More of English: Nonverbal Predicates, Modifiers, Definite Descriptions

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Chapter 4

4.1 Semantically vacuous words

- Some words don't seem to contribute to meaning, e.g. in "proud of John", "John is rich" or "Nicky is a cat":

  (1) $[\![$**of John**$]\!]$ = $[\![$**John**$]\!]$
  $[\![$**be rich**$]\!]$ = $[\![$**rich**$]\!]$
  $[\![$**a cat**$]\!]$ = $[\![$**cat**$]\!]$

- We could handle this by using the identity function of the appropriate type as their denotation.

  (2) $[\![$**of**$]\!]$ = λx $\in$ D$_e$. x
  (3) $[\![$**be**$]\!]$ = λf $\in$ D$_{<e,t>}$. f
  (4) $[\![$**a**$]\!]$ = λf $\in$ D$_{<e,t>}$. f

- Or we could simply assume that the semantics doesn't "see" certain words in the syntax, i.e. that branch doesn't count semantically.

4.2 Nonverbal predicates

- Nouns, adjectives and some prepositions can readily take denotations as 1-place predicates:

(1) $[\![$**cat**$]\!]$ = λx $\in$ D$_e$. x is a cat
(2) $[\![$**gray**$]\!]$ = λx $\in$ D$_e$. x is gray
(3) $[\![$**out**$]\!]$ = λx $\in$ D$_e$. x is not in x's home

- Nouns, adjectives and most prepositions can take denotations as 2-place predicates:

(4) $[\![$**part**$]\!]$ = λx $\in$ D$_e$. [λy $\in$ D$_e$. y is part of x]
(5) $[\![$**fond**$]\!]$ = λx $\in$ D$_e$. [λy $\in$ D$_e$. y is fond of x]
(6) $[\![$**in**$]\!]$ = λx $\in$ D$_e$. [λy $\in$ D$_e$. y is in x]

4.2 Nonverbal predicates (cont.)

- We can calculate appropriate denotations for phrases now, e.g."in Texas", by using Functional Application (FA):

  By FA: $[\![$**in Texas**$]\!]$ = $[\![$**in**$]\!]$($[\![$**Texas**$]\!]$).
  By lexical entry for **Texas**: $[\![$**Texas**$]\!]$ = Texas.
  Hence: $[\![$**in Texas**$]\!]$ = $[\![$**in**$]\!]$(Texas).
  By lexical entry for **in**: $[\![$**in**$]\!]$(Texas)
  = [λx $\in$ D$_e$. [λy $\in$ D$_e$. y is in x]](Texas) = λy $\in$ D$_e$. y is in Texas.
  Hence: $[\![$**in Texas**$]\!]$ =λy $\in$ D$_e$. y is in Texas.

- There are also presumably some non-verbal 3-place predicates.

4.3 Predicates as restrictive modifiers

- PPs may appear inside NPs in three distinct semantic roles:
  (1) **a part *of Europe*** (argument)
  (2) **a city *in Texas*** (restrictive modifier)
  (3) **Susan, *from Nebraska*** (non-restrictive modifier)

- We have dealt with the first case. PPs that are arguments are headed by vacuous prepositions; thus they have the same denotations as the NPs they contain (individuals), and they are arguments of 2-place (relational) nouns.

4.3 Predicates as restrictive modifiers (cont.)

- The third case is dealt with by noting that nonrestrictive modifiers are not semantically composed with the phrases they modify at all. Rather, they have the status of separate sentences which serve to make side-remarks of some kind, so the meaning of (4) is like the meaning of (5):

  (4) **It is surprising that Susan, from Nebraska, finds it cold in here.**

  (5) **It is surprising that Susan finds it cold in here. Note that she is from Nebraska.**

- We can assume that at the level at which our semantic rules apply, the nonrestrictive modifier isn't part of the structure at all, so the question of its denotation doesn't arise.

- We will concentrate in this section on restrictive modifiers.

4.3 Predicates as restrictive modifiers (cont.)

- We know from introductory syntax class that it is notoriously difficult to distinguish between arguments and restrictive modifiers in practice, but the basic semantic intuition behind it is simple:

  Arguments reduce the adicity of the noun they combine with; modifiers leave it unchanged.

- Thus "part" is a 2-place predicate, while "part of Europe" is a 1-place predicate; however,"city" is a 1-place predicate and "city in Texas" is still a 1-place predicate.

