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# The Semantics of Tropes

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## 1. Basic properties of tropes

some 'standard' examples:

the redness of the apple

the beauty of the picture

the gentleness of John

two kinds of intuitive descriptions:

[1] concrete manifestations of properties in individuals, 'concretized properties', 'particularized properties'

[2] 'abstract particulars': the thing you get when you abstract away from all the properties an individual has except for one, if you attend to only one of the properties an object has

tropes in contemporary (as well as ancient and medieval) metaphysics:

primitives, not defined in terms of properties and individuals

the term 'trope': Williams (1953)

contemporary alternatives: 'abstract particulars' (Campbell), 'attribute instances' (Mertz), 'modes' (Lowe), moments (Mulligan, Simons, Smith 1984), 'cases' (Woltersdorff)

historical alternatives: accidents (Aristotle), modes (medieval and upwards),

some basic facts about tropes:

tropes based on adjectival properties:

*the redness of the apple, the roundness of the object*

tropes based on sortal predicates:

*John's fatherhood*

tropes with abstract bearers

*the roundness of the circle*

relational tropes:

(1) a. the love between John and Mary

b. John's anger at Mary

collections of tropes:

(2) a. John's anger and Bill's anger are very different.

b. John compared two things, the beauty of the picture and the beauty of the landscape.

tropes instantiating complex properties:

(3) John's mean and injust behavior toward Mary

higher-order tropes:

(4) a. the unexpectedness of the beauty of the landscape

b. the unusualness of the lightness of the stone

higher-order relational trope:

(5) the difference / similarity between the beauty of the picture and the beauty of the landscape

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## 2. Tropes vs. Properties

What distinguishes tropes from properties?

- properties: universals, can have multiple instantiations,
  tropes: are particulars, are as concrete as the individuals that are their bearers
- properties: no location or multiple locations
  tropes: located where the individual bearer is located: If individual bearer is located somewhere, the trope is located there as well
- properties: as abstract objects not objects of perception
  tropes: objects of perception (if bearer is concrete)
- properties: as abstract objects not relata of causal relations
  tropes: relata of causal relations (like events)

**relation between tropes and predicates:**

properties as expressed by predicates ('abundant properties'): may be indeterminate, unspecific, quantificational, disjunctive e.g. *red, nice, strange, unusual, irregular, dirty*

tropes: are entities *in* the world

thus are instances or determinate, maximally specific, nonquantificational properties

→ are instances of 'sparse', 'natural' properties

example: the redness of the apple: not the instantiation of just redness in the apple, but the instantiation in the apple of whatever the particular shade of red is that the apple has

**two kinds of universals (Levinson 1978):**

properties (conditions): *being wise, being red, being patient*

qualities: *wisdom, redness, patience*

Properties and qualities are necessarily co-instantiated, but they re are distinct universals

differences between properties and qualities:

qualities are quantizable: *an abundance of charity, much patience, more redness, greater solubility* (exceptions to quantizability: *four-sidedness, medical deadness*)

properties are not: * *an abundance of being charitable*, * *much being wise*

adjective nominalizations are mass nouns

qualities as 'nonmaterial stuff'

particularization of qualities, e.g. John's patience: tropes

no particularization of properties

John's being patient: a state

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## 3. The role of tropes in the history of philosophy

### 3.1. Aristotle (and Plato)

Aristotle: **four-category ontology**

**individuals (substances)** – universals with individuals as instances: **secondary substances**

**accidents** (instances of accidental properties in individuals) – universals: **qualities**

instances of essential properties: **substantial forms**

modern four-category ontologist: Lowe

### 3.2. Medieval philosophy

nominalism: individuals and tropes as the only real entities

universals in fact predicates (nominalism) or mental concepts (conceptualism) (Ockham)

four-category- or two-category ontology

### 3.3. Early modern philosophy

Spinoza: only one entity that is a nontrope: god

Locke, Husserl

**3.4. Contemporary metaphysics**

interest in tropes for the purpose of a **one-category ontology** (Williams, Campbell, Bacon, Simons): individuals and universals reduced to tropes

individuals: bundles of *compresent* or *concurrent* or *co-located* tropes

universals: collections of *exactly similar* or *resembling* tropes

the foundations of the world: tropes, compresence, resemblance

another parameter distinguishing fundamentally different trope ontologies:

tropes as independent, complete entities: Campbell, Bacon

tropes as predicational / incomplete: Mertz

*John is wise* is true iff there is a wisdom trope t that is true of John.

