Cesare Cozzo.
Sapienza University of Rome
Department of Philosophy

Inferentialism and its problems: a panoramic view (not an exhaustive treatment).

### A panoramic view

of inferentialism as a research program.

### The goal of the research program is to establish the plausibility of a core thesis

### Three parts

- 1 The core thesis of inferentialism.
- 2 Historical outline
- 3 Problems inferentialism has to face.

Jaroslav Peregrin, 'Inferentialism and Normativity' in Oxford Handbook of The History of Analytical Philosophy (2013)

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with term 'inferentialism' was coined by Robert Brandom, as a name for his own sweeping and ambitious philosophical doctrine, which drew strongly on the ideas of Brandom's mentor Wifrid Sellars» p. 1082.

Jaroslav Peregrin, 'Inferentialism and Normativity' in Oxford Handbook of The History of Analytical Philosophy (2013)

«However, Brandomian inferentialism can be seen as a culmination of certain trends already latent within both logic and philosophy of language since the outset of modern logic and analytic philosophy» p. 1082.

#### See

J. Peregrin, *Inferentialism*, Palgrave Macmillan, New York, 2014, pp. 1-278.

### What is the core thesis of inferentialism?

### My short answer

The core thesis of inferentialism is that the sense of a <u>statement</u> consists in its role in (some) inferences, its *inferential role*.

### A statement

«Bill is Michael's brother»

### Can be premise of an inference

Bill is Michael's brother

### Can be premise of an inference

Bill is Michael's brother

Michael is Bill's brother

### Conclusion of another inference

Bill is Michael's brother

### Conclusion of another inference

Michael and Bill have the same parents

Bill is Michael's brother

To understand a statement is to apprehend some possible inferences

### **Terminology**

### terminology

- 1. WORDS: smallest linguistic units endowed with meaning
- 2. SENTENCES: smallest linguistic units which can be used to perform linguistic acts.
- 3. TYPE: abstract expression, not spatio-temporally located, repeatable, many instances.
- 4. TOKEN concrete, spatio-temporally located instance of a type

### terminology

- 5. MEANING of a sentence *S*: what a speaker must grasp in order to **understand** S
- 6. STATEMENT: a <u>meaningful</u> sentence-token in a particular <u>context</u> of use

#### the core thesis of inferentialism is that

to grasp the sense of a **statement** *S* is to (implicitly) know how *S* can occur as premiss or conclusion of (some) inferences.

the sense of a <u>statement</u> consists in its role in inferences, its *inferential role*. The sense of a <u>word</u> consists in the contribution it makes to determining the inferential role of any statement in which it occurs.

## Sentences can be used to perform speech acts of different kinds

Assertion: John is sitting.

Question: Is John sitting?

Command: Be seated, John!

These speech acts have the same sense and different force

two ingredients

of the meaning

of a speech act:

sense and force

### Assertion: John is sitting.



Sense X + Assertoric force

Assertion: John is sitting.



Meaning = Sense + Force

Inferentialism
is in the first place
a tenet about sense

## THE THESIS OF INFERENTIALISM IS THE CENTRAL TENET OF A CONCEPTION OF MEANING

# INFERENTIALISM HAS A VERY INFLUENTIAL RIVAL: THE TRUTH-CONDITIONAL CONCEPTION OF MEANING

What does understanding a statement consist in?

What is it that we grasp when we grasp the sense of a statement?

What is it that we grasp when we grasp the sense of a statement?

Two kinds of answer

What is it that we grasp when we grasp the sense of a statement?

Two kinds of answer

a truth-condition

We adopt a truth-conditional conception of meaning

What is it that we grasp when we grasp the sense of a statement?

Two kinds of answer

a way of using the statement in inferences

We adopt INFERENTIALISM

What is it that we grasp when we grasp the sense of a statement?

