

# Discourse and unaccusativity

Quantitative effects of a structural phenomenon

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Tricia Irwin

University of Pennsylvania

[irwp@sas.upenn.edu](mailto:irwp@sas.upenn.edu)

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The syntax of argument structure: Empirical advancements and theoretical relevance

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# Usage data and syntactic theory

- Using data from usage to inform syntactic theory
  - Corpus data
- Unaccusativity
  - “existential unaccusative” VPs
  - Information structural effects

# Shared properties

- Existential BE sentences and existential unaccusative sentences

1. A hippie arrived (at the park). (existential unaccusative)
2. A hippie walked in.
3. There was a hippie in the park. (existential BE)

# Roadmap

## 1. Introduction

## 2. Background

1. Unaccusative subtypes
2. Existential sentences and new discourse referents
3. Proposal: Existential unaccusatives

## 3. Corpus: Method and results

## 4. Discussion and further work

# Roadmap

1. Introduction

## **2. Background**

1. **Unaccusative subtypes**
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# Unaccusativity in English

- Few robust diagnostics
- Diagnostics roughly correspond to familiar semantic classes of verbs
  1. Change of state: *break, freeze, melt*
  2. Existence/motion: *arrive, appear, come*

# Causative-inchoative alternation

- Associated with changes-of-state

1. The vase broke.
2. The kids broke the vase.

# Causative-inchoative alternation

- Associated with changes-of-state

1. The vase broke.
2. The kids broke the vase.

- Doesn't work with existence/motion verbs

3. The menus arrived.
4. \*The waiter arrived the menus.



# *There*-insertion

- Works for existence/motion verbs
  1. A group of boisterous kids arrived.
  2. There arrived a group of boisterous kids.

# *There*-insertion

- Works for existence/motion verbs

1. A group of boisterous kids arrived.
2. There arrived a group of boisterous kids.

- Fails with change-of-state verbs

3. A vase broke (on the floor).
4. \*There broke a vase (on the floor).

# “Unaccusativity mismatches”

- Discussion in Levin & Rappaport-Hovav (1995: 4-16) and elsewhere
- Syntactic approaches nowadays: More than one unaccusative structure
  - Kural (1996), Alexiadou & Schäfer (2009), Irwin (2012), inter alia

# *There*-insertion pushed further

- Other “verb classes” allow *there*-insertion!
- Manner of motion verbs can allow *there*-insertion
  - Manner of motion: *run*-type verbs
- Levin (1993): “potentially extended uses of certain verbs as verbs of existence” (p. 90)

# Manner of motion verbs

Observations from Levin (1993: 89-90)

- Manner of motion:
  1. A little boy ran in the yard.
  2. \*There ran a little boy in the yard.

# Manner of motion ( $\pm$ direction) verbs

Observations from Levin (1993: 89-90)

- Manner of motion:
  1. A little boy ran in the yard.
  2. \*There ran a little boy in the yard.
- Manner of motion + direction of motion:
  1. A little boy darted into the room.
  2. ✓ There darted into the room a little boy.

# Presentation

- Some sentences only make sense on a “presentational” interpretation
- Guéron (1980: 653:a-c)
  1. A man walked in from India.
  2. A train chugged past with many passengers.
  3. A bird darted by with golden wings.
- These sentences have manner of motion verbs + direction

# Existential BE sentences

- Existential sentence: core function is to introduce new **discourse referents** onto the scene
  - Key diagnostic: subsequent reference
- 1. There were some hippies in the park.  
They seemed nice.
- McNally (1997): **INstantiate**

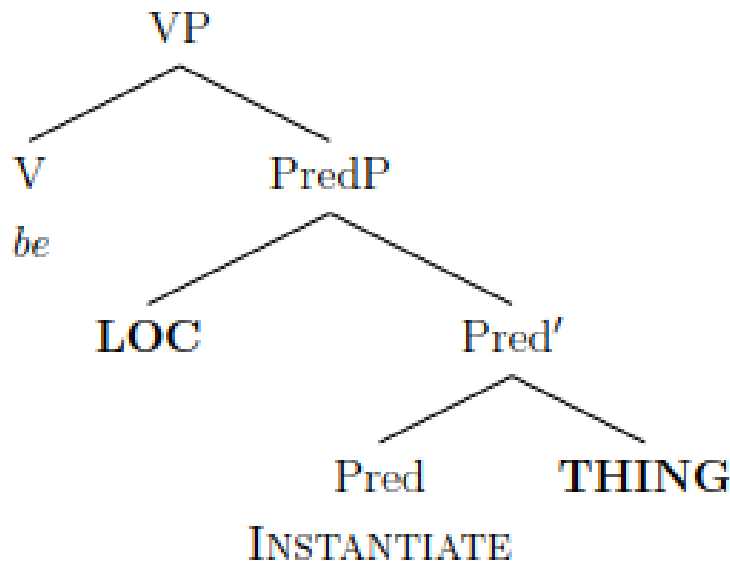


# Analysis

- Compatible ways to capture these shared properties
  - Event frames in the lexicon
  - Referential anchoring (von Heusinger 2007)
- Syntactic decomposition (my route)
  - $\exists$ -*be* and  $\exists$ -unacc share a PredP headed by a Pred head whose denotation includes **INstantiate** ( McNally 1997; McCloskey 2014)
  - Specifier of PredP is (or includes) a contextually-determined element LOC (Francez 2007)

