
10	refrigerate	ready	44.6294558208117
11	soften	spoonable	44.1175683192719
12	heat	shimmering	38.7750581515116
13	blend	smooth	31.373010761743
14	beat	fluffy	30.005860958968
15	boil	tender	26.3781687405439

The [V *until* ADJ]-construction: A Usage-Based Description

The collostructional analyses allow us to set up this constructional schema for [V *until* ADJ]:



The collostructional analyses indicate that [V *until* ADJ] is an item-class-specific construction (Croft 2003: 57-58; Tomasello 2003: 139).

The [*V until* ADJ]-construction: A Usage-Based Description

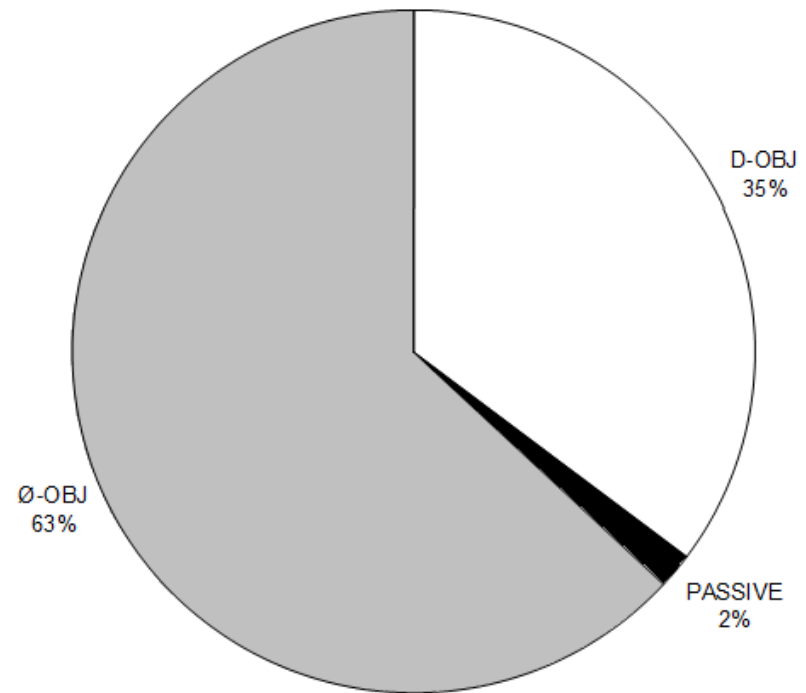
Other usage-patterns investigated:

- Transitivity contexts
- Mood of V-element
- Speech act function
- Presence or absence of accompanying time adverbials
- Discursive domain (or topic)
- Text genre

The [V *until* ADJ]-construction: A Usage-Based Description

Transitivity contexts:

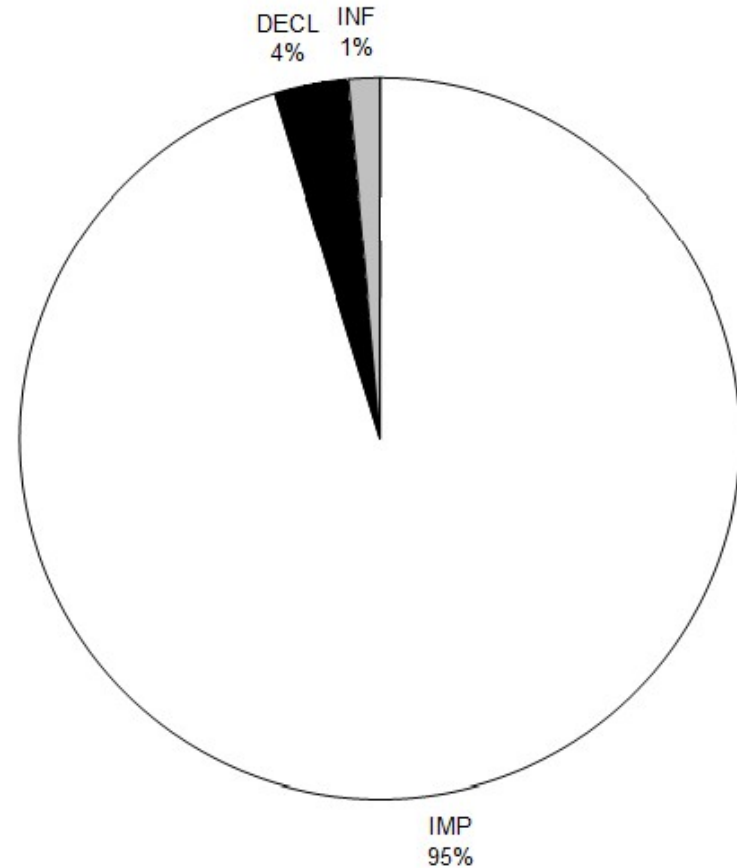
- Direct object present:
 - *Simmer fish just until opaque.*
- Direct object absent:
 - *Stir until smooth.*
- Passive:
 - At that point it was covered and cooked until tender.



