*Language and Ontology*

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Handout 10

**Properties and Kinds of Tropes: Singular Terms and Nominalizing Quantifiers**

**1. Two sorts of terms for universals**

**1.1. Terms for universals corresponding to trope-referring terms**

*handsomeness, strength, roundness, fatherhood*

linguistic form: bare (determinerless) adjective (noun) nominalization

**1.2. Explicit property-referring terms**

*the property of being round the property of roundness*

**1.3. Other terms**

*the quality of being gentle, the quality of gentleness the virtue of being humble, the virtue of humility*

*the character trait of being impatient, the character trait of impatience*

**1.3. Semantic difference between explicit property-referring terms, (universal) state terms and bare nominalizations**

*the property of being blue* vs *blueness*:

in the literature:

Woltersdorff (1960): notes that the terms are not in all context interchangeable, maintained that they nonetheless refer to the same entities

Levinson (1979): makes ontological distinction between properties (the property of being blue, being blue) and qualities (blueness)

**1.4. The differences between properties and qualities**

1. Mass vs count

*being wise* – no determiner possible

*wisdom* – *some / so much / a little / more / no wisdom*

1. Partitivity vs being involved in its entirely
2. a. There is some wisdom in the book

b. \* There is being wise in the book.

1. a. John has some wisdom.

b. \* John has some of the property of being wise / \* some of being wise.

1. Instance-distribution predicates

(3) a. Humility used to be more common / more widespread than it is now.

b. ?? The property of being humble / of humility used to be more common / more

widespread than it is now.

1. a. Artistic talent could have been more developed.

b. \* The property of being artistically talented could have been more developed.

1. Inheritance of properties

Distinguish different ways of inheriting properties for different classes of predicates

i. Episodic predicates

1. a. John has encountered hostility.

b. John has encountered the property of being hostile.

1. a. Generosity is rarely reciprocated.

b. The property of being generous is rarely reciprocated.

ii. Predicates of evaluation

1. a. Friendliness is nice.

b. The property of being friendly is nice.

1. a. Ordinariness is boring.

b. The property of being ordinary is boring.

iii. Intensional predicates

(9) a. John is looking for honesty.

b. John is looking for the property of being honest.

(10) a. John needs efficiency.

b. John needs the property of being efficient.

iv. Existence predicates

(11) a. Generosity exists.

b. The property of being generous exists.

v. Instance-distribution predicates

(12) a. Honesty is rare.

b. Sloppiness is widespread.

(13) a. ?? The property of being honest is rare.

b. ?? The property of being sloppy is widespread.

Lack of property inheritance not limited to explicit property descriptions

(14) a. John never encountered the attribute of honesty / that property / that entity /

that thing.

b. The attribute of honesty / That property / That entity / That thing is interesting.

c. John needs the attribute of honesty / that property / that entity / that thing.

d. The attribute of honesty exists.

e. The attribute of honesty / that property / that entity / that thing is rare.

**1.5. Kind reference**

Parallels to other kind terms (for kinds of substances / individuals):

simple bare mass nouns and plurals:

(15) a. John found gold.

b. John bought apples.

(16) a. Gold is shiny.

b. Apples are healthy.

(17) a. John needs gold.

b. John needs apples.

(18) a. Yellow roses exist.

b. Three-legged dogs exist.

(19) a. Dinosaurs are extinct.

b. Pink diamonds are rare.

c. Pigeons are widespread in Europe.

Explicit kind-referring terms behave same way (Carlson’s observation)

(20) a. John found this kind of fruit.

1. This kind of animal is striped.
2. John needs this kind of metal.
3. This kind of animal exists.

Against making bare nouns ambiguous (my observation):

(21) John found something that is rare, not often needed, and very expensive,

namely pink diamonds.

Conclusion

Bare adjective nominalizations refer to kinds of tropes, just like bare mass nouns refer to kinds of quantities, bare plurals kinds of collections.

Same argument against ambiguity of bare adjective nominalization

(22) a. John encountered the same thing as Mary, namely hostility.

