

Stage-level and individual-level predicates

PLIN0056 Semantics Research Seminar 2024–25

Lecture 3

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1 Stage-level and individual-level predicates

Two empirical diagnostics (in English)

- *There*-sentences: Stage-level predicates, but not individual-level predicates, can be used as the coda of a *there*-sentence ([Milsark 1977](#)).

- (1) There are people that we've both met $\left\{ \begin{array}{l} \text{in the kitchen} \\ \text{chatting} \\ \text{drunk} \\ \text{naked} \\ \text{still alive} \end{array} \right\}$. (Stage-level)
- (2) *There are people that we've both met $\left\{ \begin{array}{l} \text{Italian} \\ \text{from Italy} \\ \text{tall} \\ \text{intelligent} \\ \text{old} \end{array} \right\}$. (Individual-level)

NB: We have to be careful with the structure.

- (3) a. There are $\underbrace{\text{people}}_{\text{PIVOT}} \underbrace{\text{drunk}}_{\text{CODA}}$
b. *There are $\underbrace{\text{people drunk}}_{\text{PIVOT}} \underbrace{\emptyset}_{\text{CODA}}$
- (4) a. There are $\underbrace{\text{people}}_{\text{PIVOT}} \underbrace{\text{chatting in the kitchen}}_{\text{CODA}}$
b. There are $\underbrace{\text{people chatting in the kitchen}}_{\text{PIVOT}} \underbrace{\emptyset}_{\text{CODA}}$

- Bare plurals: When combined with bare plurals, stage-level predicates give rise to existential and generic interpretations, but individual-level predicates only give rise to generic interpretations ([Carlson 1977](#), [Milsark 1977](#)).

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|-----|----|-------------------------|------------------------|
| (5) | a. | Firemen are available. | [existential, generic] |
| | b. | Firemen are tall. | [existential, generic] |
| (6) | a. | Students were chatting. | [existential, generic] |
| | b. | Students were smart. | [existential, generic] |

[Diesing 1992](#) argues that this should be understood as part of a broader generalisation about strong vs. weak, as [Milsark 1977](#) had suggested.

- | | | | |
|-----|----|----------------------------|--------------------------|
| (7) | a. | Few firemen are available. | [cardinal, proportional] |
| | b. | Few firemen are tall. | [cardinal, proportional] |

More on this test later.

Stage-level predicates describe temporary, transient properties, and individual-level predicates describe permanent, stable properties.

But this is not entirely true.

- Many individual predicates do not describe permanent properties, e.g., *tall*, *young*.
- Nationality predicates can be understood as temporary properties that may change, and even if that is made salient, they still behave as individual-level predicates according to the above tests ([McNally 1998](#), [Jäger 2001](#)).

- | | | | |
|-----|--|--------------------------------|--|
| (8) | Some professors emigrated to Asia, and eventually gave up on their American citizenship. | | |
| | a. | *There were postdocs American. | |
| | b. | Postdocs were American. | |

2 Other (alleged) tests

There are other linguistic phenomena that have been claimed to track the stage-level/individual-level distinction. But [Jäger 2001](#) observes that they do not always pattern together.

- Perception reports (which was the original motivation for the distinction in [Carlson 1977](#)).

- | | | |
|------|-----------------------------------|---|
| (9) | The linguist saw the philosopher | $\left\{ \begin{array}{l} \text{drunk} \\ \text{talk to Chomsky} \\ \text{alive} \end{array} \right\}.$ |
| (10) | *The linguist saw the philosopher | $\left\{ \begin{array}{l} \text{tall} \\ \text{know Chomsky} \\ \text{old} \end{array} \right\}.$ |

But, not all stage level predicates sound fine in this construction, although the reason why might be simply independent of the stage-level vs. individual-level distinction (and have to do with language-external factors about how perception works).

- (11) a. There is a customer service representative available.
b. Customer service representatives are available.
- (12) a. Today there is a museum that is worth a visit standing on the hill.
b. Apartment buildings stand on the hill.
- (13) a. ?I saw a customer service representative available.
b. ?I saw a museum stand on the hill.