  If $[\![$**city in Texas**$]\!]$ is the characteristic function of a set A and $[\![$**city**$]\!]$ is the characteristic function of a set B, then A is a subset of B: namely, that subset which results by intersecting B with the set of things in Texas.

  But $[\![$**in Texas**$]\!]$ and $[\![$**city**$]\!]$ are both of type $< e, t >$. How do we compose them?

4.3.1 A new composition rule

- To solve this problem, we can either revise our lexical entries or propose a new composition rule. We will consider the latter option first.

- Here is a new composition rule:

  (6) *Predicate Modification* (PM)
  If α is a branching node, $\{\beta, \gamma\}$ is the set of α's daughters, and $[\![\beta]\!]$ and $[\![\gamma]\!]$are both in $D_{<e,t>}$, then
  $[\![\alpha]\!] = \lambda x \in D_e \,.\, [\![\beta]\!](x) = [\![\gamma]\!](x) = 1.$

- Now we get the desired result:
  (7) $[\![$**city in Texas**$]\!]$
  $= [\![\alpha]\!] = \lambda x \in D_e \,.\, [\![\textbf{city}]\!](x) = [\![\textbf{in Texas}]\!](x) = 1.$
  $= \lambda x \in D_e$. x is a city and x is in Texas.

4.3.1 A new composition rule (cont.)

- PM is general enough to cover not only PPs modifying nouns, but adjective phrases (APs), whether to the right or left of a noun, and also stacked modifiers in unlimited numbers, e.g.:

  (8) **Kaline is a gray cat in Texas fond of Joe.**

  To treat this example, we must impose some binary-branching hierarchy among the modifiers, but all our different choices yield logically equivalent results. This is good because English doesn't provide a single parse for this sentence, but it is nevertheless perceived as truth-conditionally unambiguous.

4.3.1 A new composition rule (cont.)

- The operation performed by PM has also been called “intersective modification”, because if we look at the sets instead of at their characteristic functions, it amounts to set-theoretic intersection.

- “Conjunctive composition” would also be a good name for it, highlighting the connection with the semantics of “and”.

- Predicate modification is a genuinely new semantic composition principle on our list. It is obviously not functional application. If it is really needed, then there is more to semantic composition than Frege’s Conjecture. Are we forced to this conclusion?

- We could try revising the semantics of our lexical items intead and use FA to compose the meaning.

4.3.2 Modification as functional application

- Let's try sticking to Functional Application. Then, if we keep ⟦**city**⟧ as type $< e, t >$, then we must allow for ⟦**in Texas**⟧ to be of type $<< e, t >, < e, t >>$.

- If we keep ⟦**Texas**⟧ as type e, then ⟦**in**⟧ must now be a function of type $< e, << e, t >, < e, t >>>$.

- We can now derive equations like:
  (9) ⟦**in**⟧(Texas)($\lambda \in$ D$_e$. x is a city)
  = λx $\in$ D$_e$. x is a city and x is in Texas.

- The generalization appears to be that, for any individual y $\in$ D$_e$ and any function f $\in$ D$_{<e,t>}$, ⟦**in**⟧(y)(f) = λx $\in$ D$_e$. f(x) = 1 and x is in y. So, we have:

  (10) ⟦**in**⟧ = λy $\in$ D$_e$. [λf $\in$ D$_{<e,t>}$. [λx $\in$ D$_e$. f(x) = 1 and x is in y]]

4.3.2 Modification as functional application (cont.)

- We can also define adjective denotations of type $<< e, t >, < e, t >>$, e.g.:

  (11) $[\![$**gray**$]\!]$ = λf $\in$ D$_{<e,t>}$. [λx $\in$ D$_e$. f(x) = 1 and x is gray]

- By systematically revising the entries of all adjectives and prepositions, we are thus able to interpret all phrases containing a noun with one or more modifiers in them by means of Functional Application alone, and so we can eliminate Predicate Modification from the theory.

- But there is a trade-off. What about predicate adjectives and prepositions, as in “Julius is gray” or “Julius is in Amherst”? Now we can’t derive these.

- (Solution 1) We could try to assign a suitable denotation of the copula “be” (see exercise), but then we would still not be able to account for predicate nominal sentences like “Julius is a cat”, so the copula would have to be ambiguous between vacuous and nonvacuous occurrences.

