Lecture 3: Cognitive Approaches to Grammar: An Introduction to the Study of the Symbolic Linguistic Units

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Topic 1

Cognitive Grammar

References

- Evans, Vyvyan & Melanie Green. 2006. *Cognitive Linguistics: An Introduction*. Mahwah, NJ: Lawrence Erlbaum Associates

- Geeraerts, Dirk. 2006. 'A rough guide to cognitive linguistics'. In Dirk Geeraerts, ed. *Cognitive Linguistics: Basic Readings*. Berlin: Mouton de Gruyter. 1-28.

Introduction

- Topic:
  An overview of Cognitive Grammar

- Purpose:
  To illustrate what a usage-based model of language (cognitive grammar) looks like

Introduction

➢ Cognitive Grammar:

- Ronald Langacker's model

- An attempt to understand language not as an outcome of a specialized language module, but as the result of general cognitive mechanisms and processes

→ It upholds the "generalization" commitment.

Introduction

➢ The modular view by formal models:

- Language is a system of "words and rules" consisting of a lexicon, a syntactic component containing rules of combination that operate over lexical units, and other components governing sound and sentence meaning.

→ This view is rejected in Cognitive Grammar.

Introduction

➢ Cognitive Grammar:

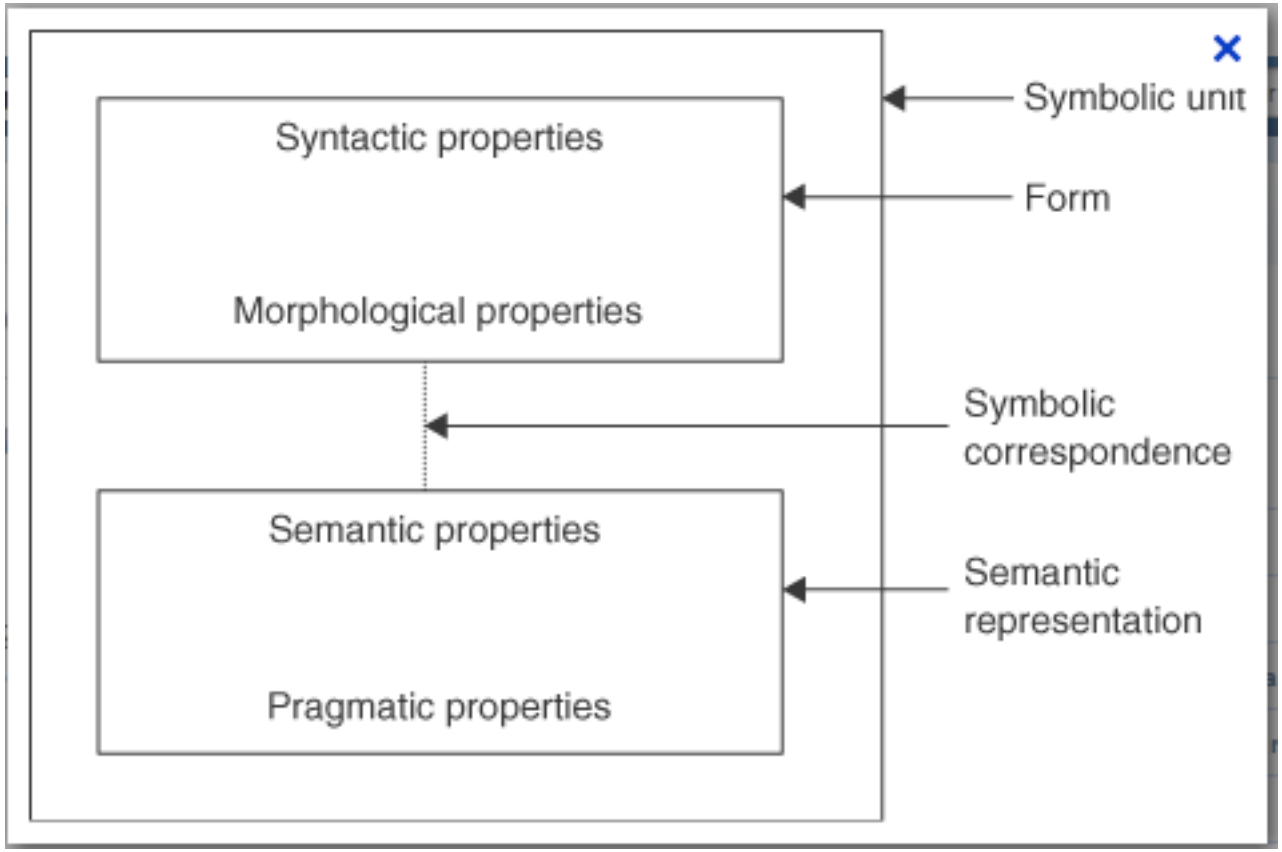
- Takes a symbolic or constructional view of language

