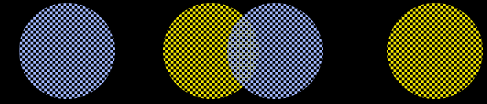


Construction Grammar II: What's a construction?



Benjamin Bergen
Department of Linguistics
University of Hawai`i, Manoa

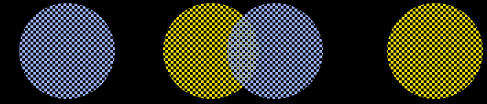
Construction Grammars



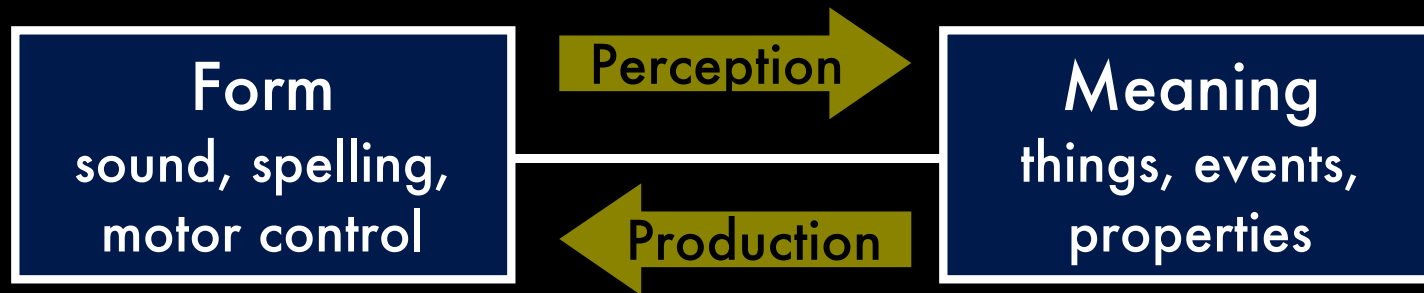
This talk

1. Constructions are form-meaning pairings
2. The form pole
3. The meaning pole
4. Constituency
5. The construction

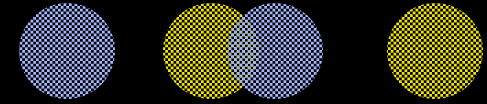
1. Constructions



Constructions: form-meaning pairings



1. Constructions



Constructions: form-meaning pairings

– Words

elbow, pink, mountain-climbing, hello, etc.

– Parts of words (morphemes)

-ish (as in blue-ish), re- (as in re-say)

– Idioms

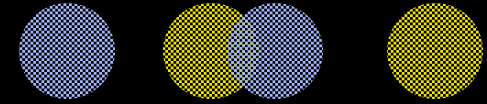
bite the bullet has a specific meaning (to accept having to do something difficult)

that's not predictable from its parts

ride the fence (to be undecided)

a dime a dozen (not very valuable)

1. Constructions



Constructions: form-meaning pairings

– Grammatical structures, too!

[The patient] crutched [to the door].

Meaning: Motion along a trajectory

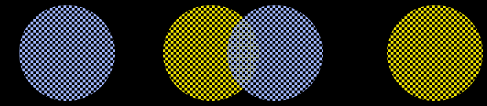
[The patient] crutched [the apple] [to the door].

Meaning: Forced motion along a trajectory

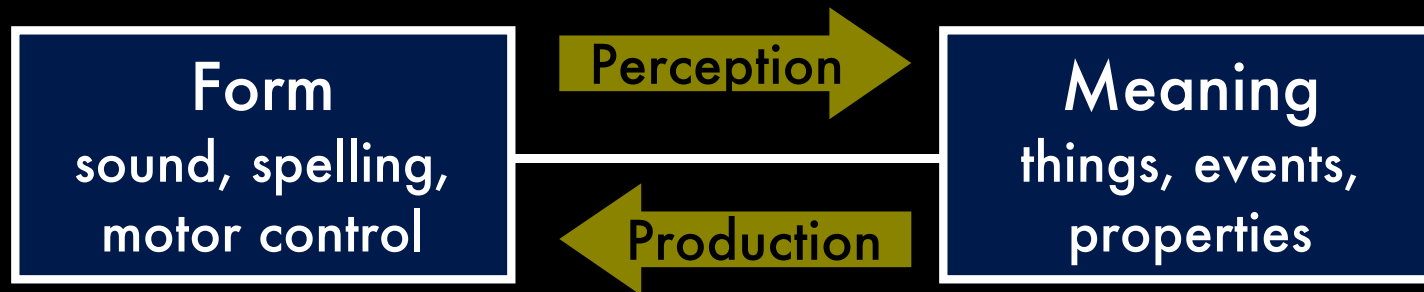
[The patient] crutched [the nurse] [the apple].