4.3.2 Modification as functional application (cont.)

- (Solution 2) We could assume a systematic lexical ambiguity in all adjectives and prepositions. The syntax may freely generate both homonyms in all the same places, but the Principle of Interpretability will allow only one in any given environment.

- See exercise to figure out how to generate these homonyms by rule.

- (Solution 3) We could posit some non-overt structure in the syntax of VPs headed by copulas. Perhaps these VPs contain an invisible predicate that the AP or PP modifies, something like a zero equivalent of a bland noun like “thing” or “individual”.

- We will not examine these alternatives any further. We just wanted to show that the elimination of Predicate Modification is not without its price. As matters stand, we might as well adopt PM.

4.3.3 Evidence from nonintersective adjectives?

- (12a) and (12b) come out logically equivalent due to the way the rule of PM is written or due to the lexical entry for “gray” on the FA approach.

(12) (a) **Julius is gray cat**.
(b) **Julius is gray and Julius is a cat**.

- But this equivalence is intuitively not valid for all adjectives. Thus (13) does not entail (14). But (15) does entail (16) given the fact that “Jumbo is an elephant” does entail “Jumbo is an animal” and the meaning of “and”. So (15) and (16) can’t both be equivalent to (13) and (14), respectively.

(13) **Jumbo is a small elephant**
(14) **Jumbo is a small animal**
(15) **Jumbo is small and Jumbo is an elephant**
(16) **Jumbo is small and Jumbo is an animal**

4.3.3 Evidence from nonintersective adjectives? (cont.)

- It seems that an $< e, t >$ type meaning for “small” will not work.
- But there is an $<< e, t >, < e, t >>$ type meaning that will work for “small”.

(17) ⟦**small**⟧ =
λf $\in$ D$_{<e,t>}$. [λx $\in$ D$_e$. f(x) = 1 and the size of x is below the average size of the elements of $\{$y : f(y) = 1$\}$]

- (13) asserts that Jumbo is an elephant and that his size is below the average elephant size.
- The set of all animals contains mostly individuals that are smaller than any elephants, so the average animal size is much lower than the average elephant size. Jumbo’s size falls somewhere between the two, so (14) can be false when (13) is true.

4.3.3 Evidence from nonintersective adjectives? (cont.)

- The majority of adjectives are actually non-intersective like “small”.
- There would be nothing wrong with having some adjectives be of type $< e, t >$ and others of type $<< e, t >, < e, t >>$, but such a solution runs into problems when adjectives of the non-intersective type are used predicatively.

(18) **Jumbo is small**.

- Here, “small” seems to have a straight $< e, t >$ type meaning!
- It begins to seem too complicated to posit an $<< e, t >, < e, t >>$ meaning for adjectives like “small”.
- Can we find an approach that allows non-intersective adjectives to be of type $< e, t >$ when used attributively?

4.3.3 Evidence from nonintersective adjectives? (cont.)

- Adjectives like “small” are vague and context-dependent.

- People can agree on truth-value judgments given a particular example of use, but when we try to generalize across all uses of a particular “small” sentence, objects of just about any size can be considered small or not small.

- Even an elephant of above average size can be considered small in the context where it is being compared to an army of monsters like King Kong, for example: “Jumbo doesn’t have a chance; he’s only a small elephant”.

- The meaning we defined for “small” is a default that applies when phrases of the form “small N” are interpreted more or less out of context.

4.3.3 Evidence from nonintersective adjectives? (cont.)

- Perhaps the basic generalization about “small” is that it means “of a size less than the contextually salient standard”.

- How the contextually salient standard is established for each given utterance of the word “small” is a complex affair involving previous discourse and the nonlinguistic circumstances of the utterance.

- Mention of “elephant” in the immediate vicinity of the adjective draws attention to the elephant stereotype, including the stereotypical elephant size.

- An $< e, t >$ type meaning can now be defined.

(19) $[\![$**small**$]\!]$ = λx $\in$ D$_e$. x’s size is below c, where c is the size standard made salient by the utterance context

4.3.3 Evidence from nonintersective adjectives? (cont.)

- Now we can use PM to interpret "Jumbo is a small elephant". It would receive the truth conditions in (17) just in case the context of utterance does not supply a more salient size standard than the average size of elephants.

- To explain the intuition that (13) does not entail (14), we would assume that utterance contexts change quickly. We can accept that (13) entails (14) *when the context for both is the same*.