1. Courage is something that is admirable.
2. John needs something, namely courage.
3. True courage is something that is rare.

**1.6. Kinds vs properties: the ontological and the plural reference account**

Kinds crucially inherit properties in one way or another from their bearers, properties are ascribed properties directly

Aristotle’s notion of ‘secondary substance

Kinds of tropes: secondary tropes

The ontological account

Kinds are not bearers of properties, in certain sense of property

The plural reference account

Kind terms referring plurally to all the (actual or possible) instances at once.

Ontological account will make use of derived applications of predicates

(23) a. [P]w, t(d, k) = 1 iff Gn d’ [d’ Iw, t k] [P]w, t(d, d’) = 1 if P is a

transitive individual-level predicate.

b. [P]w, t(d, k) = 1 iff d’(d’ Iw, t k & [P]w, t(d, d’) = 1) if P is a

transitive stage-level predicate.

Two domains of entities: O: objects; N: ‘nonobjects

(24) **D** = **N**  **O** (where **N**  **O** = )

(25) [*-thing*] = N  O

[*thing*] = O

(26) For an entity d  **N**, [*property*]w, t(d)  **O**.

The plural reference account

Corresponding conditions on modalized plural arguments

Properties of properties

(27) a. The property of being pure is negative.

b. Purity is negative

(28) a. The property of being honest is complex.

b. ?? Honesty is complex.

(29) a. The property of being universally recognized is quantificational.

b. ?? Universal recognition is quantificational.

(30) a. The property of being poor is vague.

b. ?? Poverty is vague.

(31) a. The property of fatherhood is relational.

b. ?? Fatherhood is relational.

(32) a. The property of being a round circle is contradictory.

b. ?? Round circles are contradictory.

The ontological account

For an entity d  **N**, [*property*]w, t(d)  **O**.

*Property* as a reifying noun

(33) a. Courage is an admirable property.

b. Friendliness is my favourite attribute.

c. Honesty is a virtue.

(34) a. Ordinariness is a property that is interesting.

b. Tallness is a vague property.

(35) a. admirable property (reif([*courage*]))

b. the property of courage

c. [Courage *is an admirable property*] = x[admirable([*property*

*of*](x))]([courage]) = [admirable([*property of*]([*courage*])

Identity statements with kinds vs with properties

(36) a. Men who breathe are men who live. (contingently true)

b. The property of being a man who breathes is the property of being a man who lives.

(necessarily false)

(37) a. Water is H2O. (necessarily true)

b. The property of being water is the property of being H2O or being a round circle.

(rather false)

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**2. Quantification into predicate position**

# 2.1 Predicates and their meaning in a sentence

Frege

Predicates refer to concepts,

concept – object distinction as an ontological ontological distinction other views: predicates stand in a different relation to a ‘concept’ than reference

Carnap:

Predicates have an intension (concept-like) and an extension (set of entities of which predicate is true)

Related view:

Predicates express concepts, do not refer to them.

Quine

Predicates do not refer, do not denote, do not express a meaning

Predicates *are true of* objects, predicates only have application conditions

Second-order logic

Uses set theory to construe ‘what predicates are true of’,

set / function denoted by a predicate to be understood differently from the set / function denoted by a set-referring / function-referring term

terms: denotation is element of the domain D

predicates: set of elements of D, function from elements of D to truth values

**2.2. Analysis of the copula-predicate complement relationship**

* Copula expresses attribution (Wright (?))
* Copula ‘triggers’ unsaturatedness (Wiggins)  how ??
* Copulas contributing more: *become, remain*

Copula as expressing a relation between individuals and properties as objects

(38) a. John is happy.

b. is(John, the property of happiness)

*happy* refers to the property of being happy or expresses the property of being happy

The problem

substitution of predicative complement by expression contributing the same argument impossible:

(39) ?? John is the property of happiness.