- Adverbs of quantification (with no other co-varying elements) ([Kratzer 1995](#))

- (14) a. Whenever Mary is drunk, we have fun.
b. *Whenever Mary is tall, we have fun.
- (15) a. We rarely have fun when Mary is sober.
b. *We rarely have fun when Mary is tall.

But not all stage-level predicates allow such modification (although probably for independent reasons).

- (16) a. #Whenever Mary is alive, we have fun.
b. #We rarely have fun when Mary is alive.

More crucially, some individual-level predicates do allow such modification, at least when they are contextually seen as temporary properties.

- (17) Suppose that it's common to switch nationalities.
a. Whenever John was American, he filed his tax in the US.
b. John rarely entered the US, when he was American.
- (18) a. Whenever Alice was tall, she could reach the top of the shelf.
b. Alice rarely managed to breathe normally, when she was tall.

- Lifetime effects ([Kratzer 1995](#))

- (19) a. The philosopher was in Vienna.
b. The philosopher was from Vienna. $\leadsto$ The philosopher is dead

Some individual-level predicates do not trigger lifetime effects.

- (20) a. The philosopher was Austrian.
b. The philosopher was young.

- Depictives

- (21) a. We ate the carrot raw.
b. *We ate the carrot organic.

- Word order in German ([Diesing 1992](#), [Kratzer 1995](#), [Jäger 2001](#))

3 Counterexamples to the bare plural test

3.1 Stage-level predicates that do not allow existential bare plurals

É. Kiss 1998, Jäger 2001, and Maienborn 2011: p. 817 remark that some stage-level stative predicates strongly prefer generic readings.

- (22) (The party in the department was crazy!)
a. Professors were drunk.
b. Professors were naked.
- (23) a. Firemen are hungry.
b. Firemen are tired. (Maienborn 2011: p. 817)
- (24) a. Children are noisy in the street.
b. Dishes were dirty. (É. Kiss 1998: p. 149)
- (25) a. Children are dirty.
b. Shoes are shiny. (É. Kiss 1998: p. 159)
- (26) a. Boys admire athletes.
b. Athletes impress boys. (É. Kiss 1998: p. 160)

But the judgments might not be very sharp here. É. Kiss 1998: p. 149f remarks that bare plurals can receive existential readings with *drunk*, *naked*, *sick*, and *hungry*.

Note that adding more material or playing with intonation might make the existential readings more accessible.

- (27) a. CHILDREN are noisy in the yard, not ADULTS.
b. DISHES were dirty, not CUTLERY. (É. Kiss 1998: p. 149)

However, it turns out that similar manipulations have effects with individual-level predicates too, at least in some cases, as we will see below.

It appears that non-stative stage-level predicates do always allow existential readings (É. Kiss 1998: p. 159).

3.2 Existential bare plurals with individual-level predicates

- Jäger observes that the bare plural subjects of the following (b)-sentences can receive existential readings, unlike the (a)-sentences.

- (28) a. Monkeys live in trees.
b. Monkeys live in that tree. (Jäger 2001: p. 112; originally due to Fernald 1994)
- (29) a. Presidents are similar to senators.
b. Presidents are similar to these senators. (*Ibid.*)
- (30) a. Tycoons own banks.
b. Tycoons own that house. (*Ibid.*)

Magri (2009a: fn. 27, p. 91) critiques Jäger's observations.

- Magri points out (probably correctly) that *live* is not an individual-level predicate, so (28) is irrelevant.

(31) There are some monkeys living in this tree.

But it's hard to exclude the coda-less parse with a reduced relative clause. Maybe it helps to have some more modifiers.

(32) ⟨·⟩ There are [some monkeys capable of scalar implicatures that Philippe talks about his in papers] living in this tree.

vs.

(33) ⟨·⟩ [Some monkeys capable of scalar implicatures that Philippe talks about his in papers living in this tree] are brown.