- We have only scratched the surface of the issue of vagueness and context dependency. Philosophers and linguists working within the general framework of natural language semantics presented in this book have studied such issues carefully, but their work is largely beyond the scope of this book.

- We will continue to assume that an $< e, t >$ meaning of non-intersective adjectives is viable and we will continue to use PM to interpret sentences containing them.

4.3.3 Evidence from nonintersective adjectives? (cont.)

- A third type of adjective still cannot be handled in our framework: adjectives like “former” and “alleged”.

- If John is a former teacher, it doesn’t follow that John is former (which is ungrammatical) and John is a teacher (which is false). Thus “former” does not have a meaning of type $< e, t >$.

- But it doesn’t have a meaning of type $<< e, t >, < e, t >>$ either!

- If it did then the following equivalence would have to hold given that FA is being used in the interpretation:

(20) If $[\![\alpha]\!]$ = $[\![\beta]\!]$, then $[\![$**former** $\alpha]\!]$ = $[\![$**former** $\beta]\!]$

4.3.3 Evidence from nonintersective adjectives? (cont.)

- But this is counterintuitive. Suppose it happens that Bill's (current) lovers happen to be (now) exactly the tenants of 13 Green St. Then $[\![$**lover of Bill's**$]\!]$ = $[\![$**tenant of 13 Green St.**$]\!]$.

- if the equivalence in (20) holds, then it would have to follow that if ”John is a former lover of Bill's” is true, then “John is a former tenant of 13 Green St.” would also have to be true. But this is not the case.

- Thus, the meaning of “former” can't be of type $<< e, t >, < e, t >>$.

4.3.3 Evidence from nonintersective adjectives? (cont.)

- We would need an intensional semantics to handle “former” where we could quantify over times in intepreting predicates, recognizing that e.g. “John is a teacher” could be true in 1970 but false in 1984.

- And we would need to quantify over possible worlds to handle “John is an alleged murderer” because even if this is true in the actual world of utterance, “John is a murderer” might not be true in that world.

- We will briefly touch on quantification over possible worlds in chapter 12. For now we can’t handle the class of intensional adjectives.

4.3.3 Evidence from nonintersective adjectives? (cont.)

- We also can't handle all cases of PPs modifying verbs.
- PM will work in some cases, like "Julius is sleeping on the couch".
- But PM will not work in other cases, like "John wrote on the blackboard" or "Max mixed the salad in the bowl".
- Our approach is actually not a good way to handle modification in general.
- The most promising approach to verb modification involves allowing sentences to be interpreted as quantifying over events, but this is beyond the scope of this book.
- Roughly: "There exists an event e, and e is a writing event, and the agent of e is John, and the location of e is the blackboard."

4.4 The definite article

- We have proposed that common nouns like “cat” denote the characteristic function of sets of individuals. What does this imply for determiners?

- In this chapter we will work on just one determiner, “the” and will only cover cases where it combines with a singular count noun, i.e. cases that philosophers call “definite descriptions”.

- Formal semanticists have worked extensively on plural and mass terms, but that work is beyond the scope of the book.

4.4.1 A lexical entry inspired by Frege

- The basic intuition about phrases of the form “the NP” is that they denote individuals, just like proper names. Frege found it to be obvious and referred to definite descriptions like “the capital of the German Empire” as “compound proper names”.

- Nobody would disagree with this treatment if they didn’t know about Bertrand Russell’s famous treatment of definite determiners as quantifiers.

- (Russell analyzed “the king of France is bald” as ”There exists a king of France, and there exists only one king of France, and he is bald.”)

4.4.1 A lexical entry inspired by Frege (cont.)

- Frege gave a couple of different syntactic analyses of definite descriptions but the one that we will adopt involves the determiner as a function applying to the common noun phrase of type $< e, t >$ to give a value of type e.

- The determiner thus has a meaning of type $<< e, t >, e >$

- $[\![$**the**$]\!]$ applies to $[\![$**president of the USA**$]\!]$ to yield Obama, $[\![$**the**$]\!]$ applies to $[\![$**opera by Beethoven**$]\!]$ to yield Fidelio, and so on.

- The generalization that emerges is (1):

(1) For any f $\in$ D$_{<e,t>}$ such that there is exactly one x for which f(x) = 1,
$[\![$**the**$]\!]$(f) = the unique x for which f(x) = 1.

4.4.1 A lexical entry inspired by Frege (cont.)

- What about functions f that do not map exactly one individual to 1? Let us examine our intuitions.