Is the substitution problem avoided on a type-theoretic account? type theory (e.g. Montague):

domain of entities D, domain of truth values T (and, if intensional, domain of indices I (worlds, times))

syntactic type assigned to syntactic categories, syntactic type associated with semantic types e: type of objects

t: type of truth values

<e, t>: type of function from objects to truth values Types incorporate semantic composition:

combination of expression of type <e, t> with expression of type e yields expression of type t (function application)

*is*: takes arguments of type e (individuals in the domain D) and arguments and type <e, t> referential NPs: of type e

predicative complements: of type <e, t>

*Is*: of type < <e, t>, <e, t>>

Again:

Distinguish function as denoted by expression of functional type from function as denoted by expression of type e.

That is, type-theoretic denotation of type <e, t> does not (just) specify type of object denoted, but rather ‘captures’ the semantic contribution of the expressions of a particular syntactic category to the composition of the denotation of the sentence

‘Types’ are not types of objects, but ways of capturing the semantic contribution of an expression to the overall meaning of the sentence

Type theory does not construe predicate denotations ontologically.

Rather it takes their semantic contribution to be being true of some individuals, false of others, and construes that semantic contribution as a function from individuals to truth values Furthermore, it construes the copula *is* as expressing a relation between individuals and functions so construed

More transparently: predicative complement retains its attribution function within the meaning of the complex predicate:

Copula as a syncategorematic expression

(40) [*remain a lawyer*]t (d) = 1 iff for all (relevant) times t' < t, [*a lawyer*]t'(d) = 1 and

[*a lawyer*]t(d) = 1.

**2.3. More on propredicative quantifiers**

* independence of syntactic position
* beyond distinction between types

Data showing independence of syntactic selection and type distinctions

(41) a. \* John became something Mary did not say.

b. \* John is something Mary was thinking.

(42) a. \* John is something Mary complained.

b. John is something Mary complained about.

Terms for suitable entities

(43) a. John is something Mary never imagined, namely wise.

b. Mary never imagined *John’s wisdom.*

(44) a. John has become something Mary never thought possible, namely very athletic.

b. Mary never thought *John’s athleticism* possible.

(45) a. John is everything Mary despises, dishonest, unhelpful, and immodest.

b. Mary despises *dishonesty, unhelpfulness, and immodesty*.

(46) a. John has become everything Bill aspires to, wise, diligent, and excellent.

b. Bill aspires to *wisdom, diligence, and excellence*.

Predicates with propredicative quantifiers

(47) a. John is something I had never noticed before, namely very diligent.

b. John is everything that can make Mary upset.

(48) a. John became something admirable, namely wise.

b. The property of being wise is admirable.

(49) a. John has become something surprising, namely fluent in Chinese.

b. The property of being fluent in Chinese is surprising.

**2.4. Formal analysis of propredicative quantifiers**

(Adjectival) predicates express relation between individuals and tropes:

(50) a. John is happy.

b. t happy(John, t)

Special quantifiers as nominalizing quantifiers

Take scope as well as nominalization domain:

(51) a. John became something admirable.

b. [something admirable]i John [ik became tk ]]]

(52) a. [ki became ti] = { <x, t> | C (become(x, C) & <t, x>  f1(C) )}

b. f1(C ) = C

c. t(t  [admirable] & <John, t>  [ki became ti]

(53) [ki became ti] = { <x, t> | C (become(x, C) & <t, x>  f2(C) )} b. f2 (C) =

{ <x, k> | k = fk(C)}

Two nominalization domains:

(54) John became something Mary is too.

(55) a. somethingj Oi Mary [ik is tk] too John [jk became tk ]

b. t(t  [ik Mary is tk too] & <John, t>  [ki became ti])

(56) John walks somehow.

(57) a. Somehowi John [ik walks tk]

b.t (SEC-ORD(t) & R e t’(walk(e, j) & R(e, t’) & <John, t>  f(R))

c. [ik walks tk] = { <x, t> | R e t’(walk(e, j) & R(e, t’) & <e, t>  f1(R)

d. f1(R) = R

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