- Magri questions the reports judgments of (32). Two native speaker friends of his didn't get existential readings of (32b).
- Magri (2009a) admits that the sentences in (33) are relevant data points, but he just gives a brief remark, without giving an analysis:

The few cases where [Jäger's prediction] seems to hold, such as [(33)], are better analyzed as special cases, for which something *ad hoc* needs to be said. (Magri 2009a: p. 91)

But is *own* really an individual-level predicate?

(34) There are some tycoons owning banks.

This is not a good test; it's hard to exclude the coda-less parse.

Let's try adding more modifiers.

- (35) a. ⟨·⟩ There are [some tycoons running sketchy businesses in London that I met through Daniel] owning banks.
 b. ⟨·⟩ [Some tycoons running sketchy businesses in London that I met through Daniel owning banks] are British.

- Kratzer 1995 gives some data of a similar kind.

- (36) a. Ponds belong to this lot.
 b. She thinks that counterexamples are known to us. (Kratzer 1995: p. 143)

Kratzer 1995 argues that unaccusative individual-level predicates allow for existential bare plural subjects (especially with a focus emphasis), but (30) with *own* cannot be analysed that way.

Let's check *there*-sentences.

- (37) a. There are some ponds belonging to this lot.
 b. There are some counterexamples known to us.

It's not easy to exclude the coda-less parse with reduced relatives here. Let's add more modifiers.

- (38) a. ⟨·⟩There are [some ponds larger than your pool that you can swim in] belonging to this lot.
 b. ⟨·⟩There are [some counterexamples involving simple predicates that pose serious issues to Chomsky's theory] known to us.

É. Kiss 1998 raises similar data points, without showing that these predicates are indeed individual-level.

- (39) a. Volcanoes line both sides of the river.
 b. Ancient figures are carved on the walls of the cave.
 c. In this area, hot springs exist.
 d. Fish abound in the lake. (É. Kiss 1998: p. 149)
- (40) a. Misprints occur on every page of this book.
 b. Problems exist.
 c. Unfair deals are known to us. (É. Kiss 1998: p. 159)

- Glasbey 1997 also raises some relevant data: She observes that there is a contrast between the (a)- and (b)-sentences below.

- (41) a. Students own sports cars.
 b. Students own sports cars in this department. (Glasbey 1997: p. 169)
- (42) a. Drinkers were under-age.
 b. I was shocked to discover in the Red Lion last night that drinkers were under-age. (Glasbey 1997: p. 170)
- (43) John was shocked by his visit to the Red Lion.
 Drinkers were under-age, drugs were on sale, and a number of fights broke out while he was there. (Glasbey 1997: p. 171)
- (44) a. Men are bald.
 b. Men are bald as a result of using this brand of hair restorer. (*Ibid.*)
- (45) a. Ministers are gay.
 b. In this church, ministers are gay. (*Ibid.*)

The following examples suggest that some of these are indeed individual-level predicates.

- (46) a. *There are some drinkers under-age.
 b. *There are some men bald.
 c. *There are some ministers gay.

Note that the observation seems to generalise to other weak quantifiers.

- (47) a. Few beer drinkers were under-age.
 b. I was shocked to discover in the Red Lion last night that few beer drinkers were under-age.
- (48) a. Few men are bald.
 b. Few men are bald as a result of using this brand of hair restorer.

- (49) a. Few ministers are gay.
b. In this church, few ministers are gay.

3.3 Narrow scope subjects

[Fox 1995](#) observes that with a wide scope universal quantifier, an existential reading suddenly becomes possible. According to him, the (a)-sentences are false, while the (b)-sentences are (perhaps) true.

- (50) a. MIT professors know about biology.
b. MIT professors know about every field of science. ([Fox 1995](#): p. 328)
- (51) a. MIT students know Chinese.
b. MIT students know almost every foreign language. (*Ibid.*)
- (52) a. MIT professors practice Judaism.
b. MIT professors practice almost every form of Judaism. (*Ibid.*)
- (53) a. Jewish women are related to Chomsky.
b. Jewish women are related to every Jewish man. ([Fox 1995](#): p. 329)

3.4 Focus

[É. Kiss 1998](#) observes that focussed bare plural subjects of individual predicates can receive existential readings.