- South College has no escalator and more than one stairway, so what are the objects denoted by the following definites?

(2) **the escalator in South College**
(3) **the stairway in South College**

- We are hard pressed to say what (2) and (3) denote. The only natural answer is that neither of these phrases denotes any object at all.

- Let us implement this intuition in our lexical entry for “the”.

4.4.1 A lexical entry inspired by Frege (cont.)

- If there is no such thing as $[\![$**the escalator in South College**$]\!]$ or $[\![$**the stairway in South College**$]\!]$, then the reason has to be that the functions $[\![$**escalator in South College**$]\!]$ and $[\![$**stairway in South College**$]\!]$ are *not in the domain of* $[\![$**the**$]\!]$.

- If they are not in the domain of $[\![$**the**$]\!]$, then $[\![$**the**$]\!]$ can't apply to them, and this means we can't use FA to calculate a semantic value for the DP-nodes in (2) or (3).

(4) The domain of $[\![$**the**$]\!]$ contains just those functions f $\in$ $D_{<e,t>}$ which satisfy the condition that there is exactly one x for which f(x) = 1.

(5) $[\![$**the**$]\!]$ =
λ f : f $\in$ $D_{<e,t>}$ and there is exactly one x such that f(x) = 1.
the unique y for which f(y) = 1.

4.4.1 A lexical entry inspired by Frege (cont.)

- We have to change our definition of what kind of function our function notation denotes, from total functions to partial functions.

(6) A *partial* function *from* A *to* B is a function from a subset of A to B.

- We henceforth define $D_{<\sigma,\tau>}$ (for any types σ, τ) as the set of all *partial* functions from D_σ to D_τ.

- When we emphatically mean "function from" rather than "partial function from", we will sometimes say "*total* function from".

- Now we can say that $[\![$**the**$]\!]$ is in $D_{<<e,t>,e>}$ or that its type is $<< e, t >, e >$.

4.4.2 Partial denotations and the distinction between presupposition and assertion

- When a tree contains a lexical item that denotes a partial function, this may cause the tree to wind up without a semantic value. Failure to belong in the domain of the function has repercussions all the way up the tree. So (7) and (8) are predicted not have semantic values, neither 1 nor 0 nor anything else.

(7) **The stairway in South College is dirty**.
(8) **John is on the escalator in South College**.

- With regard to FA, you can't apply the denotation of one daughter to that of the other daughter unless both daughters *have* denotations.

(9) *Functional Application* (FA)
If α is a branching node and $\{\gamma, \beta\}$ is the set of α's daughters, then α is in the domain of $[\![\ ]\!]$ if both β and γ are and β is a function whose domain contains $[\![\gamma]\!]$. In this case $[\![\alpha]\!] = [\![\beta]\!]([\![\gamma]\!])$.

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- Are the empirical predictions that are implied by our current semantic component correct? What we predict about (8) is the following:

(a) the sentence “John is on the escalator in South College” is not true.
and
(b) the sentence “John is on the escalator in South College” is not false.

- Part (a) of this prediction is unobjectionable, but many informants will spontaneously classify the assertion “John is on the escalator in South College” as false.

- So does this mean that our Fregean semantics for the definite article is wrong and must be abandoned?

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- Many philosophers and linguists have drawn this conclusion, e.g. Bertrand Russell.

- An alternative response is to reconsider the straightforward identification which we have assumed so far between the semantic values 1 and 0 and the pre-theoretical notions of truth and falsity.

- We might posit a more indirect correspondence between the truth-values of our semantic theory and the intuitions people report in truth-value judgment tasks.

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- As a first step let us propose that the colloquial term “false” covers both truth-valueless sentences and those that are false in the technical sense of denoting 0.

- This stipulation makes the predictions of our semantics consistent with the data reported above that informants will say that (8) is false.

- To justify our choice over competing theories, in particular those that make only a 2-way distinction between true and false, we have to show that the additional distinction between two sources of intuitive falsity does some useful work.

- For instance, we might argue that it helps explain certain other manifestations of semantic competence, which can be observed when we go beyond simple truth-value judgment tasks and elicit subtler intuitions.

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- It has been argued that the technical distinction between lacking a truth value and denoting 0 can be systematically related to the intuitive distinction between what is *asserted* and what is *presupposed*.

(10) (a) **John is absent again today**.
(b) **Today is not the first day that John is absent**.
(c) **John is absent today, and that has happened before**.