Meaning: Transfer of possession

1. Constructions

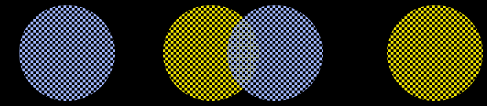


Constructions: form-meaning pairings



Construction X
Form: Y
Meaning: Z

1. Constructions



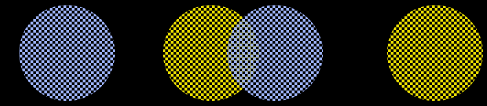
As analysts, how do we know when to hypothesize a construction?

“Classic” criterion: any form-meaning pairing not predictable on the basis of other constructions is a construction (Goldberg 1995, 2003)

– E.g. *bite the bullet*

If people know it, our grammar has to represent it

1. Constructions



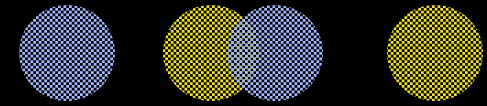
But language users store even predictable form-meaning pairings as units

- E.g. High frequency regular forms, like *wanted*, *it turns out that*, and *I see*

Types of processing evidence: recall and recognition rate, priming behavior, order of acquisition, etc. (McWhinney, Bates, etc.)

“Cognitive” criterion: a construction is any form-meaning pairing that psycholinguistic evidence shows people store

2. Form



Constructions specify what sounds they include

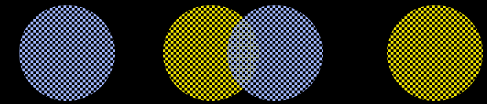
- Lexical constructions specify their phonemes

“Luc” has /l/, /y/, and /k/

- More general constructions can specify not individual phonemes but classes of phonemes (sounds with specific features)

E.g. the English plural morpheme -s can be pronounced as voiceless /s/ (as in *monks*) or voiced /z/ (as in *monkeys*); a general construction for plural -s encompassing both of these would be unspecified for voicing

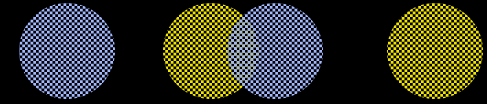
2. Form



Also *prosody*: the timing and stress of sounds and words

- Spanish *MAma* versus *maMA*
- *Llllllet's get ready to rumblllllllllllle!*

3. Meaning



Constructions also specify meaning content

- Conceptual categories

vegetarian, purple, swimming

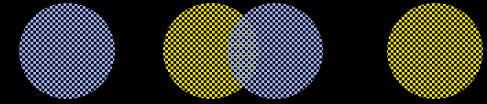
- Individual referents

The Taj Mahal, Laura Michaelis, The New York City Marathon

- Contextually contingent referents

you, here, next Monday

3. Meaning

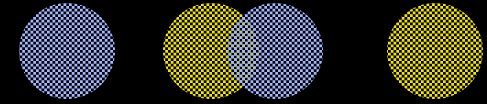


Information structure

- Constructions can specify particular parts of a sentence as playing a special role in discourse, like being the focus or topic

Anchovies, I can't stand.

3. Meaning

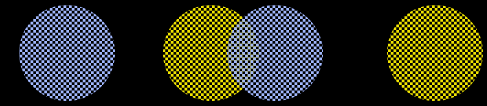


Grammatical constructions provide meaning in 3 ways

A. Provide meaning just as lexical constructions do

- Obvious cases are idioms like *bite the bullet*
- Also clausal constructions, as we saw with *crutching*

3. Meaning



B. Specify higher order properties of meaning

- Aspect: how to mentally represent the event

Gargamel was eating a smurf vs.

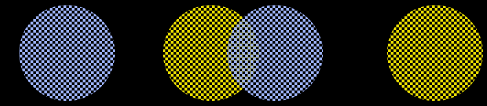
Gargamel ate a smurf

- Person: perspective to adopt in mentally representing the event

You are driving straight towards a brick wall.

