## Explicit Expressions of Truth-Making in Natural Language

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## 1. The issue

Truth-making arguably is a relation important for the philosophical notion of truth

Does the truth making relation play an explicit role in the semantics of natural language?

Are there subsentential expressions or constructions that involve the truth-making relation in the semantic interpretation?

Semantic literature:

- Almost no use of truth making in semantic theories
- Moltmann (2007): alternative to Davidsonian event semantics: events as truth makers rather than implicit arguments of verbs
- related notions used in the semantic literature:

    truth-supporting circumstances (situation semantics of Barwise/Perry and of Kratzer)

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## 2. Events, tropes, and states as truth makers

### 2.1. A common view

It is left open what actually a truth maker is, perhaps 'state of affairs', 'facts' in some sense,

In any case, an entity whose features imply the truth of the relevant sentences

### 2.2. Mulligan / Simons / Smith (2004)

Fully individuated entities are truth makers, entities whose ontological role is established independently.

Events, tropes, individuals as truth makers

Independent role as objects of perception and relata of causal relation

Choice of truth makers:

(1) a. John is happy.

Truth maker: John's happiness (a trope)

    b. John is walking.

Truth maker: John's walk (an event)

    c. John exists.

Truth maker: John (an individual)

    d. John is a man.

Truth maker: John  or a trope ('John's humanity')

## 2.3. Moltmann (2007): Application of truth making to the semantics of adverbials and nominalizations

(2) a. John walks slowly.

    b. $\exists s$ (walk(e, John) & slowly(e))

    c. $\exists s$ (s|= John walks & slowly(s))

Adverbials are predicates of events or 'situations', verbs are not

Nominalizations:

Davidsonian account:

(3) a. [*John's slow walk*] = sum e[walk(e, John) & slow(e)]

truth maker account:

(3) b. sum  s[s |= John walks & slow(s)]

Stacked adverbials:

(4) a. John carefully opened the book with both hands.

the problem for the Davidsonian account:

Adverbials will generally need to have two argument positions for events.

(4) b. $\exists$ e $\exists$ e'(careful(e) & with both hands(e, e') & open(e', John, the book))

the truth maker account:

(4) c.  ∃s ( careful (s) & s |= *John opened the book with both hands*)

   d. s |= *John opened the book with both hands* iff  ∃s' (s |=  <'with both hands', s'> &

     s' |=  *John opened the book*)


Adverbs modifiying quantified VPs:

(5) a. John quickly ate all the chips.

The problem for the Davidsonian account:

*all* will need an additional event argument position

(5) b.  ∃e (quickly(e) & ALL(e) x    ∃e'(e' < e & eat(e, John, x))

truth maker account:

(5) c.  ∃s(quickly(s) & s |= *John ate all the chips*)

Stacked frequency adverbials:

(6) a. John sometimes trains frequently:

   b. Sometimes s   s |= *John trains frequently*.

   c. s |=  *John trains frequently* iff frequently s' < s  s' |= *John trains*.


Some issues

Negative truth makers

(7) a. John carefully did not object.

Several choices of truth makers:

(7) b. The landscape is extremely beautiful.

Truth maker 1: the extreme beauty of the landscape

Truth maker 2: the extremeness of the beauty of the landscape

(7) c.  John believes that S.

Truth maker 1: John's belief that S.

 Truth maker 2: John's believing that S.


Truth making with stative verbs

Two kinds of stative verbs

Concrete state verbs (fully specific states): *sit stand, sleep*

Abstract state verbs: *believe, know, own, exist*, *be* + adjective

The stative adverb gap (Katz 2003):

Only concrete state verbs, not abstract state verbs allow for location modifiers, manner modifiers, can act as complements of perception verbs (Maienborn 2007)

(8) a. John stood in front of the mirror.

   b. Mary saw John stand in front of the mirror

 (9) a. John was hungry in front of a mirror

     b. ?? John saw Mary be beautiful.

The problem for truthmaking:

Abstract states are not fully specific, they are just the holding of a (non-natural) property of an object, thus are abstract and not part of the world.

## 2.4. General concerns

The notion of exact truth making:

An entity o makes a sentence S exactly true iff o is wholly relevant for the truth of S.

Abstract states vs tropes, facts vs tropes

Mary-s being beautiful - Mary's beauty – the fact that Mary is beautiful.

Tropes are fully specific, grounded in instances of natural properties; states and facts are not

Events vs (atomic) facts:

John's walking makes true *John is walking*. But the particular way and location of John's walking is not relevant for the truth of the sentence

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## 3.  A perhaps more convincing construction expressing truth making: *is the case*

## 3.1. Differences between *is true* and *is the case*

Two kinds of clausal constructions:

Extraposition:

(10) a. It is true that S.

       b. It is the case that S.

(Apparent) subject clauses:

(11) a. That S is true.

b. That S is the case.