→ There is no distinction between syntax and lexicon.

→ Grammar consists of an inventory of units that are form-meaning pairings: morphemes, words, and grammatical constructions.

Introduction

- Symbolic assemblies: all within a single representation



Abstraction and schematization

➢ How do the units that make up the grammar derive?

- Cognitive Grammar:
  They derive from language use.

→ By processes of abstraction and schematization

Abstraction and schematization

➢ Abstraction:

- The process that allows structure to emerge as the result of the generalization of patterns across instances of language use

- E.g. Speaker acquiring English will, as the result of frequent exposure, “discover”:

→ recurring words, phrases, and sentences together with the range of meanings associated with those units

Abstraction and schematization

➢ Schematization:

- A special kind of abstraction
- Results in representations that are much less detailed than the actual utterances that give rise to them

- Schematization results in schemas.

→ Points of difference between actual structure are set aside.

→ Only the points they have in common are left.

Abstraction and schematization

- Three slightly different meanings of *in*:

a. The kitten is in the box. (containment)
b. The flower is in the vase. (the flower partly protrudes from the vase)
c. The crack is in the vase. (the crack is on the exterior of the vase)

- Commonality in these utterances:
  Abstract notion of enclosure (this establishes the schema for *in*)

Abstraction and schematization

- Symbolic assemblies:

- There are various kinds of symbolic assemblies:

Abstraction and schematization

→ words (e.g. *cat*)

→ idioms (e.g. *He/she kick*-TENSE *the bucket*)

→ bound morphemes (e.g. the plural marker [-*s*])

→ syntactic constructions (e.g. the ditransitive construction)

Abstraction and schematization

- Summary:
  Abstraction and schematization (fundamental cognitive processes) produce schemas based on usage events or utterances.

- General cognitive processes are fundamental to grammar.

- Emergence of grammar as a system of linguistic knowledge is grounded in language use.

Schemas and their instantiations

➢ View held by cognitive linguists:
Grammar not only derives from language use, but also in part motivates language use.

- By licensing or sanctioning particular language patterns.

- A usage pattern instantiates its corresponding schema.

→ Instantiations are specific instances of use, arising from a schematic representation.

Schemas and their instantiations

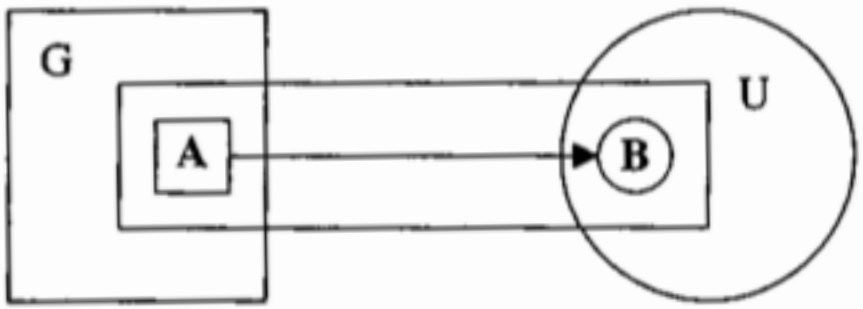


Figure 4.1 An instantiation of a schema (adapted from Langacker 2000: 10)

- G: the repository of conventional units of language (grammar)
- U: a particular usage event (utterance)
- A: a conventional unit (a symbolic assembly)
- B: a specific linguistic element within an utterance
- →: B instantiates schema A (A sanctions B)

Partial sanction

➢ Restrictions imposed on language use:

- Language use is not a simple case of language users making use of the finite set of symbolic assemblies in their grammar.
- Richness and variety of situations exceed the conventional range of units a language possesses.