Two kinds of answer

a truth-condition

We adopt a truth-conditional conception of meaning

a way of using the statement in inferences

We adopt INFERENTIALISM

### Both ideas are old

### Truth-conditional conception

G. Frege, 1893 Grundgesetze vol. I

L. Wittgenstein, 1921 *Tractatus* 

Classical model-theoretic semantics

### Inferentialism

Wittgenstein, 1930s

Philosophische Grammatik

R. Carnap, 1934 Logische Syntax der Sprache

G. Gentzen, *Untersuchungen über das logische Schliessen* Math. Z. **39** (1934)

**Proof-theoretic semantics** 

### II Historical outline

## Different lines of thought intertwine and contribute to the development of inferentialism

## At the origin three names

## Inferentialism in Ludwig Wittgenstein

## Inferentialism in Wittgenstein Bemerkungen über die Grundlagen der Mathematik

«We can conceive the rules of inference – I want to say – as giving the signs their meaning, because they are rules for the use of these signs.» (written in the nineteen-thirties)

(Wittgenstein 1956: VII, § 30)

## Inferentialism in Rudolf Carnap

### Inferentialism in Carnap Logische Syntax der Sprache

«let any postulates and any rules of inference be chosen arbitrarily; then this choice, whatever it may be, will determine what meaning is to be assigned to the fundamental logical symbols.» (Carnap 1934: v)

#### Inferentialism in Gerhard Gentzen

Logical inferentialism: Gerhard Gentzen. "Untersuchungen über das logische Schliessen" (1934)

the introduction rules of natural deduction systems "constitute, as it were, the 'definitions' of the symbols concerned"; i.e., of logical connectives and quantifiers

## Inferentialism in Frege?

# Brandom thinks that Frege in *Begriffsschrift* (1879) is an inferentialist

R. Brandom, Making it Explicit, 1994, pp. 80-2.

### My opinion

There is no conclusive evidence that in *Begriffsschrift* (1879)
Frege adopts inferentialism.

## Robert Brandom coined the term "Inferentialism"

Robert Brandom, Making it Explicit, 1994.

# Inferentialism is an area with many different lines of thought and influences:

## A sketchy visualization

#### Authors who advocated (views akin to) inferentialism

1930-1950	1950-1970	1970-1980	1980-1995	1995-2010
Wittgenstein		Conceptual role semantics (Harman 74, Block 86; Field 77,)	Brandom 1994	
Carnap>	Sellars 54	Lorenzen 70	Peacocke 1992	Peregrin 2006
Gentzen (Hilbert)	Dummett 59		<b>Cozzo</b> 1989, 1994	
	Prawitz 65	<b>→</b>	Schroeder- Heister 1981	Horwich 1998

## III Problems for inferentialism

#### Some problems concerning inferentialism

- 1) Can inferentialism account for the role of sense-experience in language?
- 2) What is an inference (in the relevant sense)?
- 3) Does inferentialism lead to meaning-holism?
- 4) Does inferentialism lead to the view that some inferences are analytically valid (i.e. valid in virtue of meaning)?
- 5) What are the consequences of inferentialism for the choice of a logic?
- 6) Does the notion of reference play any role in inferentialism?
- 7) Does the notion of truth play any role in inferentialism?

# IV. 1 First problem: sense-experience

#### Some problems concerning inferentialism

1) Can inferentialism account for the role of sense-experience in language?

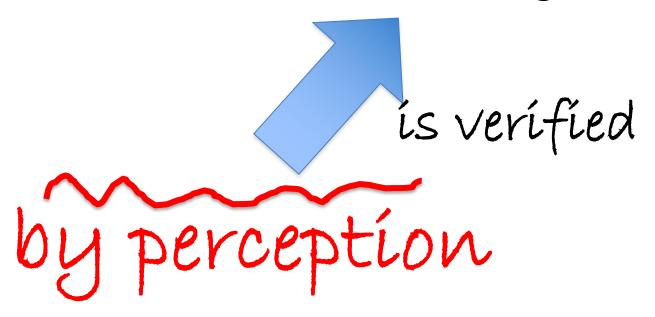
#### A fact

There are statements whose understanding requires an awareness that they are verified and falsified by sense-experience.

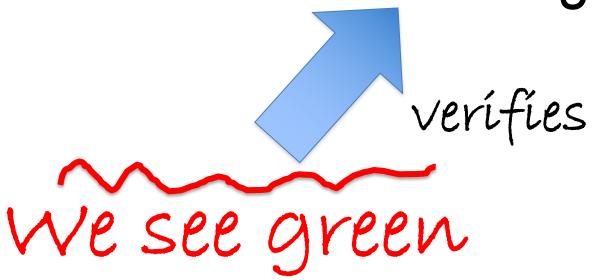
## An observational report

## «that is green»

## «that is green»



«that is green»







if we are not aware of this verification-condition, we do not fully understand the statement

The inferentialist notion of meaning-constitutive inference should be broad enough to include links with experience

## Wilfrid Sellars in "Some Reflections on Language Games" (1954)

The rules of the language game are behaviouristic stimulus-response (S-R) associations of three kinds:

- 1) language entry transitions, where S is nonlinguistic and R linguistic;
- 2) intralinguistic moves, where both S and R are linguistic (positions in the language game);
- 3) language departure transitions, where S is linguistic, but R is not.