The [V *until* ADJ]-construction: A Usage-Based Description

Mood of V-element:

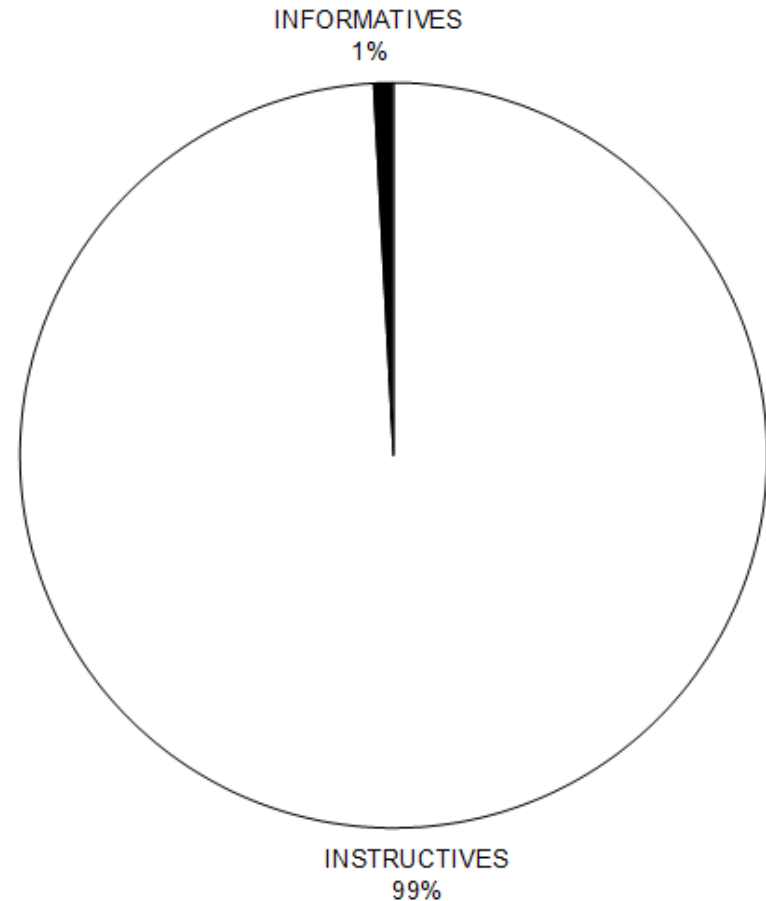
- Imperative:
 - *Bake* spinach pies *until golden brown*
- Declarative:
 - The breast was *cooked* sous vide style *until rare...*
- Infinitive:
 - Let *stand* *until creamy* (a few minutes)...



The [V *until* ADJ]-construction: A Usage-Based Description

Speech act function:

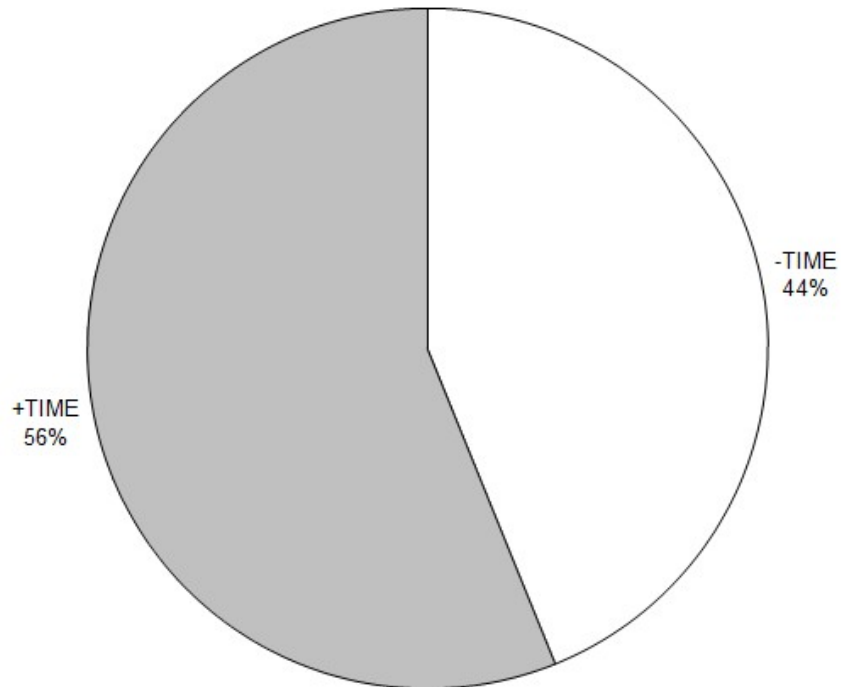
- Instructive:
 - Add onion and water to skillet; *cook* 5 minutes or *until tender*, stirring and scraping pan.
 - Slowly add broth mixture, *whisking until smooth*.
- Informative:
 - It's a dessert that would hold up on any menu today - a buttery shortbread shell that's *baked until golden*, then filled with a creamy caramel and slivered almonds. After a spell in the oven, the filling bubbles over and darkens, hardening into a candy-like tart that can be sliced into wedges and picked up to eat. Waters said they had special pot holders - crusted with hardened caramel - specifically for turning the tart.