- (10a) presupposes that John has been absent before and asserts that he is absent today. (10b) asserts that he has been absent before and presupposes that he is absent today. (10c) asserts both things. It is most natural to utter such sentences when your audience already knows the presupposed information.

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- A semantic theory equipped to distinguish between two kinds of non-true sentences is better suited to capture the distinction between presupposition and assertion than one that isn't.

- The concrete proposal is that ϕ having no truth value represents the case that ϕ has a false presupposition, and $[\![\phi]\!] = 0$ means that ϕ does not presuppose anything false but makes a false assertion. (The third case, $[\![\phi]\!] = 1$ means that both what ϕ presupposes and what it asserts are true.)

4.4.2 Partial denotations and the distinction between presupposition and assertion (cont.)

- This “presuppositonal” analysis of “the” predicts that “John is on the escalator in South College” would be used most naturally by a speaker who assumes that her audience knows that there is a unique escalator in South College, but doesn’t know about John’s whereabouts.

- Minimal pairs like the following point in the same direction:

(11) (a) **There will be one mid-term, which will be on November 21st**.
(b) **The mid-term will be on November 21st**.

- (11a) is most natural when the audience doesn’t know there will be a mid-term, and (11b) is most natural when the audience already knows about the mid-term. Neither sentence can be true unless there is a unique midterm, but this is part of the assertion in (11a) and is presupposed in (11b). If there isn’t a unique midterm, then (11b) lacks a truth value and (11a) should denote 0.

4.4.3 Uniqueness and utterance context

- Frege's uniqueness presupposition has often been objected to as an idealization that does not really fit the definite singular article in English.

- We frequently say things like "the door is locked" or "the cat wants to be fed", yet we don't believe that there is just one door and just one cat in the world, and nobody that hears us speak this way will attribute such beliefs to us either.

- Somehow, we have to concede that "the cat" doesn't denote the unique cat that there is in the whole world, but rather, on each occasion on which it is uttered, the unique cat among those individuals that are under consideration on this utterance occasion.

4.4.3 Uniqueness and utterance context (cont.

(5') $[\![$**the**$]\!]$ =

λ f : f $\in$ $D_{<e,t>}$ and there is exactly one x $\in$ C such that f(x) = 1.
the unique y $\in$ C such that f(y) = 1,
where C is a contextually salient subset of D.

- This is just a first attempt. Below we will assume something like (5') in informal discussion, but will abstract away from context dependency and use (5) in our denotations.

4.4.3 Presupposition failure versus uninterpretability

- In Chapter 3, we talked about how θ–Criterion violations like "Ann laughed John" are uninterpretable and fail to have a semantic value. We observed that such sentences are not in the domain of the $[\![\ \ ]\!]$ function, and proposed that this uninterpretability accounted for the ungrammaticality judgment represented by the asterisk.

- In this chapter we have suggested that sentences which lack a semantic value are intuitively judged as presupposition failures.

- Is it a kind of falsity or a kind of ungrammaticality that we want our theory to capture when it provides no denotation for a given structure?.

- We might try to draw the intended distinction as shown on the next slide.

4.4.3 Presupposition failure versus uninterpretability (cont.)

(12) If α is *uninterpretable*, then it can be proved from the semantics alone that α is outside the domain of $[\![\ \ ]\!]$.

(13) If it is a contingent matter of fact that α is outside the domain of $[\![\ \ ]\!]$, then α is a *presupposition failure*.

- In “Ann laughed Jan”, we don’t need to assume anything about the world to show it lacks a denotation.

- With “The escalator in South College is moving”, we need to invoke physical facts to show that it lacks a denotation, and we can easily imagine counterfactual states of affairs in which that sentence would have a truth value.

4.4.3 Presupposition failure versus uninterpretability (cont.)

- But if we tried to turn (12) and (13) into biconditionals in order to *define* uninterpretability and presupposition failure, we would run into problems because there are sentences that are “necessary presupposition failures”, such as “John met the man who died and didn’t die”.

- Such sentences should be treated as presupposition failures even though it follows from the semantics alone that it lacks a denotation.

- So the distinction cannot be simply the difference between necessary and contingent lack of denotation.

- In the case of uninterpretable structures, information about the *type* of each subtree is sufficient to decide that the structure receives no denotation.

- To detect presupposition failures, we must know more about the denotations of certain subtrees than their mere semantic types.