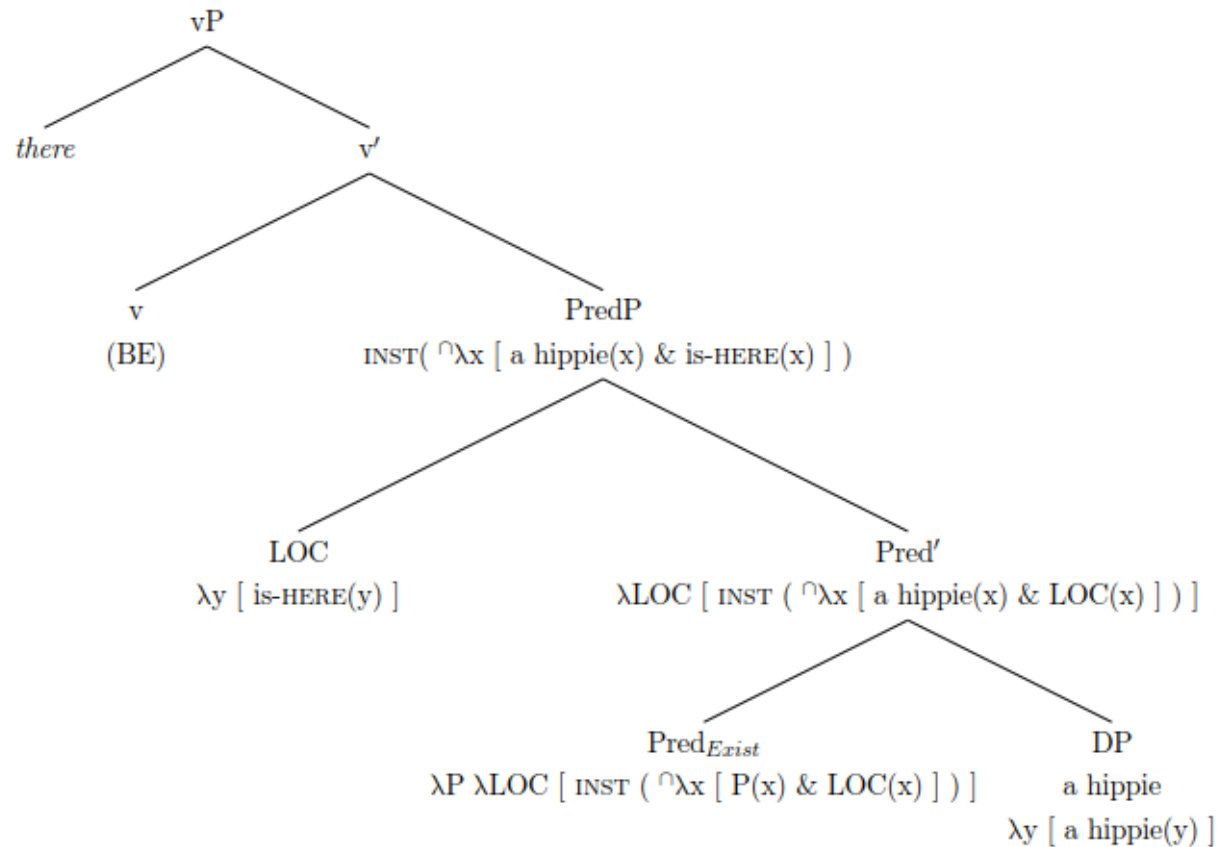
# Existential BE, in a nutshell

- Part of the denotation of Pred includes INSTANTIATE



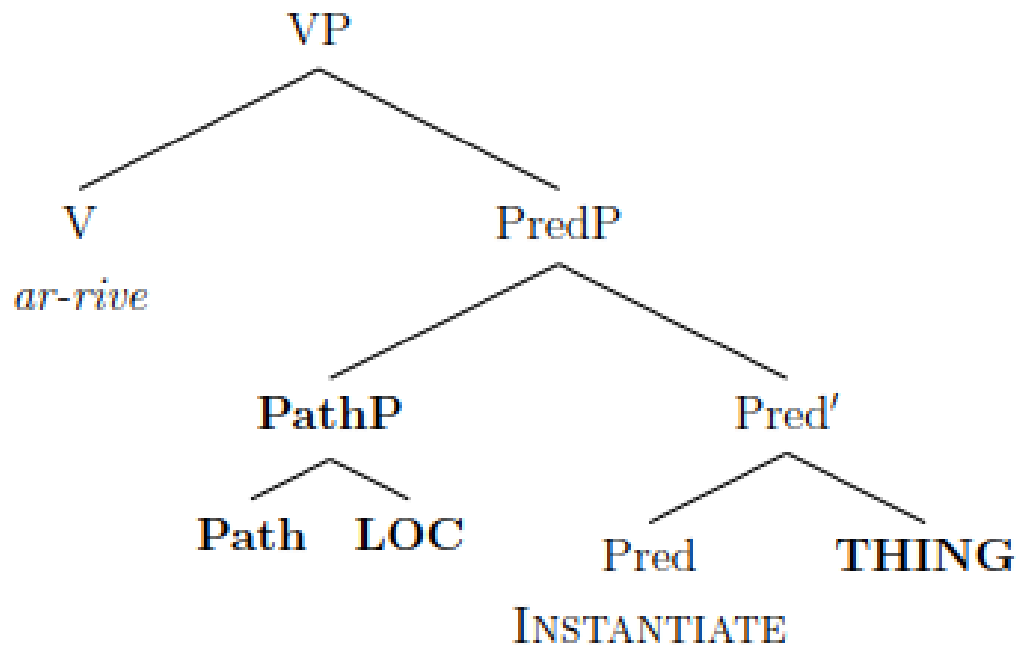
- THING and LOC in the spirit of Borschev & Partee (1998)

# Existential BE sentence



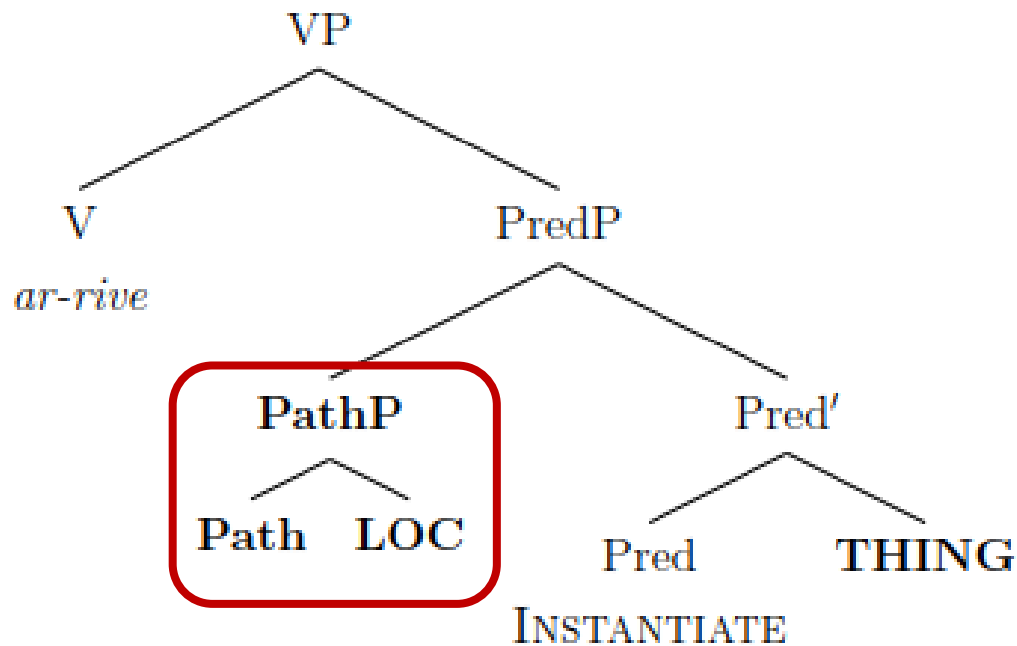
- Closely following McCloskey (2014)