The motorcyclist is driving straight towards a brick wall.

3. Meaning



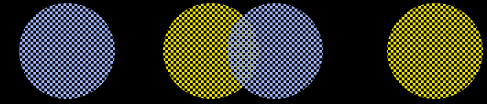
C. Bind together semantic contributions of words

- Clausal constructions determine who did what to whom, and how

Johnny put the monkey in the cage.

The monkey put Johnny in the cage.

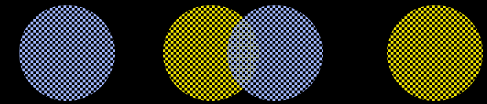
4. Constituency



Utterances are hierarchically organized

- Some constructions have slots that can be filled by other pieces
- Instances of constructions are bound together with these slots when they are compatible (when they can unify)

4. Constituency



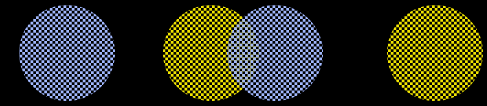
Constructions identify their constituents and place constraints on them

Construction X
(Properties of X)

Constituent Y
(Constraints on Y)

Constituent Z
(Constraints on Z)

4. Constituency



For instance, imagine a construction that has just a proper noun and a verb that it is the subject of. Would be used, e.g., for *Bill snores*.

Simple Intransitive Construction

Form: Noun > Verb

Meaning: Verb(Noun)