- (54) GIRLS know mathematics the best in my school.

She also points out that *only* makes existential readings accessible (also [von Fintel 1997](#)).

- (55) a. In this village, women have blue eyes.
b. In this village, only WOMEN have blue eyes. ([É. Kiss 1998](#): p. 148)

4 Type-based accounts

[Milsark 1977](#) and [Carlson 1977](#) assign stage-level vs. individual-level predicates lexical meanings that have different semantic types. But such accounts are not flexible enough to explain the ‘exceptional cases’ we saw in the previous section.

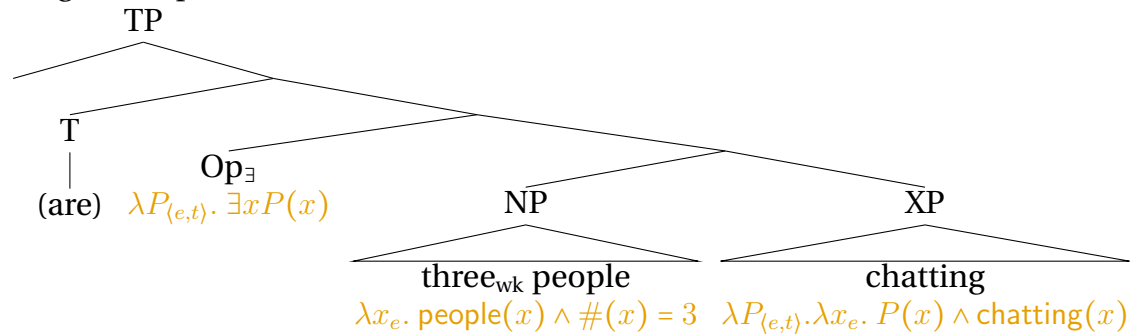
4.1 Milsark 1977

- Strong quantifiers are real quantifiers but weak noun phrases are not quantifiers but predicates.
- Individual-level predicates can only combine with strong quantifiers, and stage-level predicates can only combine with weak noun phrases.
 - Bare plurals have weak and strong uses: weak bare plurals have existential meaning (not entirely clear where the existential force comes from) and strong bare plurals have generic meaning.

- *There*-sentences are derived by transformation from *weakNP be XP*, and cannot be derived from a sentence with a strong quantifier.

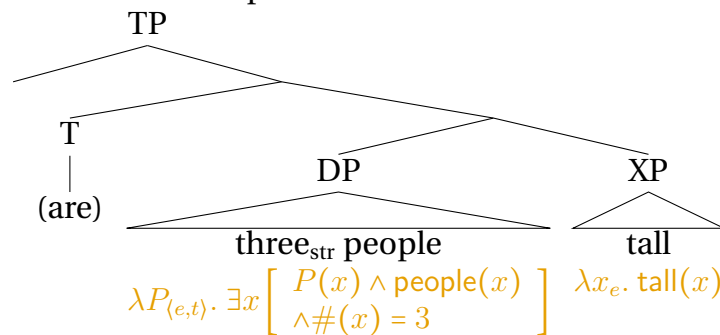
Milsark 1977 does not provide formal details, but here's one possible way to implement his ideas in a more modern framework:

(56) Stage-level predicates



[Spec, TP] will be filled by the expletive *there* or the NP.

(57) Individual-level predicates



The DP has to move to [Spec, TP].

4.1.1 Pros

- Explains both *there*-sentences and bare plurals.
- Connection to strong vs. weak (although no explicit account of strong-weak shift).

4.1.2 Cons

- No deep explanation of why different predicates select for different types of phrases.
- Stage-level and individual predicates can be conjoined, so the meanings of connectives must be complicated (if not impossible to formalize).

- (58) a. No one is (both) tall and healthy.
b. Everyone is (either) German or completely wasted.

- Negative quantifiers require decomposition with negation obligatorily taking scope over $\exists$.
- Unclear what to do with weak NPs with verbal stage-level predicates.