# Existential unaccusative (in a nutshell)



Irwin, *in prep.*

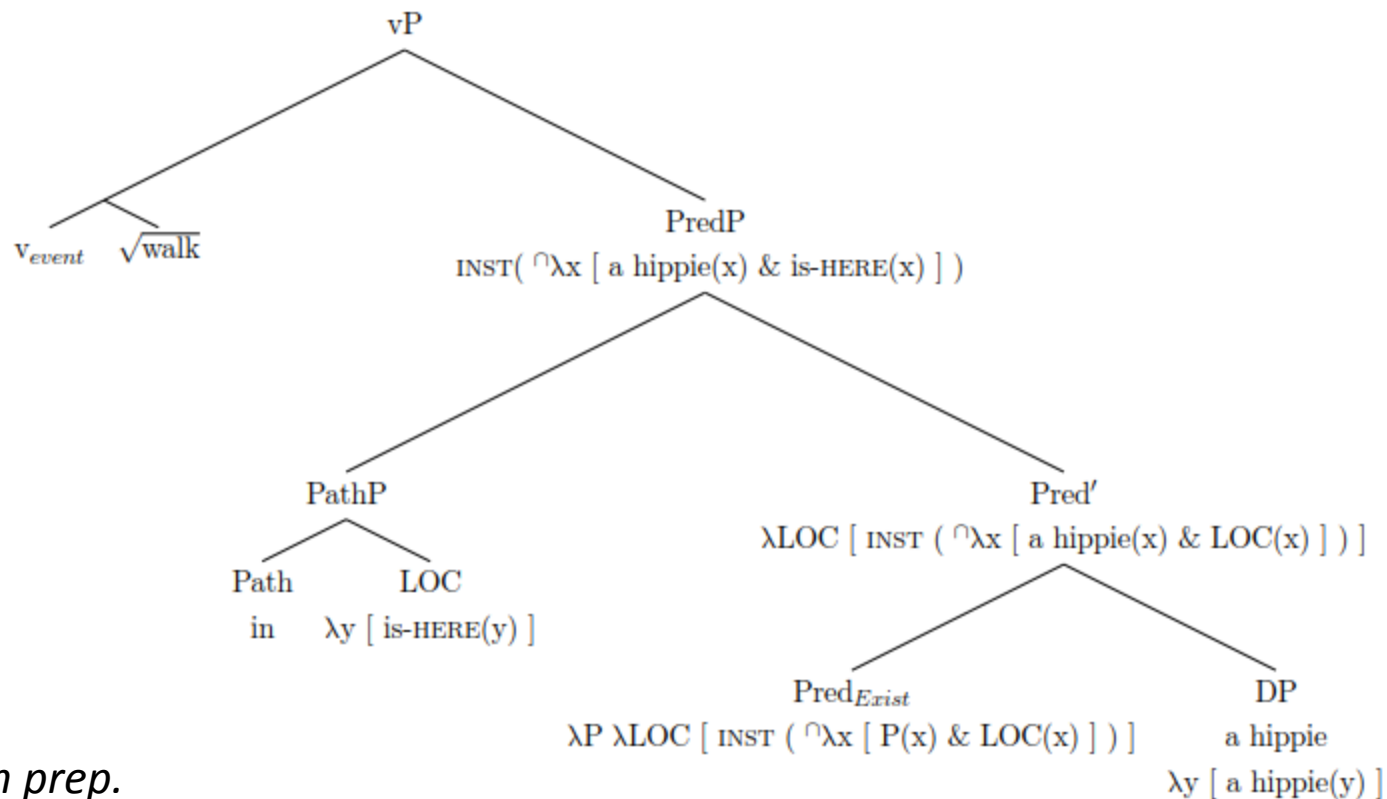
# Existential unaccusative (in a nutshell)



Irwin, *in prep.*

# Existential unaccusative

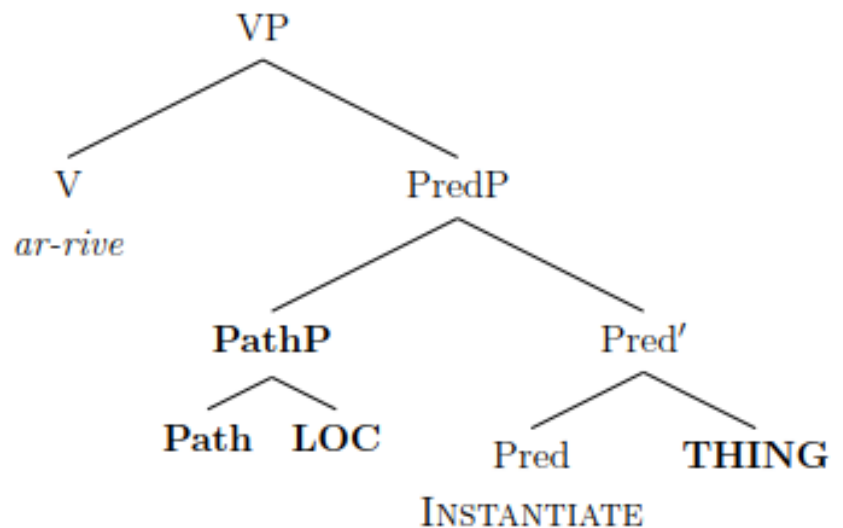
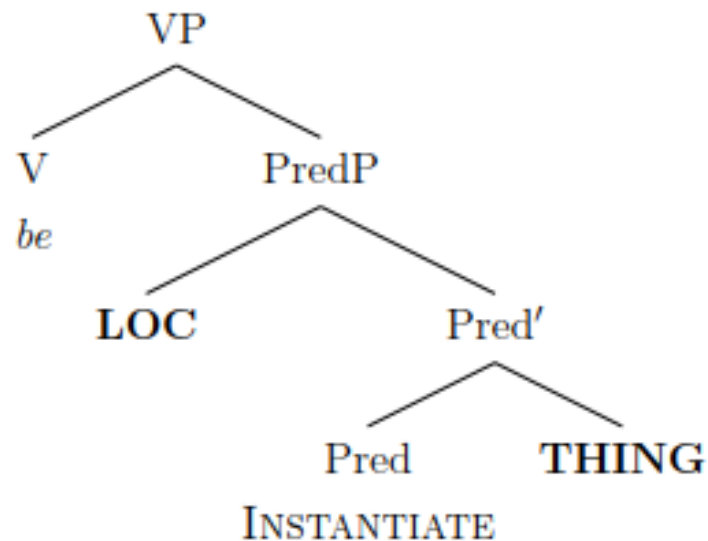
- A hippie walked in