The [V *until* ADJ]-construction: A Usage-Based Description

Time adverbials

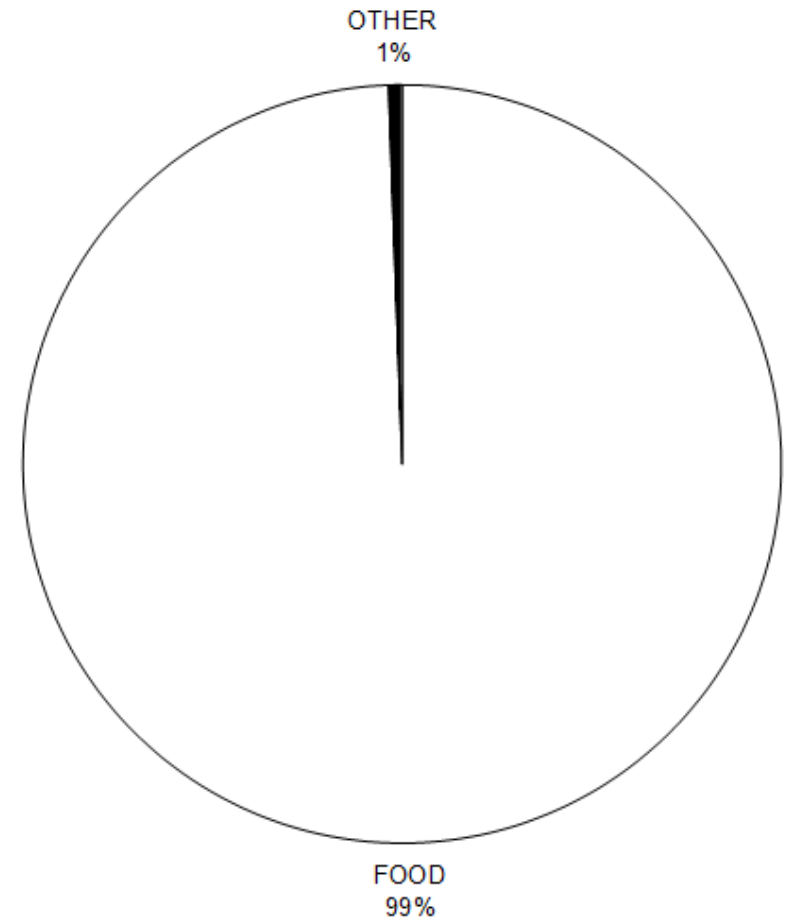
- Absent:
 - *Process until smooth*; pour over chicken.
 - Drain; *immerse* in ice water *until cold*.
 - ...and *cook until hot* but not boiling.
- Present:
 - ...*microwave* on High 5 minutes or until tender.
 - In a skillet over medium heat, *cook* 1 slice prosciutto *until crisp*, about 1½ minutes.
 - Return to boil, cover, and *steam until crisp-tender*, 3 to 6 minutes.



The [V *until* ADJ]-construction: A Usage-Based Description

Discursive domain (topic):

- Food/cooking
- Other



The [*V until* ADJ]-construction: A Usage-Based Description

Usage-patterns:

- Associated with instructive texts (imperatives, instructive speech act functions)
- Associated with formally economical texts (absent direct object)
- Associated with the discursive domain of food and cooking
- Associated with the register/terminology of cookery (attraction of cookery terms to the V-slot)
- Serves as an alternative to time intervals (lack of exactness in time adverbials, attraction of items expressing perceivable physical properties)

The [V *until* ADJ]-construction: A Usage-Based Description

Usage-patterns:

- [V *until* ADJ] appears most frequently in recipes:
 1. Arrange a tight layer of malted milk balls (3 cups) over crust. *Stir* ice cream with cocoa powder and malted milk powder *until smooth*. Spoon into crust, set on a plate, and freeze 5 hours.
 2. *Heat* 1/2 cup cream meanwhile *until simmering*. Put chocolate in a small metal bowl, pour in cream, and let sit until chocolate is melted, about 2 minutes. *Stir until smooth*. Let cool completely.
 3. Smooth chocolate ganache over top of pie and *freeze until set*, about 15 minutes.
 4. Whip remaining Vz cup cream and swirl onto pie. Chop some malted milk balls and drop onto pie; add a few whole balls. Remove rim and serve immediately.

The [*V until* ADJ]-construction: A Usage-Based Description

The primary communicative function of [*V until* ADJ] appears to be twofold:

- Instructing the reader in preparing an ingredient when cooking a meal (V-slot)
- Giving the reader a cue as to when the preparation of the ingredient is complete (ADJ-slot)

The [*V until ADJ*]-construction: A Usage-Based Description

- If our model of the language competence pertaining to [*V until ADJ*] is to be communicatively relevant and realistic, then we need to take into account the usage-patterns observed here.
- That is, the communicative purpose of the construction and the usage-based external properties suggested here should be considered part of the language competence (in the language system) associated with [*V until ADJ*].

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