A common view:

- *That* S is in (11a) stands for a proposition, *true* is predicated of the proposition

  Or: *true* acts as an operator applying to a sentence (captures (10a))

- *That* S in (10b) and (10b) stands for a wordly fact ilf the sentence is true (Identity Theory of truth)


Linguistic differences between *is true* and *is the case*:

Syntactic difference:

[1]  *The case* does not have the status of a predicate, *true* does.

Standard linguistic criterion for predicatehood:

being able to act as the predicate in small-clause constructions

Small clause: NP + adjective phrase or noun phrase

(12) a. I consider Bill Joe.

b. I consider Bill wise.

c. I consider Bill a good player.

*The case* does not enter small-clause construction, unlike *true*

(13) a. I consider it true that John is a genius.

b. ?? I consider it the case that John is a genius.


[2]  Difference in the choice of copula verb

The case is restricted to be, true accepts become, remain, seem

(14) a. That John is the best player will always ?? remain / ok  be the case.

b. That John is happy has finally become the case.

(15) a. John's threat / speculation became true.

b. The generalization remained true despite the changing circumstances.


Semantic differences:

[1] Possibility of past and future tense:

(16) a. It will often be the case that Mary forgets something.

b. ?? It will often be true that Mary forgets something.

(17) a. It was once the case that no one knew of Michael Jackson. Today it is no longer the
case.

    b. ?? It was once true that no one knew of Michael Jackson. Today it is no longer true.

 [2] Location restrictions:

(18) a. In many European countries, it is still the case that women can wear a burka.

    b. ?? In many European countries it is still true that women can wear a burka.

(19) a. In our firm it is never the case that someone gets fired without explanation.

    b. ??? In our firm it is never true that someone gets fired without explanation.

[3] Adverbs of quantification:

(20) a. It is sometimes the case that someone is absent.

    b. ?? It is sometimes true that someone is absent.

(21) a. It was twice the case that someone was absent.

    b. ??? It was twice true that someone was absent.

(21) a. It is repeatedly / more and more / always the case that John drinks coffee in the
morning.

    b. ??? It is repeatedly / always true that John drinks coffee in the morning.

Some quantificational adverbs act as degree quantifiers with *true*, but as situation quantifiers
with *the case*:

(22) a. It is hardly (ever) the case that John is late.

    b. It is hardly true that John is late.

(23) a. It is more and more the case that John drinks coffee in the morning.

  b. It is more and more true that John drinks coffee in the morning.


[4] 'Propositional completion':

Conclusion from the use of adverbs of quantification:

 *That* S in *That* S *is true* is understood as complete regarding context-dependent elements (
quantifier restrictions, tense interpretation, location etc.), though the proposition expressed
may involve 'unarticulated constituents'.

*That* S not propositionally complete.

Against an identity theoretic account of *the is the* case construction:

*That*-clause can be true relative to different situations:

(24) It was once the case that S. Today *that* is the case again.

Other predicates like *is the case*:

*occur*

(25) It has never occurred that John did not return.


Difference between *it is the case that* S and *it occurs that* S:

Restrictions on *it occurs* to eventive *that*-clauses

(26) a. ?? In European countries it occurs that woman can still wear the burka.

    b. Sometimes it occurs that Mary forgets something.


**3.2. An analysis of *is the case* based on the truth-making relation**


The idea:

The *is the case* construction involves reference to an actual situation which is said to make the *that*-clause true.

The situation referred to acts as the *truth maker* of the *that*-clause.


Explaining the semantic behavior of the *is the case*-construction

Locational and temporal restrictions in the *is the case*-construction act as restrictions on the situation referred to.

Adverbs of quantification quantify over situations said to make the *that*-clause true.


Exact truth-making:

The truth-making relation involved is the relation of exact truth-making

counting with adverbs of quantification:

(27) a. It was exactly twice the case that John made a mistake.

    b. It was only once the case that John lost the game.


Comparison with Austin's notion of truth:

Austin: With a sentence a speaker refers to an actual situation, and asserts the sentence relative to that situation.

Austin's motivation:

The situation referred to is responsible for contextual restrictions, on quantification domains, temporal and spatial interpretation etc.

Facts (situations) as worldly things making sentences true.

<u>The present view:</u>

The truth-making relation meant to hold between a situation and a sentence uttered is not necessarily responsible for contextual restrictions (different situations may be needed for different parts of the sentence, problems with attributively used definite descriptions)

The truth-making relation is just involved in the constructional meaning of *the is the case*.


Roughly:

(28) a. For a location modifier PP,

      PP *is the case that* S is true  iff for the maximal situation s such that PP(s), s |= S .

  b. Adverbs of quantification:

      PP *it is* QP  *the case that* S is true iff for Q-many  s such that s is a maximal situation such that PP(s),  s |= S.


## 3.3. The ontological question: what are cases?


<u>The approach:</u>

Cases in the sense of truth-making situations belong to the sort of entity one refers to with explicit case-referring terms


<u>Nominal *case*-constructions:</u>

Cases as possible situations:

(29) a. We discussed the case that John might not return.

  b. ?? We discussed the case that John returned yesterday.

  c. Two cases need to be distinguished: that x is prime and that x is not prime.