Irwin, *in prep.*

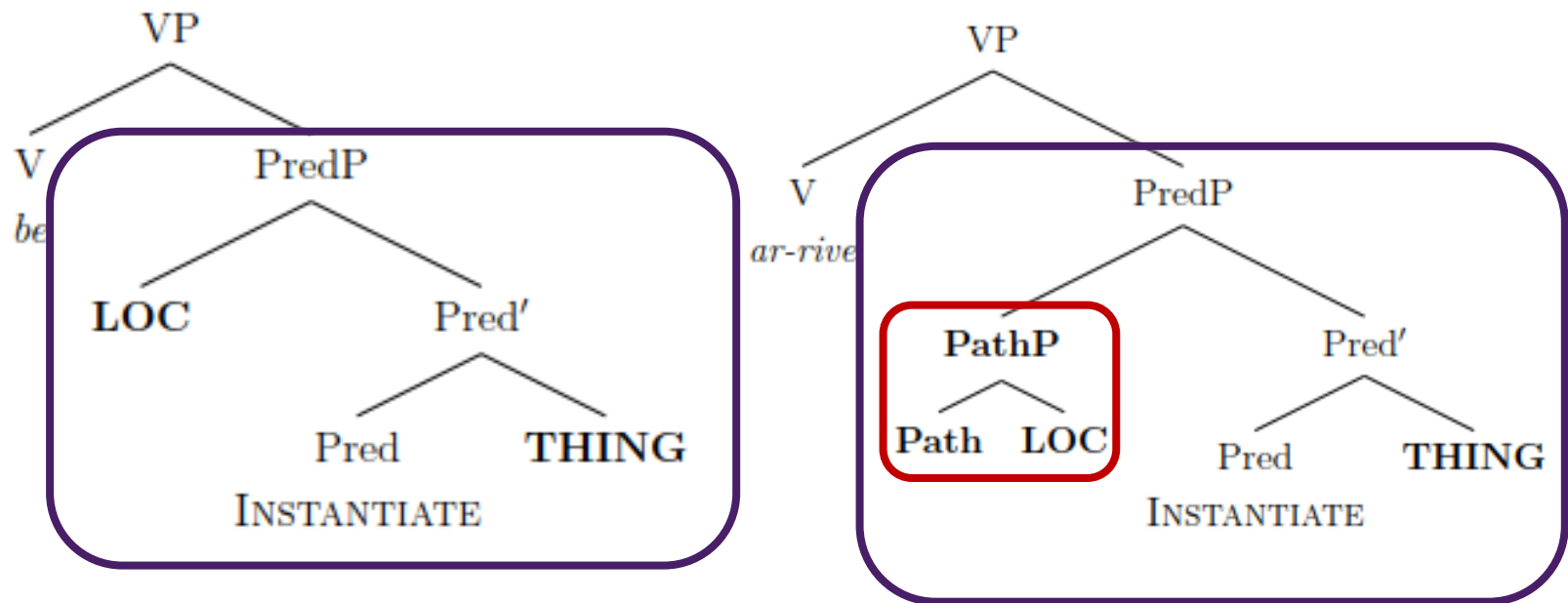
# Shared properties

- Analyzed here as shared structure



# Shared properties

- Analyzed as shared structure + meaning





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**3. Corpus: Method and results**

4. Discussion and further work

# The motivating intuition

- If some unaccusative sentences share core properties with existential sentences ...
- ... then we expect that those unaccusative sentences to have the same discourse function as existential sentences
  - We expect to see people using the structure

# Operationalizing the intuition

- Let verb names stand in for structures
  - *arrive* will stand in for “existential unaccusative”
  - *smile* will stand in for an intransitive that can never occur in an existential structure
- Let definiteness stand in for discourse old and discourse new (*pace* lots of people)

# Hypothesis

- We will find more indefinite subjects with existential unaccusative verbs than indefinite subjects with unergative verbs
  - Relative to definite subjects of those verbs

# Overview of corpus method

- Choose pairs of verbs that are matched for lexical frequency
- Compare indefinite and indefinite subjects for each
- The prediction: More indefinites for unaccusatives vs. unergatives (relative to definites) reflects discourse function

# Corpus: COCA

- Corpus of Contemporary American English

- Davies, Mark. (2008-) The Corpus of Contemporary American English: 520 million words, 1990-present. Available online at <http://corpus.byu.edu/coca/>.

- Contains a mix of genres

- Spoken data (from TV shows), novels, magazines, newspapers, film scripts, ...