→ But the inventory of constructions is finite.

Partial sanction

➢ Solution to the restrictions:

- Use of linguistic units in ways that are only partially sanctioned by the range of constructions available in the language

→ Language use is often partially innovative.

Partial sanction

➢ E.g. the word *mouse*:

- Recently acquired a new meaning

→ It refers not only to a rodent, but also to a computer “mouse”.

→ When the latter first appeared, it was an innovation.

→ It was only partially sanctioned by the existing construction.

Partial sanction

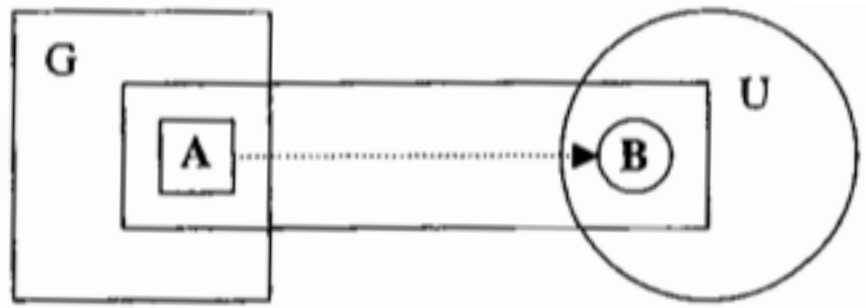


Figure 4.2 Partial sanction by a schema (adapted from Langacker 2000: 10)

- A: linguistic unit with the form *mouse* and the meaning RODENT
- B: same form but the meaning PIECE OF COMPUTER HARDWARE USED TO CONTROL THE CURSOR
- dotted arrow: partial sanction

Partial sanction

➢ Partial sanction and language change:

- Partial sanction only results in language change, when it is diffused through a linguistic community and becomes established as a conventional unit in its own right.

The non-reductive nature of schemas

➢ Cognitive Grammar:
A non-reductive model

- One of the factors involved in the establishment of constructions is frequency.

→ If a particular linguistic structure recurs sufficiently frequently, it achieves the status of an entrenched unit.

→ As a result of the process of entrenchment, schemas result that have different levels of schematicity.

The non-reductive nature of schemas

- Some schemas are instances of other, more abstract, schemas.

→ In this way, the grammar acquires an internal hierarchical organization.

→ Less abstract schemas are instances of more abstract schemas.

The non-reductive nature of schemas

- Extension and schematization:
  [TREE]

1. Fruit tree
2. Beech tree
3. Pine tree
4. Palm tree
5. Phrase structure tree

The non-reductive nature of schemas

- Use of prepositions (e.g. *for*, *on*, *in)* in preposition phrases:

(a) to [me]
(b) on [the floor]
(c) in [the garage]

- These probably have unit status for most speakers of English.

The non-reductive nature of schemas

- They are instances of the more abstract schema [P [NP]] (meaning DIRECTION OR LOCATION WITH RESPECT TO SOME PHYSICAL ENTITY).

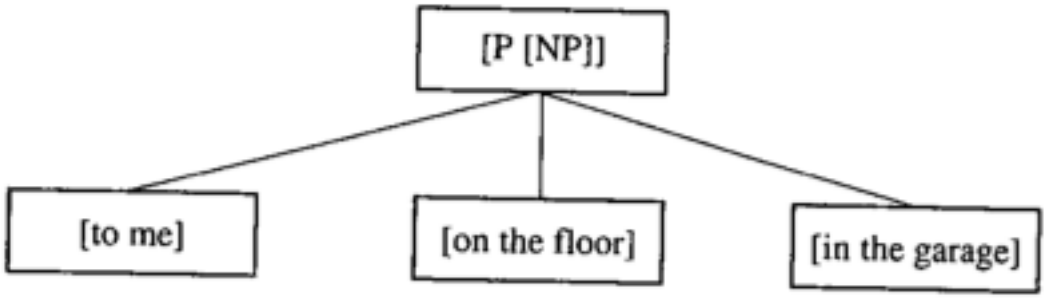


Figure 4.3 Schema-instance relations

The non-reductive nature of schemas

➢ What makes this view of grammar non-reductive:

- The constructions in (a-c) can be predicted by the more general schema.