Cases and conditionals

(30) a. In case it rains, we won't go.

  b. In a case in which it rains, we won't go.

(31)  Im Fall, dass es regnet, werden wir nicht gehen.

  'In the case that it rains we won't go.'

*Case*-NPs as ordinary referential NPs when used anaphorically:

(32)  a. In case it rains, we won't go.

  b. In that case / In such a case, we will stay home.

c. Let's better not even think about that case.


<u>Ontological characteristics of cases:</u>

Special existence predicates for cases:

In English *occur, present itself*, not *exist, take place, happen*

(33 ) a. The case that John will not return could occur / present itself.

    b. The case that John will not return might exist / might take place / might happen.

In other languages:

(34) a.. Der Fall, dass Hans nicht zurueckommt, koennte eintreten.

     'The case that John might not return could enter'.

   b. Le cas que Joan retourne s'est pas produit.

    'The case that John returns did not produce itself'

<u>Conclusions:</u>

<u>Cases are not facts:</u>

Cases can be merely possible.

Cases do not 'obtain', unlike facts, but rather 'occur', 'present themselves', 'enter', or 'produce themselves'.

<u>Cases are not 'possibilities':</u>

Possibilities as 'mere' possibilities 'exist', cases do not 'exist'.


<u>Cases are not events:</u>

Events can 'happen' or 'take place'; cases cannot.

Events can 'last', be 'sudden' or 'visible', cases cannot:

(35) a. ??? The case in which it rains lasted several hours.

    b. ??? The case that it might snow could be very sudden.

    c. ??? The case in which it snows was hardly visible.

Cases are not concrete !

Spatial location? Spatial modifiers as frame adverbials? (Maienborn 2001)


<u>Suggestion</u>

Cases are merely possible worldly facts, in the sense of being possible situations that could become part of the actual world

## 3.4. Other entities related to cases

Cases as instances of universals

(36) a. This is a case of insanity.

  b. What John has is a case of schizophrenia.

  c. This building is an unusual case of art deco.

  d. The incident is a case of fraud.

Attributive *case*-construction:

(37) a. the case of that incident

  b. the case of the man that has suffered from this illness for more than 20 years.

  c. the case of Mary


Cases of any sort have different properties from the correlated objects:

Partiality:

As objects of mental attitudes:

(38) a. We studied the case of the disabled student. (as a medical / legal case , ..)

  b. We studied the disabled student.

  c. We studied the disability of the student.

 (39)  a. We discussed the case of the book.

   b. We discussed the book.

As objects of evaluation:

(40) a. The case of the stolen statue is interesting.

  b. The stolen statue is interesting.

  c. The theft of the statue is interesting.

(41) a. John compared the case of the first student to the case of the second students.

  b. John compared the first student to the second student.

Parts of cases vs parts of the correlated objects

(42) a. Part of the case of the stolen statue is familiar.

  b. Part of the stolen statue is familiar.

  c. Part of the theft of the stolen statue is familiar.


Other properties of object-correlated cases

no spatial location:

(43) a. ??? The case of the stolen statue is on the table.

     b. The statue is on the table.

Not objects of perception:

(44) a. ??? I saw / noticed the case of the broken vase.

     b. I noticed the broken vase.

Not causally efficacious (except as objects of attitudes)

(45) a. An overweight baby caused the cradle to break apart.

     b. ?? The case of an overweight baby caused the cradle to break apart.


Cases as <u>filtered entities</u>: entities reduced to their relevant aspects and relations

As such cases are abstract entities.

But cases are not (Finean) qua-objects: Cases do not systematically inherit properties from their correlated objects.

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## 4. A compositional analysis of *is the case*?


*The case* as a referential NP referring itself to the truth-making situation?

This cannot be:

*The case* in *it is the case that* S is not a referential NP anymore, but a quasi-referential residue in a grammaticalized construction.

<u>Evidence:</u>

[1] No other determiners than *the* possible:

(45) a. * That S is that case.

     b. * That S is a case / some case.

(46) a. * It is that case that S.

     b. * It is a case / some case that S.

[2] No modifiers possible:

(47) a. * It is the unfortunate case that it is raining.

     b. * That it is raining is the case that I did not expect.

[3] *The case* cannot act as antecedent for nominal *the case*-constructions:

(48) That the workers went on strike was recently the case.

    ?? We did not like that case / the case.

A potentially comparable construction

(49) a. That John is innocent is the truth.

    b. That we would all go is the idea.

    c. That one can walk home is the advantage.

    d. That John is incompetent is the problem.

But major differences:

No extraposition possible:

(50) a. * It is the truth that John is innocent.

    b. * It is the idea that we would all go.

Inversion possible:

(51) a. The truth is that S

    b. The idea is that S.

    c. * The case is that S.


Higgins (1979): (49a-d) are specificational sentences.


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