- (59) a. Linguists greeted Chomsky.
b. Linguists knew Chomsky.
- (60) *There greeted linguists Chomsky.

- Similarly, in some cases of *there*-sentences have infelicitous non-*there* counterparts. This is not predicted.

- (61) a. There was space in the room.
b. ??Space was in the room. (McNally 2011: p. 1836)
- (62) a. There was a fire in the school.
b. ??A fire was in the school. (Ibid.)

- Exceptional existential readings of bare plurals with individual-level predicates are serious challenges.

4.2 Carlson 1977

- Bare plurals denote kinds, which are a special type of individuals.
- Stage-level predicates are predicated of spacio-temporal *slices* of individuals. They combine with a bare plural via a copula that turns them into predicates of individuals.

- (63) $s_s < x_e$ iff s is a spacio-temporal slice of x
- (64) a. $\llbracket \text{drunk} \rrbracket^g = \lambda s_s. \text{drunk}(s)$
b. $\llbracket \text{are} \rrbracket^g = \lambda P_{\langle s, t \rangle}. \lambda x_e. \exists s_s < x[P(s)]$
c. $\llbracket \text{students are drunk} \rrbracket^g \Leftrightarrow \exists s_s < \text{STUDENT}[\text{drunk}(s)]$

Homework for me: Check details of Carlson 1977

- I suppose Carlson 1977 would say that verbal stage-level predicates always involve the above existential shift, and hence are type- $\langle e, t \rangle$.
- I don't remember exactly how he would explain generic readings with stage-level predicates, but I think he postulates an individual-level version of each of them. Kratzer 1995 discusses the following issue:

- (65) Typhoons arise in this part of the Pacific. (Kratzer 1995: p. 139)
- a. Typical typhoons arise in this part of the Pacific.
b. Typical areas in this part of the Pacific are such that there are typhoons that arise there.

The latter reading is generic but the bare plural is still existential. So, existential vs. generic should not be controlled by the verb (alone).

- Individual-level predicates are predicated of individuals *simpliciter*. (66b) is meant to be a generic reading.

- (66) a. $\llbracket \text{tall} \rrbracket^g = \lambda x_e. \text{tall}(x)$
b. $\llbracket \text{students are tall} \rrbracket^g \Leftrightarrow \text{tall}(\text{STUDENT})$

Problems

- Conjunction of stage-level and individual-level predicates
- [Carlson 1977](#) does not offer an analysis of *there*-sentences, but let's see what he could say.
 - Let's suppose that only type- $\langle s, t \rangle$ predicates can be the coda.
 - Together with the assumption that only nominal modifiers can be type $\langle s, t \rangle$ (and verbal predicates are always type- $\langle e, t \rangle$), we can explain why only they can be the coda.

But it's not clear how to account for the 'definiteness restriction' on the pivot. Bare plurals are type- e for [Carlson 1977](#). Then every DP should be able to be a pivot.

- Unclear how to generalise the analysis to all strong vs. weak quantifiers.
 - For [Carlson 1977](#), DPs are always type- e or type- $\langle et, t \rangle$, and spacio-temporal slices are referenced only by predicates.
 - How do we account for the lack of cardinal readings of *few NPs* with individual predicates?

- (67) a. Few syntacticians are available now.
 b. Few syntacticians are tall.

- Quantifiers generally only count full individuals, but they sometimes quantify over spacio-temporal slices.

- (68) a. Eight students were drinking outside.
 b. I saw many students in the PhD room.
 c. There were many professors singing at the party.

- (69) a. 4,000 ships passed through the lock. ([Krifka 1990](#))
 b. 250 million passengers flew in and out of the UK in 2022.

But maybe this just needs a separate account.