- But, this does not mean that they can be eliminated from the grammar.

The non-reductive nature of schemas

- The fact that they are frequently occurring ensures that they retain unit status.

- The fact that they share a similar structure and a common abstract meaning ensures that the more abstract schema also coexists with them in the grammar.

The non-reductive nature of schemas

➢ Differences between this view of grammar and that of the generative grammar model:

- It stands in direct opposition to the generative grammar model.

→ The generative grammar model places emphasis on economy of representation.

The non-reductive nature of schemas

➢ Why economy of representation?

- Because the generative grammar model assumes that the rapid acquisition of an infinitely creative system of language can only be plausibly accounted for by a small and efficient set of principles.

- It seeks to eliminate redundancy.

→ The same information does not need to be stated in more than one place.

The non-reductive nature of schemas

➢ The generative grammar view:

- Expressions in (a-c) are predictable from the more abstract schema.

→ They can be eliminated from the grammar.
→ They are "built from scratch" each time they are used.

The non-reductive nature of schemas

- The only construction that would be stored in the grammar is the abstract schema.

→ But, this schema lacks schematic meaning.

→ It would have the status of an "instruction" about what kinds of forms can be combined to make grammatical units.

In the generative model: a schema = a rule

The non-reductive nature of schemas

➢ Schemas vs. rules:

- Schemas:

  They are derived from language use and thus incorporate a meaning.

- Rules:

  They are minimally specified structural representations that predict the greatest amount of information possible in the most economical way possible.

Frequency in schema formation

➢ Cognitive Grammar:

- Usage affects grammatical representation in the mind.

- Frequency of use correlates with entrenchment.

Frequency in schema formation

- Two types of frequency:

1. Token frequency
2. Type frequency

→ They both give rise to the entrenchment of different kinds of linguistic units.

Frequency in schema formation

➢ Token frequency:

- Gives rise to the entrenchment of instances
- Refers to the frequency with which specific instances are used in language

→ *falsehood* vs. *lie*

Frequency in schema formation

➢ *falsehood* vs. *lie*

- The latter is much more commonly used.
- The former is much more restricted in use.

→ This gives rise to differential entrenchment of the mental representation of these forms.