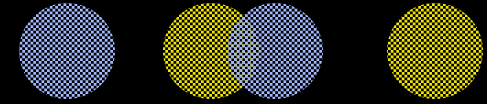
Noun

Meaning: Refers to something

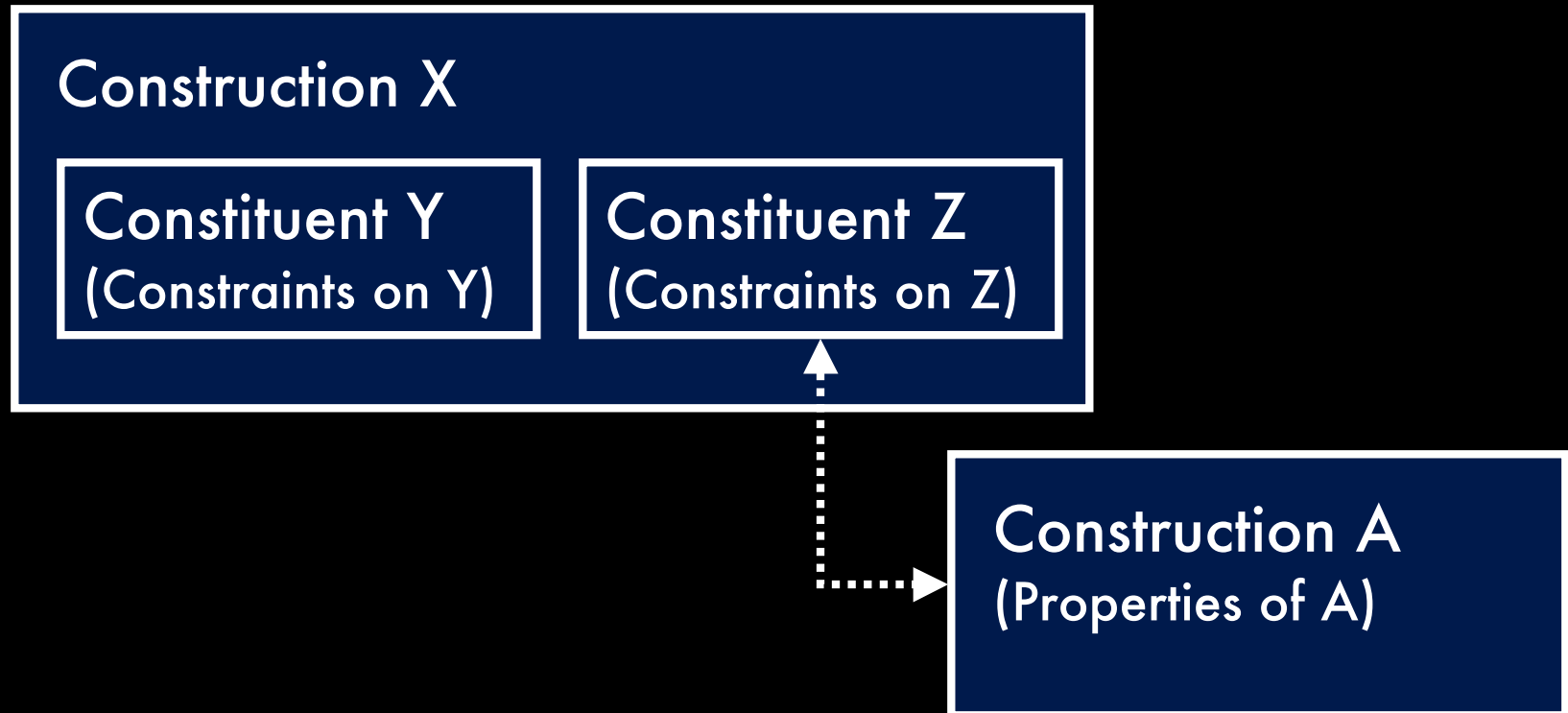
Verb

Meaning: Event

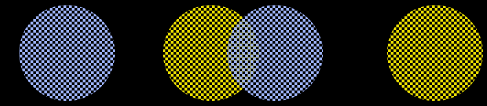
4. Constituency



Constructions satisfying the constraints on another construction's constituent can *bind* or *unify* with it



4. Constituency



For example...

Simple Intransitive Construction

Form: Noun > Verb

Meaning: Verb(Noun)

Noun

Meaning: Refers to
something

Verb

Meaning: Event

Martin Construction

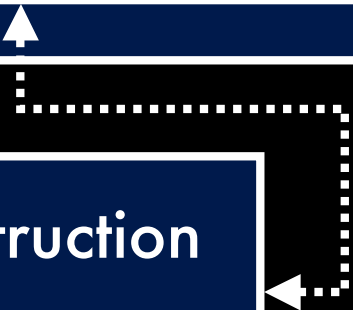
Form: /martIn/

Meaning: Martin-person

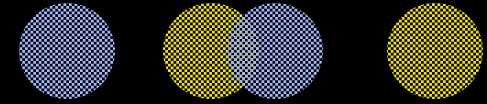
Bites Construction

Form: /bayts/

Meaning: Biting-action



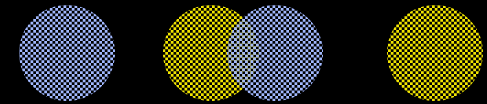
4. Constituency



Constructions place various restrictions on constituents

- Form constraints
- Meaning constraints
- Constructional constraints

4. Constituency



Form: Aside from phonological and prosodic constraints, constructions can impose ordering constraints on constituents

- Immediate precedence

French indicative clauses: direct object pronouns immediately precede the verb: *Je le vois*

- Global precedence

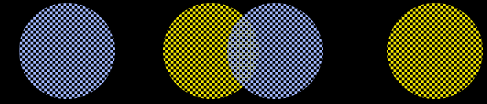
Articles in English NPs must precede the noun, but other words (like adjectives) can intervene: *the orange cat*

- Absolute position in a phrase

Inflected German verbs go in 2nd position:

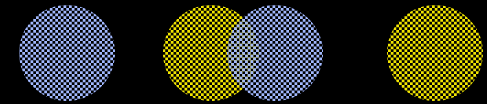
*Ich sah ihn; Ihn sah ich, but not *Ich ihn sah*

4. Constituency



Meaning: Constructions can constrain their constituents through broad semantic categories, as we saw previously (events or types of thing, for example)

4. Constituency



Constructional constraints on constituents

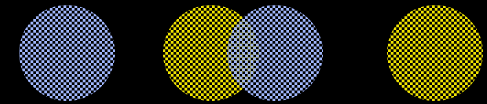
- Grammatical categories, like grammatical gender

For instance the Italian *alla X* construction requires a feminine filler for *X* (e.g. *diavola*)