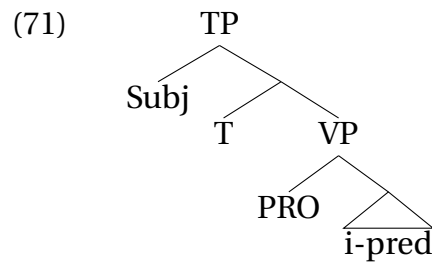
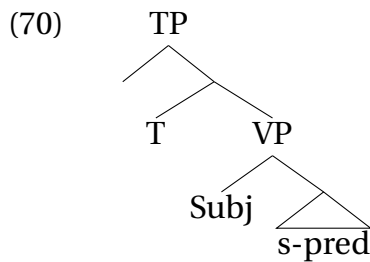
- Exceptional existential readings of bare plurals with individual-level predicates are hard to explain.

5 Syntactic accounts

[Diesing 1992](#) and [Kratzer 1995](#) encode the stage-level vs. individual-level distinction partly in the syntax. Just like the type-based theories, their theories treat the stage-level vs. individual distinction as a grammatical distinction, so cannot explain the 'exceptional' data above.

5.1 [Diesing 1992](#)

- Subjects of stage-level predicates are base-generated VP-internally; subjects of individual-level predicates are base-generated in [Spec, TP] (and bind PRO in the VP-internal subject position).



On the surface the subject of a stage-level predicate appears in [Spec, TP], but it can reconstruct back to the VP-internal position at LF. The subject of an individual-level predicates is always interpreted in [Spec, TP].

- [Diesing's \(1992\)](#) Mapping Hypothesis (roughly): VP-external quantifiers are strong; VP-internal quantifiers are weak (their quantificational force come from $\exists$ -closure at the VP-level).

Problems

- Conjunction of individual-level and stage-level predicates would involve a violation of the Coordinate Structure Constraint.

(72) Daniel is [PRO American] and [*t* is studying art history here].

- Exceptional existential bare plurals with individual-level predicates are hard to account for.
- It's nice that [Diesing's](#) analysis is generalizable to other quantifiers, but it has an important limitation: It only accounts for subjects, as [Diesing](#) acknowledges. As [É. Kiss 1998](#) discusses, the stage-level vs. individual-level distinction is not limited to subjects:

(73) a. Bosses hate mistakes.
b. Bosses make mistakes. ([É. Kiss 1998](#): p. 148)

(74) a. Our kids are bored on weekends.
b. Our kids fall sick on weekends. (*Ibid.*)

5.2 [Kratzer 1995](#)

- Stage-level predicates have Davidsonian eventuality arguments; individual-level predicates don't.

[Kratzer 1995](#) adopts [Diesing's \(1992\)](#) syntactic analysis.

- Subjects of stage-level predicates and of unaccusative individual-level predicates are generated VP-internally.
- Subjects of non-accusative individual-level predicates are generated VP-externally.

She justifies this by referring to the Argument Linking principle by [Williams 1981](#), requiring that the external argument, and only the external argument, is generated VP-externally.

6.1 Pros

Jäger 2001 argues that his theory can explain exceptional existential bare plurals with individual predicates. The idea is that they simply involve another phrase that can function as topics.

- (78) a. Men are bald.
b. Men are bald as a result of using this brand of hair restorer_T.
- (79) a. Ministers are gay.
b. In this church_T, ministers are gay.

Jäger's (2001) idea in principle allows for variation among stage-level predicates too: There can be reading preferences arising from how likely (pragmatically) the event argument is read as a topic.

- (80) a. Firemen _s were available.
b. Firemen _s were drunk/tired.

But intuitions about topical events are not at all obvious. Would be nice to have a systematic way of controlling topichood, but I don't know any reliable way, especially for silent items.

6.2 Cons

Magri 2009b argues that Jäger's idea overgenerates.

- (81) a. Italians love good singers.
b. Italians love Pavarotti. (Magri 2009b: p. 249)

- (81a) contains two bare plurals. If *good singers* under a generic reading can function as a topic, then *Italians* should be able to receive an existential reading. But one could say that object bare plurals cannot be topics.
- The problem of (81b) is more evident: *Pavarotti* should be able to be a topic. Then the existential reading of *Italians* should be possible.

Magri makes the same point based on the following pair of sentences.

- (82) a. Firemen are tall.
b. Firemen are taller than Michael Jordan. (Magri 2009b: p. 250)

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