# Corpus method

- Verbs: unergative and unaccusative
- Closely matched in lexical frequency

- <http://www.wordfrequency.info/top5000.asp>

	Unaccusative	
	enter	
	arrive	
	emerge	

	Unergative	
	laugh	
	smile	
	sleep	

# Corpus method

- Verbs: unergative and unaccusative
- Closely matched in lexical frequency

- <http://www.wordfrequency.info/top5000.asp>

rank	Unaccusative	freq
710	enter	54,479
813	arrive	47,435
1307	emerge	24,476

rank	Unergative	freq
864	laugh	48,567
1072	smile	41,473
1176	sleep	34,801



# Corpus method: Extract sentences

- For each verb:
  - Extract sentences with indefinite subjects (*a/an* NP)
  - Extract sentences with definite subjects (*the* NP)
- Keep only sentences with animate subjects
  - To keep the numbers balanced: unergatives like *smile* allow only animate subjects
- Keep only sentences in which the verb in question functions as a main verb

# Search strings

- Grab sentences with indefinite subjects:

`.|;|, a|an [n*] [smile].[v*]`

- Grab sentences with definite subjects:

`.|;|, the [n*] [smile].[v*]`

# Corpus method: Extract sentences

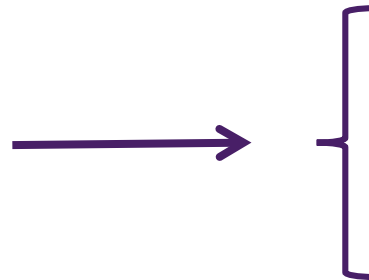
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# Corpus method: Extract sentences

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# COCA settings

- To get all data...
- (Relevant only for sentences with definite subjects)



DISPLAY ?

☒ LIST ☐ CHART ☐ KWIC ☐ COMPARE

SEARCH STRING ?

WORD(S)  ?

COLLOCATES ?

POS LIST ?

SECTIONS ☐ SHOW ?

1 IGNORE ?

-----

SPOKEN

FICTION

MAGAZINE

NEWSPAPER

ACADEMIC

2 IGNORE ?

-----

SPOKEN

FICTION

MAGAZINE

NEWSPAPER

ACADEMIC

SORTING AND LIMITS ?

SORTING  ?

MINIMUM  ☒  ?

HIDE OPTIONS ?