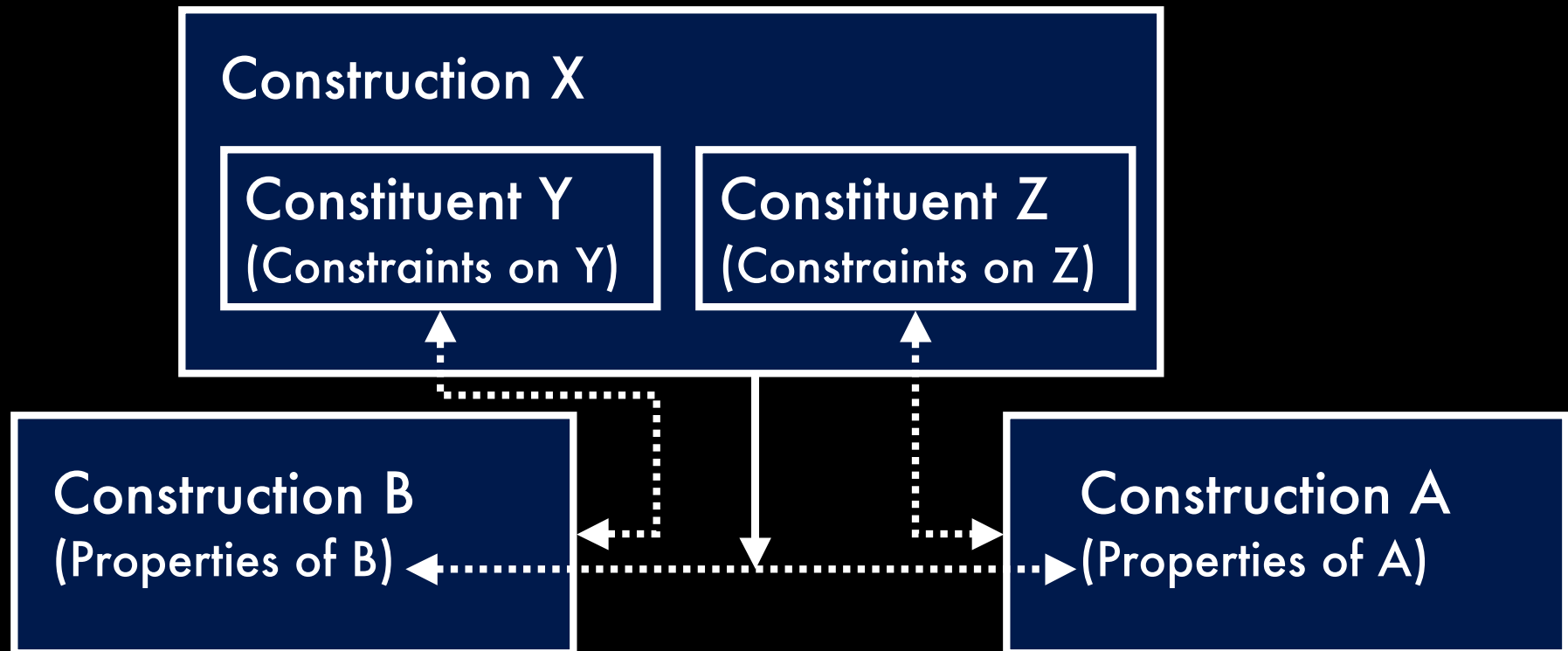
- Class of construction, like nouns or prepositions

The simple intransitive construction we saw before might constrain the first constituent to be a noun.

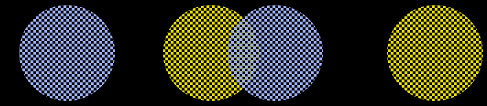
4. Constituency



These constraints can include bindings among properties of the different constituents



4. Constituency



For instance...

Simple Intransitive Construction

Form: Noun > Verb

Meaning: Verb(Noun)

Noun

Meaning: Refers to
something

Verb

Meaning: Event

Martin Construction

Form: /martIn/

Meaning: Martin-person

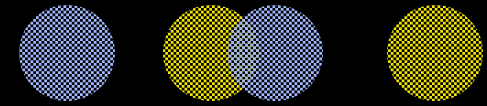
Bites Construction

Form: /bayts/

Meaning: Biting-action
(Biter)