Frequency in schema formation

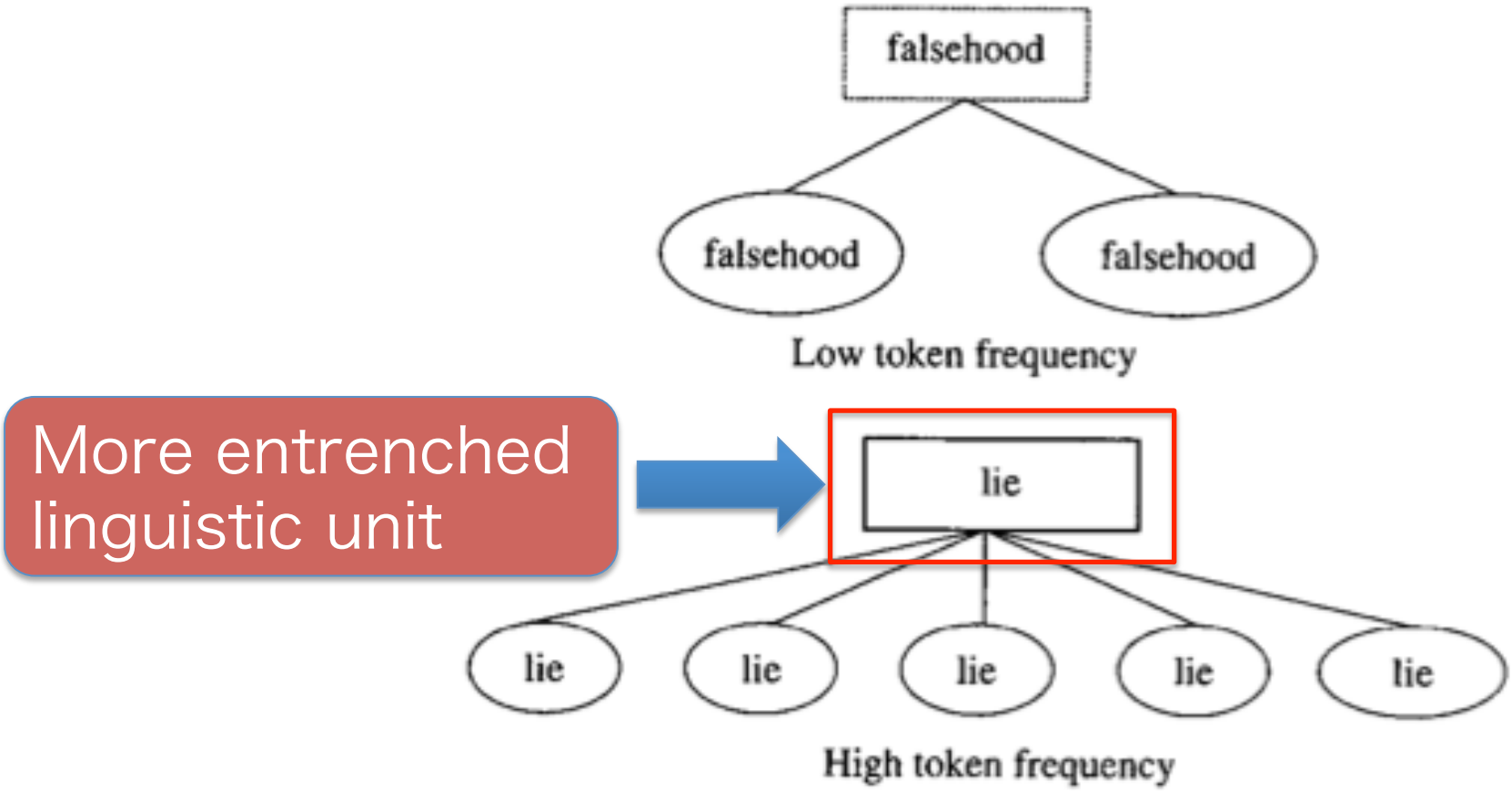


Figure 4.4 Frequency effects and entrenchment of instances

Frequency in schema formation

➢ Type frequency:

- Gives rise to the entrenchment of more abstract schemas.
- *lapped*, *stored*, *wiped*, *signed*, *typed*

→ instances of the past tense schema [VERB*ed*]

- *flew*, *blew*

→ instances of the past tense schema [XX*ew*]

There are fewer distinct lexical items of the latter type.