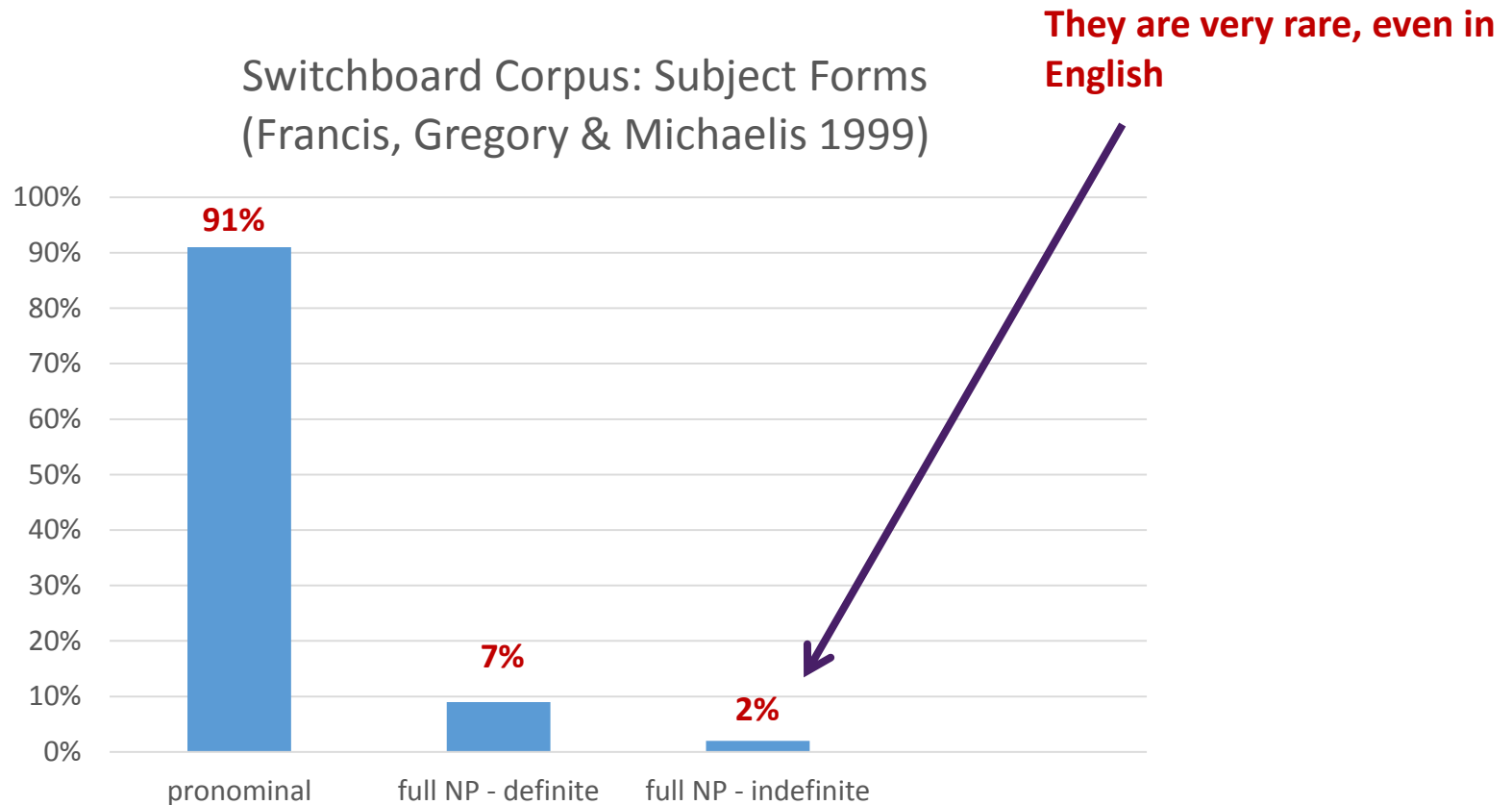
# HITS FREQ  KWIC

GROUP BY

DISPLAY

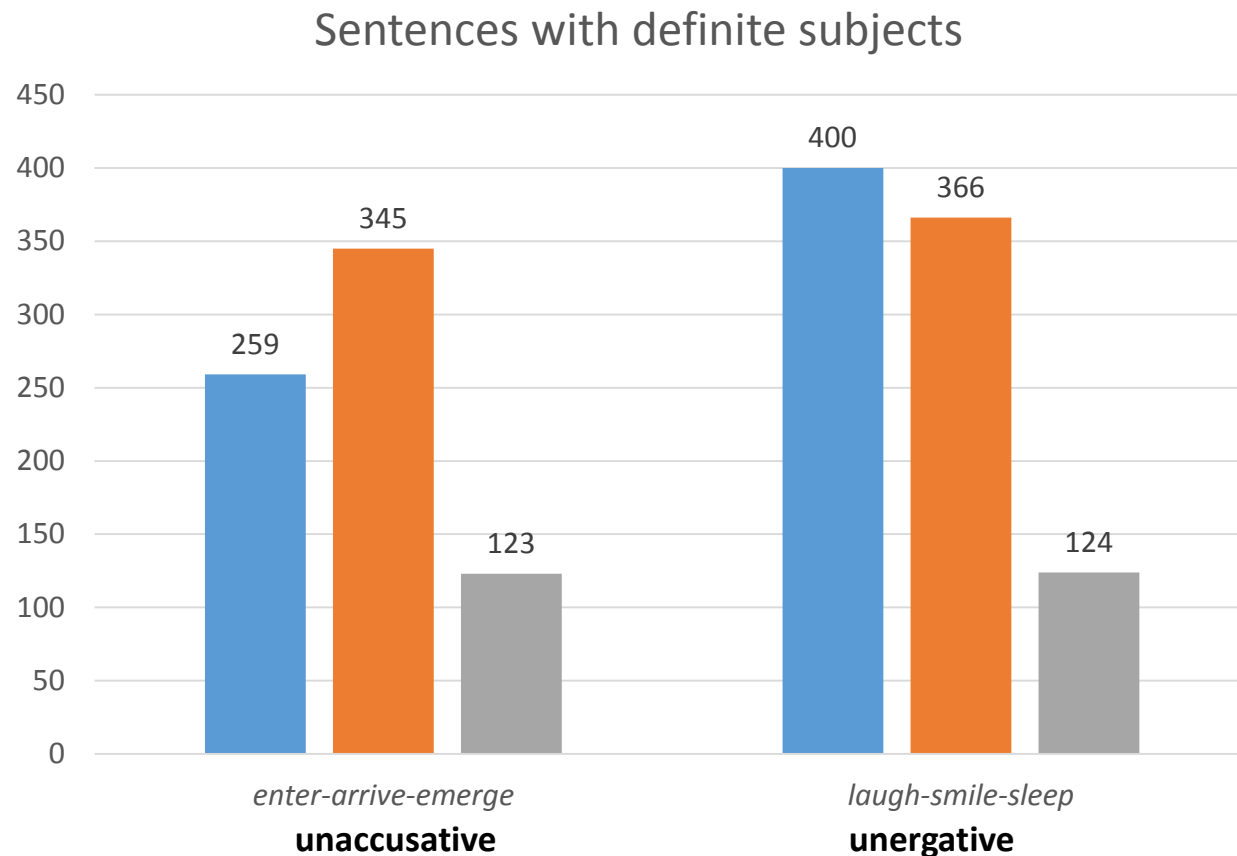
SAVE LISTS

# A note on indefinite subjects



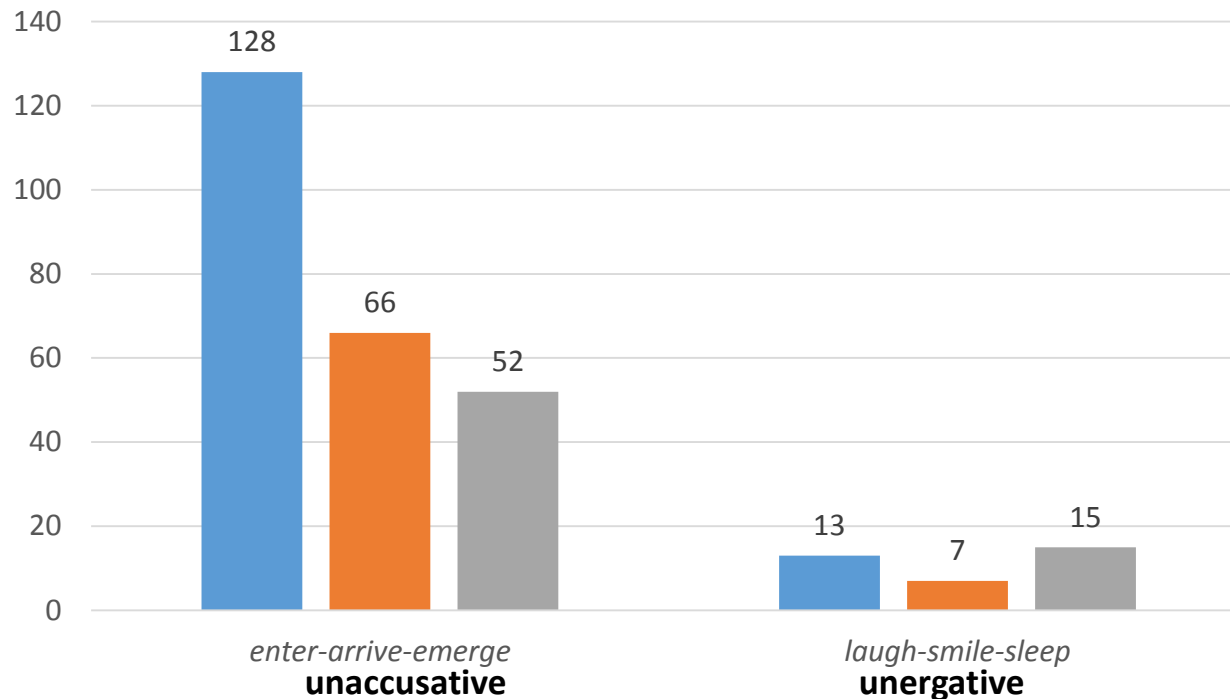
N = 31,021 declarative sentences  
(Francis, et al. 1999)