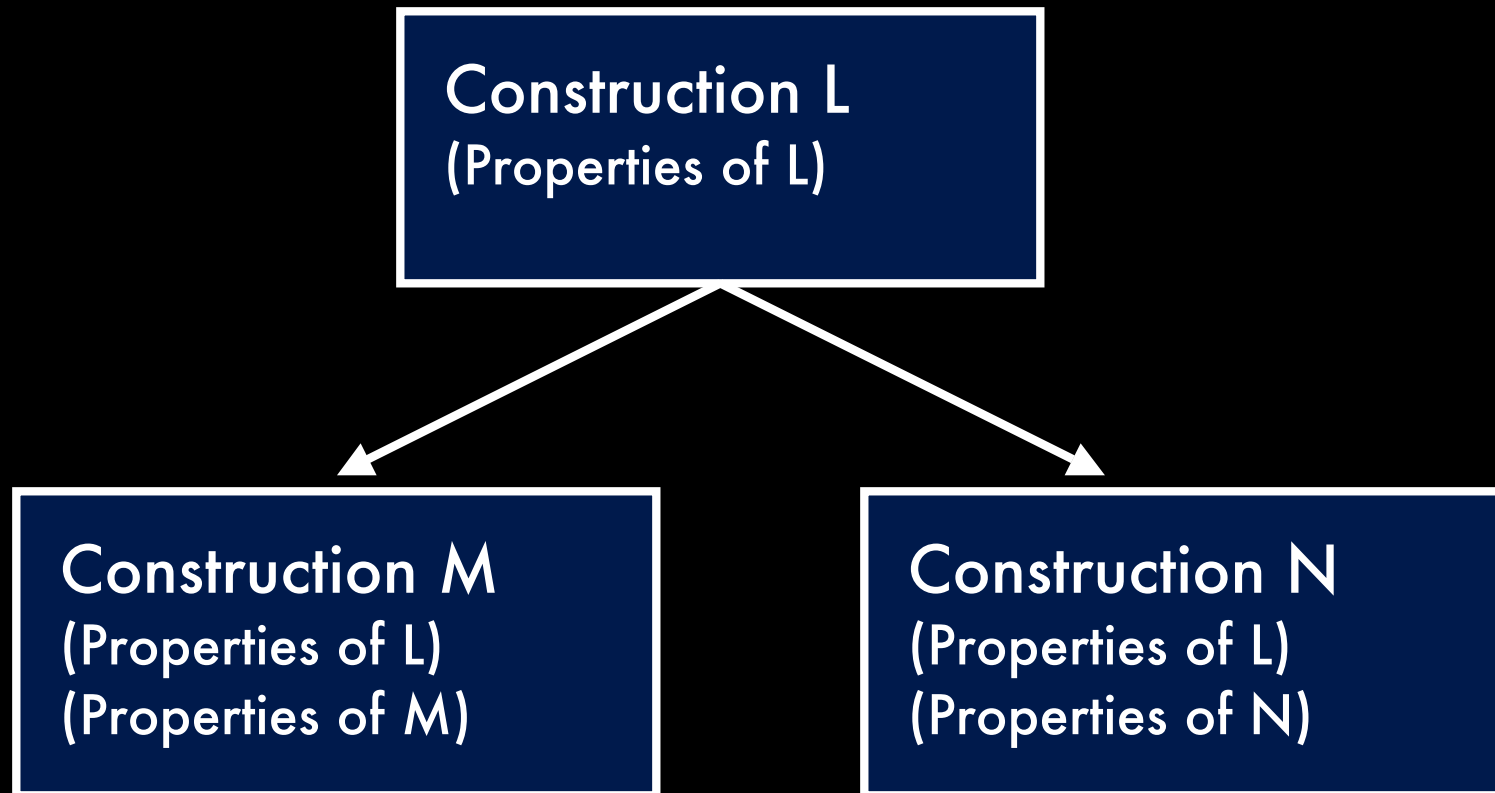
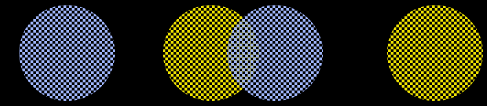
5. The constructicon



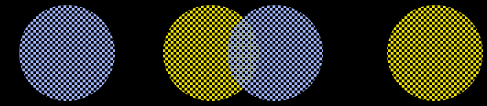
The repository of grammatical information, the *constructicon* (a *lexicon* for constructions), is usually thought to be hierarchically organized

In most CGs, this inheritance is *full*; everything in a parent is inherited by the daughter