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## 4. Tropes and the Semantics of Natural Language

**4.1. explicit trope-referring terms**

*the redness of the apple, the wisdom the Socrates* as trope-referring terms

medieval philosophers, Strawson (1959), Woltersdorff (1970)

temporal / spatial location:

(6) John's happiness lasted only a year.

object of perception:

(7) a. John noted the redness of the apple.

b. John observed Mary's haste.

object of causal relation:

(8) The heaviness of the bag she was carrying made Mary exhausted.

another use of trope-referring terms (Woltersdorff):

*Socrates' wisdom* as a term referring to a more specific universal than *wisdom*:

the property everyone has that is wise in the same way as Socrates

(9) a. John has the wisdom of Socrates.

b. John needs the wisdom of Socrates.

c. One only rarely finds wisdom / ? the wisdom of Socrates.

d. ? John has the anger of Mary.

<u>yet another use of trope-referring terms:</u>
referring to entities with variable manifestations:
(10) a. Mary's competence has increased / diminished over time.
b. The beauty of the landscape has changed.

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## 5. Tropes vs. States of Affairs, Facts, States

### 5.1. kinds of terms

explicit trope descriptions: NP's ADJ-*ness* (-*ity*,…) *John's happiness*
explicit fact descriptions: *the fact that John likes Mary*
explicit state descriptions *(the state of) John's liking Mary*

general tropes sortals: *quality, behaviour, virtue, vice*
general fact sortal: *fact(s)*
general state sortal: *state(s)*

<u>tropes with facts / states / states of affairs as bearers:</u>
*the unexpectedness of the fact that Mary has been robbed*
<u>tropes with propositions as bearers</u>
*the truth of the proposition that* S
<u>a fact</u> as the truth of a proposition → as a trope with a proposition as bearer
<u>other propositional tropes (if there are propositions):</u>
(11) a. the fact that Mary likes Bill
b. the possibility that Mary likes Bill
c. the belief that Mary likes Bill
nonrelational tropes with propositions as bearers

### 5.2. the main differences between tropes and facts / states / states of affairs:

**[1] concrete-abstract**

tropes if their bearers are concrete act as

- objects of perception
- relata of causal relations
- entities located in space and time

facts / states / states of affairs:

- not objects of perception
- not relata of causal relations, but of causal explanations (Steward)
- not located in space and time (though states located in time)

(12) ? John saw the fact that it was raining.

(13) ?? The fact that it was raining lasted two hours / took place in NYC.

(14) a. John saw the beauty of the rock formation.

b. ?? John saw (the state of the) the rock formation being beautiful.

**[2] description-'dependence'**

<u>tropes:</u>

[1] generally have an internal structure 'below' the description used to refer to them:

(15) a. John described Mary's beauty.

b. ?? John described (the state of) Mary's being beautiful.

(16) a. John compared Mary's beauty to Sue's beauty.

b. ?? John compared (the state of) Mary's being beautiful to (the state of) Sue's being beautiful.

[2] can in principle be described in various different ways:

the redness of the apple = the intense redness of the apple

<u>facts / states / states of affairs:</u>

Correspond to the propositional meaning of the explicit fact or state description that could be used to refer to them

the fact that the apple is red =/= the fact that the apple is intensely red

**[3] part-whole structure**

<u>tropes:</u>

have part-whole structure, have an extent, can be measured with respect to their extent

<u>facts / states / states of affairs:</u>

have no part-whole structure, have no extent, cannot be measured in that respect

linguistic indications:

(17) a. all of Mary's happiness / talent / comfort / beauty

b. * all of the fact that Mary likes Bill – namely Mary, Bill and the liking relation

c. * all of the state of Mary's liking Bill – namely Mary, Bill and the liking relation

(18) a. Mary's happiness exceeds Bill's.

b. * The fact that Mary likes Bill exceeds the fact that Mary is tall.

c. * The state of Mary's liking Bill exceeds the state of Mary's being tall.

→ the 'constituents' of facts and states of affairs are not treated as parts!

**[4] bearer uniqueness**

tropes as referents of explicit trope-referring terms may not have a unique bearer:

the sharpness of the knife = the sharpness of the blade of the knife

the redness of the sweater = the redness of the wool of the sweater

the fact that the knife is sharp =/= the fact that the blade is sharp

(the fact that the knife is sharp implies the fact that the blade is sharp, but not conversely)

the fact that the sweater is red =/= the fact that the wool of the sweater is red

(the fact that the sweater is red implies the fact that the wool of the sweater is red, but not conversely)

**5.3. What does the ontological difference between tropes and facts / states / states of affairs reside in?**

three possible views:

[1] facts / states may constituted by determinable, non-specific, quantificational properties; tropes must be grounded in instances of natural (sparse) properties

<u>the problem:</u>

The nature of a trope could in principle be fully displayed by an explicit fact description, but such a fact description will still refer to a fact not a trope.

[3] Steward's proposal: 'Secret Life Requirement' (Helen Steward *The Ontology of Mind*, 1997): Events (Tropes) may have a description that the relevant agent may not be aware of; states have a canonical description constituting them.