# Results: Counts for definite subjects



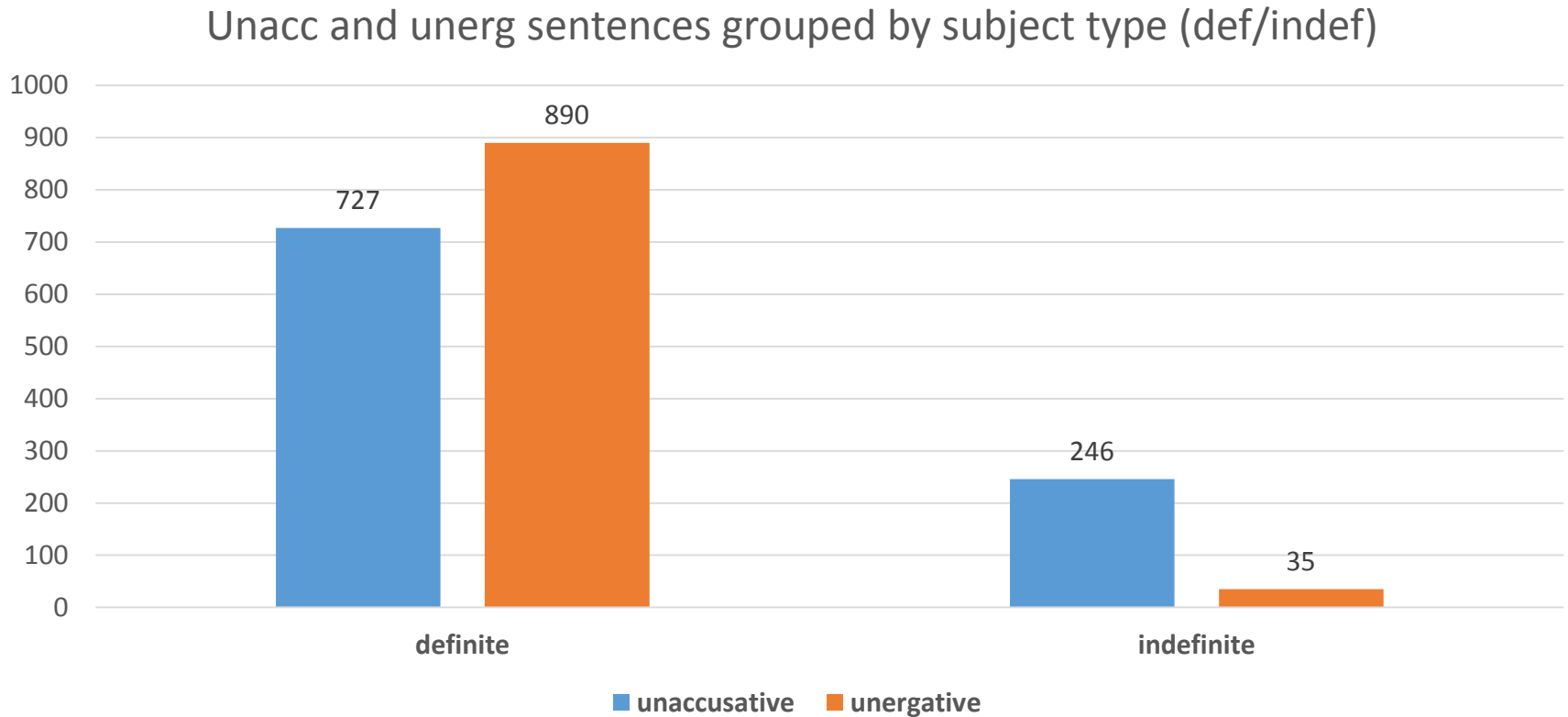
# Results: Counts for indefinite subjects

Sentences with indefinite subjects

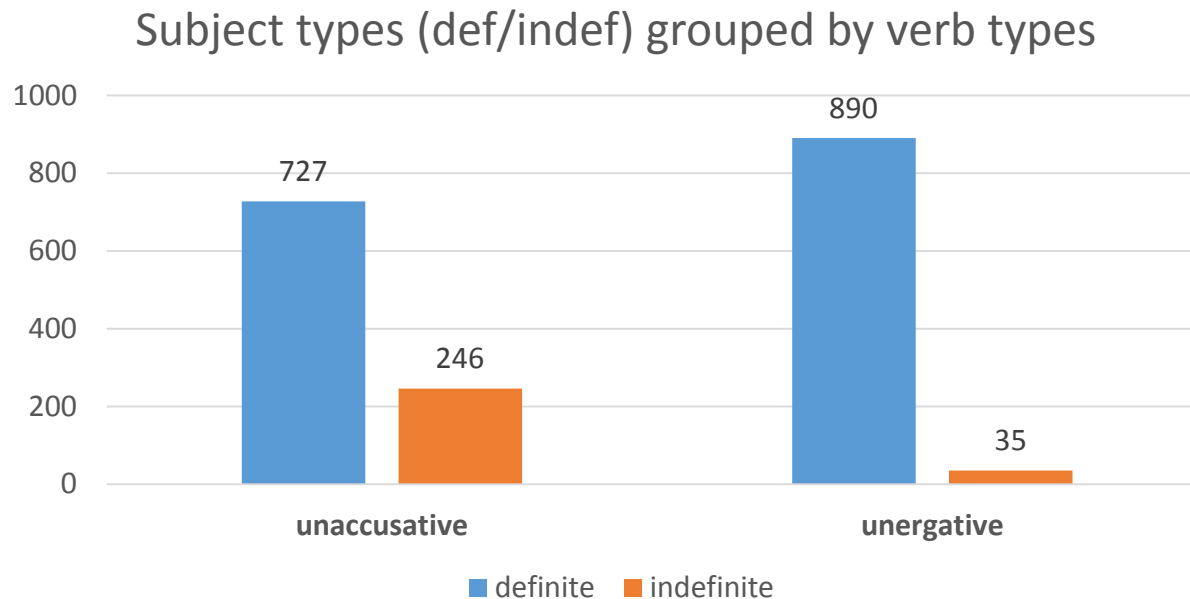




# Grouped data



# Statistics



- Significance testing: a simple chi-squared test
- Pearson's Chi-squared test with Yates' continuity correction
- X-squared = 172.07, df = 1, p-value < .0000000000000002 ✓ Significant

p-value < 2.2e-16 = 0.00000000000000022

# Litmus test of discourse referent-hood

- Subsequent reference (by a definite or pronoun)
- **None** of the indefinite *laugh* subjects are subsequently referred to -- except for one

# Test of discourse referent-hood

- Discourse referent is event, not entity

- Except for (4)