Frequency in schema formation

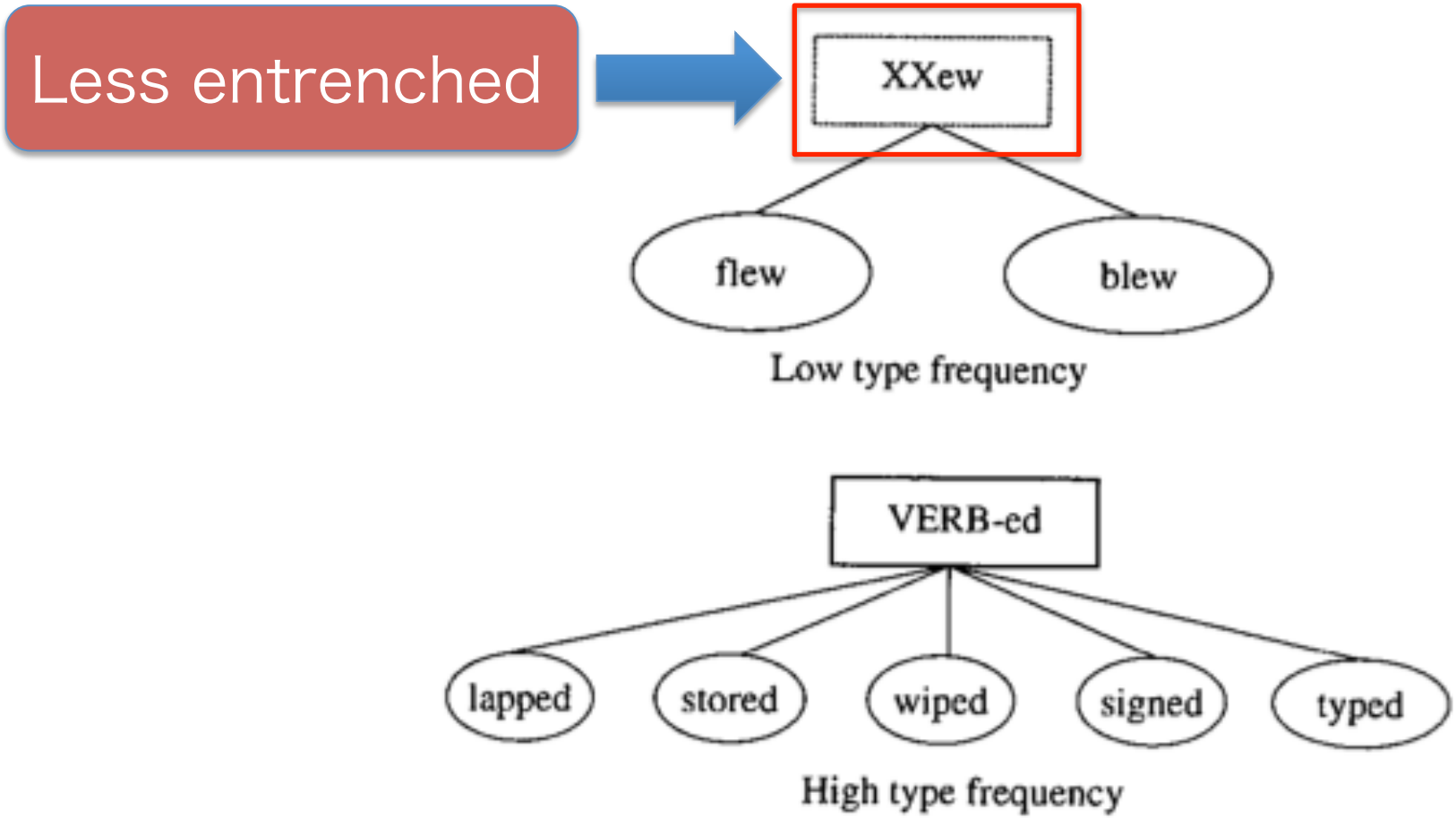


Figure 4.5 Frequency effects and entrenchment of schemas

Frequency in schema formation

➢ The non-reductive nature of the model:

- The predictability of an instance from a schema does not entail that the instance is not also stored in the grammar.

→ Indeed, a unit with higher token frequency is more likely to be stored.

Frequency in schema formation

- Empirical evidence for the view that frequency correlates with degree of entrenchment:

- Bybee and Slobin (1982):
  Highly frequent irregular forms resist regularization, while infrequent irregular forms tend to become regularized over time.

Frequency in schema formation

Table 4.1 Past tense endings of selected verbs in 1982 (based on Bybee and Slobin 1982)

Most frequent	Less frequent	Infrequent
past form *-t* only	past form *-ed* or *-t*	past form *-ed* only
bend – bent	blend – blended/blent	wend – wended
lend – lent	geld – gelded/gelt	
send – sent	gird – girded/girt	
spend – spent	rend – rended/rent	
build – built		

Frequency in schema formation

- More frequently used irregular verbs like *lend* have retained the irregular past tense form (*lent*).

- Less frequent forms like *blend* could alternate between the irregular form with –*t* (*blent*) and the regular past tense form with the suffix –*ed* (*blended*).

- Highly infrequent forms like *wend* were by 1982 listed only with the regular past tense suffix (*wended*).

Exercises

1. The view advocated by cognitive linguists like Langacker is that a grammar sanctions language use: the conventional symbolic units that make up a language license new and ongoing language use.

   Adopting this hypothesis, explain how Langacker's usage-based approach allows and explains language change.