<u>the problem</u>: difference would be epistemological, not ontological in nature

[3] Facts and states are constituted by what could be the content of an explicit fact or state description; tropes independent of the content of any possible tropes description

<u>A puzzle</u>:

Why do propositional constituents not act as parts of facts / states / states of affairs?

**5.4. Other trope-referring terms**

*the quality of the paper*

*the degree of Mary's happiness*

*the extent of John's anger*

*the personal relation between John and Mary*

*the difference between John and Mary*

*the diplomatic relations among the countries*

more generally: abstract N + referential complement ➔ trope-referring term

<u>*the number of the planets* (!):</u>

(19) a. The number of women astonished John.

b. John did not notice the number of women.

(20) a. *. The number of planets is the number eight.

b. The number of women exceeds the number of men.

c. * (The number) ten exceeds (the number) four.

d. The women exceeds the men (in number).

e. * John subtracted four from the number of women.

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## 6. Tropes vs. Qua objects

qua object: John qua being a father

trope: John's fatherhood

(21) a. John is admirable as a father, but not as a colleague

b. John as a father is admirable.

(22) a. John is young as a father

b. John is not young as a high school student.

c. John as a father is young.

Qua objects as entities derived from objects and properties:

(i) A qua object o qua P exists in w at t iff o is P in w at t

(ii) A qua object o qua P is identical to a qua object o' qua P' iff o = o', P = P'.

(iii) A qua object o qua P that exists at w and t has a property Q iff Q holds of o at w and t and Q's holding of o at w and t is based on o being P.

alternative view:

qua object obtained from an object and a trope: o qua bearing t

What distinguishes a qua object from a trope?

ontological 'focus':

trope: focus on the property qua object: focus on the bearer

**Do qua objects display the same 'ontological possibilities' as tropes?**

complex properties:

*John as father and as a teacher.*

collections as base:

*John and a Mary as a couple*

relational qua objects:

John as an admirer of Mozart: inheritance of one-place properties (of John)

better:

(23) a. John and Mary as employer and employee

b. John and Mary as a loving couple

inheritance of collective and relational properties

higher-order qua objects

perhaps not possible: only multiple property specifications possible

John qua a person qua a father

by contrast: *the unexpectedness of the success of Mary* vs *the unexpected success of Mary*

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## 7. Tropes and Events

**7.1. Ontological parallels between tropes and events**

1. particulars (as opposed to universals)
2. generally concrete: in space and time, causal relata, perceivable
3. internal structure, fully specific (on Davidson's account, but not on Kim's)

<u>same observations with events vs. facts</u>

(24) a. John described Mary's walk home.

b. ?? John described the fact that Mary walked home.

(25) a. John compared Mary's walk to Bill's walk.

b. ? John compared the fact that Mary walked home to the fact that Bill walked home.

(26) a. John watched Mary's walk home.

b. ?? John watched the fact that Mary walked home.

4. mereology of events, mereology of tropes

(27) All of the war took place in two cities.

5. apparent lack of bearer uniqueness

(28) a. the sharpening of the knife = the sharpening of the blade of the knife.

b. the dyeing of the sweater = the dyeing of the wool of the sweater.

6. inheritance of part structure?

Part structure of events corresponds to part structure of object:

*the eating of the apple* → *the eating of the apples*

Doers the part structure of a trope corresponds to the part structure of the bearer (with suitable predicates)?

*the redness of the apple* → ?? *the rednesses of the apples*

? *the qualities of the objects, the beauties of the women*

Ok *the redness of the apples, the quality of the objects, the beauty of the women*

**7.2. Semantic parallels between tropes and events**

1. introduced by predicates
2. arguments of modifiers (adjectival: tropes, adverbial: events)
3. referents of nominalizations
4. extended Davidsonian semantics seems applicable to tropes as to events:

events as implicit arguments of verbs, tropes as implicit arguments of adjectives

adverbials as predicates of events, adjective modifiers as predicates of tropes

(29) a. John walked quickly.

b. ∃e(walk(e, John) & quickly(e)) (Davidson)

c. ∃t(red(t, the rose) & deeply(t))

(30) a. [*the rose's deep redness*] = ιt[red(t, the rose) & deep(t)]

b. [*John's quick walk*] = ιe[walk(e, John) & quick(e)]

**7.3. Tropes as an ontological category comprising events -- a widespread view**

**Three possibilities:**

**[1] events as tropes involving a complex property**

events as tropes based on a 'dynamic property':

the property being P at t and Q at t', for subsequent times t and t' and contrary properties P and Q

How does this fare with our 'linguistic' intuitions?