5. The construction



5. The construction

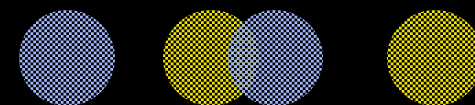


Proper-Noun Construction
Form: Word
Meaning: Specific-Referent

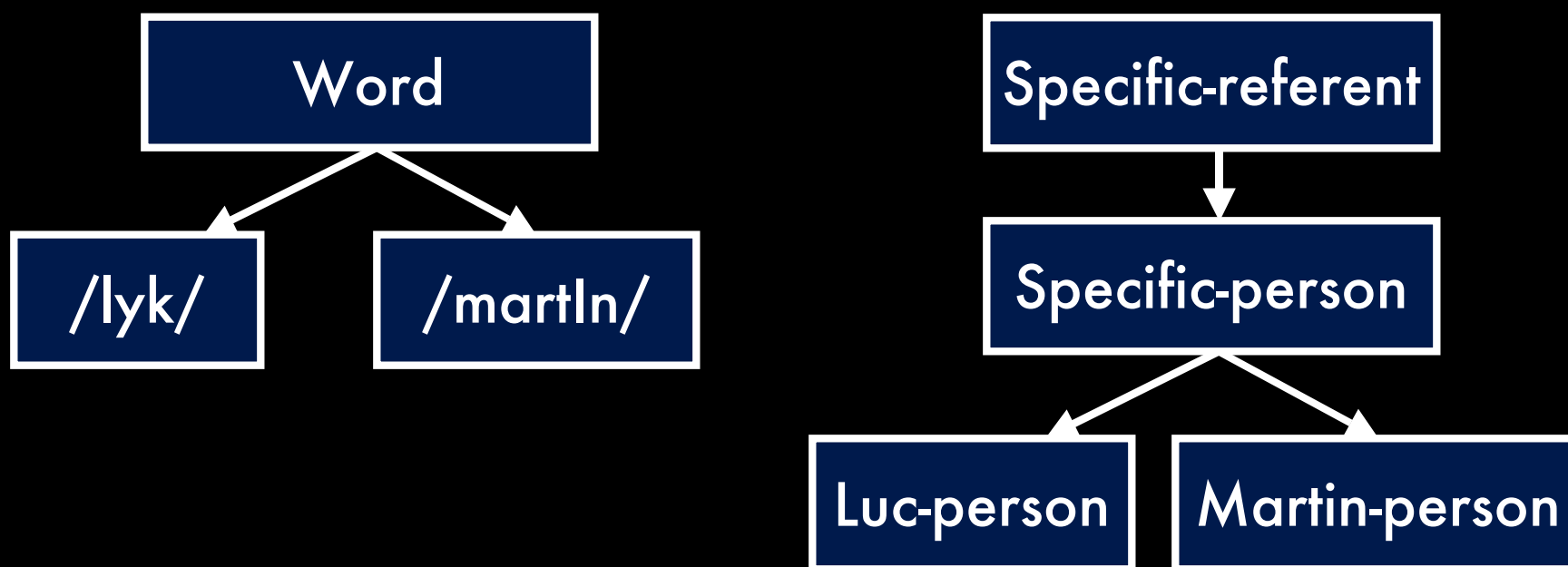
Luc Construction
Form: /lyk/
Meaning: Luc-person

Martin Construction
Form: /martIn/
Meaning: Martin-person

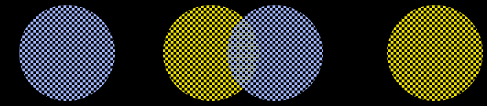
5. The constructicon



Notice that this requires a hierarchically organized representation of the world, an ontology, in which:



Key points



We posit constructions when linguistic knowledge is unpredictable OR when psycholinguistic evidence shows that a form-meaning pairing is stored

Form specifications can include phonological, prosodic, and ordering constraints.

The meaning pole includes categories and instances, as well as second-order properties of meaning

Some constructions have constituents, which they can bind to other constructions when the constituents' constraints match the properties of the construction

Language users have a repository of constructions, a constructicon, which is hierarchically organized and linked to ontological knowledge

Thank-You Construction

Form: Constituent 1 > Constituent 2

Meaning: Express-Appreciation (Speaker, Hearer)

Constituent 1

Form: "Thank"

Constituent 2

Form: "You"