1. Directly below her, in the street , **a woman laughed**. It was a throaty, intimate sound. Eva thought of Ludmila, laughing
2. Oh, shit, " I said, looking over the water . **A loon laughed**, and my chest tightened.
3. Somewhere in the distance , **a hyena laughed**. Michael opened up his journal.
4. **A woman laughed**, and he stared her down. " I'm not a freak, " he snarled, and she couldn't muster a response. He turned away sullenly. " I'm better than you. I'm better than all of you. I embrace progress. I commune with the future.
5. Behind them , **a man laughed**. " The lovebirds. " " Coucou. "
6. **A man laughed**, genuinely pleased. Someone sang, I'm forever blowing bubbles. She wondered
7. At a table far to the right , **a woman laughs** as she touches her husband's knee.
8. Out in Kilindini Harbor, a hippo snorted . **A hyena laughed** somewhere in the night.
9. Around the bend , **a child laughs** # I start toward the sound as # I slowly begin to creep toward my
10. And you can see them being happy . **A chimpanzee laughs**. When a chimpanzee finds a group of bananas in the woods, he will
11. She went backstage to get her clothes. In the echoing wings , **a girl laughed** somewhere, and a door slammed.
12. **A man laughed** at me. I looked around for the source of the voice but the pier
13. **A policeman laughed** as they fished through the broken window for boxes of tricks. While older boys

# Subsequent reference to event

- Unergatives with indefinite subjects establish a discourse referent for the **event** (and that's all)
  1. **a woman laughed.** It was a throaty, intimate sound. Eva thought of Ludmila, laughing
  2. **A man laughed** at me. I looked around for the source of the voice but

# Oddball sentence

- *a chimpanzee*: non-specific kind
1. . A chimpanzee laughs. When a chimpanzee finds a group of bananas in the woods, he will

# The exception

- Transitory

1. **A woman laughed**, and he stared her down.  
" I'm not a freak, " he snarled, and she  
couldn't muster a response. He turned away  
sullenly. " I'm better than you. I'm better than  
all of you. I embrace progress. I commune  
with the future...

# Hypothesis confirmed

- If verb type doesn't make a difference for establishing discourse referents, we expect to see the same relative number of definite and indefinite subjects
- But we did not: we found more indefinite subjects with existential unaccusative verbs than indefinite subjects with unergative verbs
  - Relative to definite subjects of those verbs
- But wait...



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# Verbs and meaning

- But wait...
- Don't the verbs *enter, arrive, emerge* MEAN coming on the scene??
  - And *that* is why they have more indefinite subjects?
- Needed: verbs that can occur in either an existential unaccusative or an unergative structure

# Returning to manner of motion

- Manner of motion  $\pm$  direction
- Use these with definite/indefinite subject status to diagnose structure?
- Manner of motion:
  1. A little boy ran in the yard. (manner)
  2. A little boy ran into the yard. (manner + direction)
  3. **There ran into the yard a little boy.**

# Structural ambiguity

- Are (1)-(2) structurally ambiguous?

1. A little boy ran in. (manner + direction)

2. A little boy ran into the yard. (manner + direction)

# Next steps

- *run, walk* → may select for existential PredP
- vs. (pure) manner verbs that “cannot” select for an existential PredP: e.g., *hammer, pound*
- For a syntactic decomposition analysis, this would mean that verb meaning matters less than the ability of a verb (or v+root) to select for an existential PredP

Thank you!

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# Selected references

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# Extra slides

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# Arrive-type verbs

- How many verbs like *arrive* does English have?
  - *arrive, appear, emerge, ...*
  - Latinate verbs: etymologically, all involve a preposition
- *arrive*: **ad** + **ripa** ('to the shore')
- *emerge*: **e** + **mergere** (roughly: 'to dip out (from)')

OED entry for *arrive*, v

late Latin *arribāre* < *arrīpāre*, *adrīpāre*,  
< *ad* to + *rīpa* shore; = *ad rīpam appellēre*

OED entry for *emerge*, v.<sup>1</sup>

< (directly or through French *émerger*)  
Latin *emergere*, < *e* out + *mergere* to dip

# Arrive-type verbs

- How many verbs like *arrive* does English have?
  - *arrive, appear, emerge, ...*
  - Latinate verbs: etymologically, all involve a preposition
- So, not many?
- We have lots! *come in, walk up, roll up, ....*
  - unaccusative verb + **particle** constructions
- My analysis: the particle denotes **PATH** to **LOC**

# *Discourse referent*: Definition

- “the appearance of an indefinite noun phrase establishes a ‘discourse referent’ just in case it justifies the occurrence of a coreferential pronoun or definite noun phrase later in the text.” (Karttunen, 1976: 366)

1. The princess saw a unicorn. It was beautiful.



# Indefinite NPs and discourse referents

- Most indefinite NPs establish discourse referents
  1. There were some hippies in the park.  
They were dancing all around.
  2. I saw some hippies yesterday.  
They seemed nice.

# Negation and modality get in the way

- In some syntactic contexts, an indefinite NP cannot establish a discourse referent

1. There weren't any hippies in the park.

#The hippies were dancing around.

2. You should get a dog.

#He likes to go on walks.

# The lifespan of discourse referents

- Discourse referents can be limited in their “lifespan” (Heim 1982: 249ff.)

1. Everyone with a dog should walk it.
2. Everyone with a dog should walk it.  
#It likes to play fetch.

# Elements of existentials

1. There is **a hippie** **HERE** at the door.  
           **BE**   **THING**   **LOC**           (contextual modifier)

- **THING**: the NP; semantically, a property or set
- **LOC**: a physical or “virtual” location; can be implicit (Partee et al., 2011: 142)
  - Contextually-determined element, like a pronoun (Francez 2007)
- Coda: contextual modifier (Francez 2007)

# The role of location

1. There's no tea!

2. There's no tea [LOC]!

- Existential predications always involve a location
  - “Existence is always relative to a ‘LOCation,’ which may be **implicit**” (Partee et al. 2011: 142)
- *Location* broadly construed: spatio-temporal, virtual, etc.



# Contextually-determined LOC

- Why is LOC always “here”?
  - “here” = center of the discourse
- 1. There ran towards me a group of noisy children.
- 2. #There ran away from me a group of noisy children.
- “*There*-insertion is possible with verbs of motion only if the motion is directed towards what is perceived as the center of the discourse” Stowell (1978: 5)

# Summary of properties

## Existential *be* sentences

*There's a hippie here.*

- VP-internal NP
- *there*-insertion
- Verb meaning bleached
- Presentational discourse function

## Existential unaccusatives

*A hippie walked in.*

- VP-internal NP (can move)
- *there*-insertion possible
- Verb meaning bleached
- Presentational discourse function