(31) a. John's happiness and subsequent unhappiness

b. John's loss of happiness

c. John's becoming unhappy

<u>the problem:</u>

predicates applicable to events, but not to tropes based on dynamic properties:

(32) a. John's loss of happiness was sudden / was unexpected.

b. * John's happiness and subsequent unhappiness was sudden / was unexpected.

**[2] events as collections of 'tensed' tropes**

the collection of two tropes with the same bearer one involving 'being P at t' and one involving 'being Q at t'' for contrary properties P and Q

<u>the problem:</u>

collective predicates may be true of collections of tropes, but not of events:

(33) a. John's happiness and subsequent unhappiness were equally surprising / resembled each other / lasted the same number of years.

b. * John's loss of happiness equally surprising / resembled each other / lasted the same number of years.

**[3] events as transitions among tropes**

Mertz (1996): Events are relational tropes: instantiations of temporal or causal relations in two or more tropes

John's becoming unhappy: the transition of John's being happy to John's being unhappy

John's killing of Bill: The causation of Bill's being dead by John's act

further differences between events tropes: comparative contexts

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## 8. Trope Reference

### 8.1. Natural language predicates and tropes

Tropes referred to with predicates, however determinable, unspecific, quantificational, are always maximally specific: can be compared, described, etc in maximal specificity

### 8.2. Case 1: determinate – determinable properties

Do the following refer to identical tropes?

*the redness of the apple - the color of the apple*

*the form of the figure - the rectangularity of the figure*

potential tests:

(34) a. The redness of apple 1 is the same as the redness of apple 2.

b. The color of apple 1 is the same as the color of apple 2.

(35) a. The form of figure 1 is better than the form of figure 2.

b. The rectangularity of figure 1 is better than the rectangularity of figure 2.

(36) a. The color of the leaf has changed.

b. The redness of the leaf has changed.

### 8.3. Case 2: polar adjectives

Do the following terms refer to identical tropes, supposing they both refer?

*John's weakness - John's strength*

*the darkness of the room - the lightness of the room*

**The crucial intuitions:**

<u>the occasion</u>: analyse comparatives without using degrees:

(37) a. John is happier than Mary.

b. John's happiness exceeds Mary's happiness.

(38) a. The cellar is darker than the kitchen.

b. The darkness of the cellar exceeds the darkness of the kitchen.

The paraphrase seems correct, but this *despite* the standard view of tropes as entities with various sorts of property dimensions.

(38b) cannot be read as:

(39) The darkness of the cellar exceeds the darkness of the kitchen

- because the cellar is larger than the kitchen
- because the cellar has been darker for longer than the kitchen
- because the cellar's darkness is more typical / expected / desired than the darkness of the kitchen.

➔ single reading of the *exceed*-predicate

**The problem of direction:**

(40) a. John is stronger than Mary.

b. John's strength exceeds Mary's strength.

(41) a. Mary is weaker than John.

b. Mary's weakness exceeds the weakness of John.

Suppose John is kind of weak and also John is kind of strong, i.e.

John's weakness = John's strength, and so for Mary:

(42) a. John's strength exceeds Mary's strength.

b. Mary's weakness exceeds John's weakness.

c. John's weakness is John's strength.

d. Mary's weakness = Mary's strength.

e. John's weakness exceeds Mary's weakness.

**Same behaviour of <u>adjectives of intensity</u>:**

(43) John's strength is great.

<u>Mary's strength is negligible.</u>

John's strength exceeds Mary's strength.

(44) Mary's weakness is great.

<u>John's weakness is negligible.</u>

Mary's weakness exceeds John's weakness.

**Summary:**

[1] Adjective nominalization restricts trope to one dimension of comparison with 'exceed': the extent to which the property is instantiated

[2] Adjective nominalization gives direction of comparison: orders tropes with respect to the extent to which they instantiate the property in question.

**Account:**

not reference to standard tropes, but reference to either relational topes or qua tropes:

[1] relational tropes

Mary's weakness: the instantiation of 'weak' in the physical condition of Mary

Mary's strength: the instantiation of 'strong' in the physical condition of Mary

- what is a greater / better instantiation of a property than another?
- how to explain application of exceed relation?

[2] qua tropes

Mary's weakness: Mary's physical condition qua being a weakness

Mary's strength: Mary's physical condition qua being a strength

allows explanation of the application of exceed-relation (property inheritance for qua objects)

<u>events:</u>

not a single exceed-relation:

(45) a. John's walk exceeds Mary's walk.

b. John's eating of the apple exceeded Mary's eating of the apple.

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## 9. Summary

Explicit reference to tropes in natural language is rather pervasive,

in general in fact reference to tropes rather than reference to truly abstract objects

But the notion of trope as standardly conceived (in philosophy) must for the purpose of apparently trope-referring terms be replaced by another notion of a *qua trope*.

Qua tropes are not merely things in the world: they are partly conceptual entities.

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