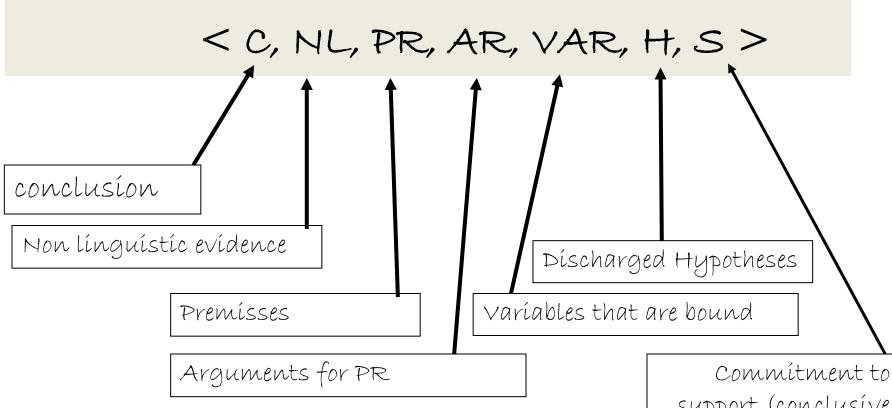
In C. Cozzo, Meaning and Argument,
Almqvist & Wiksell, Stockholm (1994)
the notion of argumentation step
(Chapter 3: "Immediate argumental role")

- «An argumentation step **P** is the particular act of justifying a token sentence, called conclusion (possibly depending on certain hypotheses).
- [...] The conclusion **C** is in general justified on the basis of some *evidence*, which can be either *linguistic* or the *non-linguistic* result of certain actions, or both. »
- C. Cozzo, Meaning and Argument, p. 61

An argumentation step **P** has seven components, of which the first and the last are never empty:

< C, NL, PR, AR, VAR, H, S>

Seven components, of which the first and the last are never empty:



support (conclusive or defeasible)

# IV.2 Second problem: the relevant notion of inference

### Problems concerning inferentialism

2) What is an inference?

An inference: a transition from premisses to conclusions

# There are many notions of "inference", which differ with respect to (at least) seven factors.

See C. Cozzo, "Inference and compulsion", in E. Moriconi (ed.), *Second Pisa Colloquium in Logic, Language and Epistemology*. ETS. pp. 162-180 (2014)

### Seven factors

- i. Nature of premisses and conclusions
- ii. Subject: the entity that makes the inference
- iii. Relation inference-subject
- iv. Relation premisses-conclusion
- v. Conclusiveness-defeasibility
- vi. Public or private character
- vii. Context

### Two possibilities concerning the relation inference-subject

- 1) The inference is an event, or a process that happens to the subject beyond her/his voluntary control.
- 2) The inference is a conscious and deliberate act of the subject.

### Three possibilities concerning the relation premisses-conclusion

- 1) An **abstract relation** between the propositions expressed by the premisses and the proposition expressed by the conclusion.
- 2) A **causal relation**: the subject's acceptance of the premisses causes the subject's acceptance of the conclusion.
- 3) A **normative relation**: *if* the subject accepts the premisses, the subject *ought* to accept the conclusion.

# IV.3 Third problem: holism

#### Problems concerning inferentialism

3) Does inferentialism lead to meaning-holism?

#### Meaning holism

Meaning-holism is the thesis that in order to understand a statement one must understand the whole language.

### Many philosophers think that inferentialism leads to meaning holism.

Many philosophers think that meaning-holism has absurd consequences

«[According to] a holistic view of language [...] there is no adequate way of understanding the statement short of knowing the entire language.» M. Dummett, *Truth and Other Enigmas*, p. 218

"[holism] leaves it a mystery how we manage to communicate with one another as successfully as we do"

M. Dummett, *The Logical Basis of Metaphysics*, p. 237

# On what grounds can one claim that inferentialism leads to meaning holism?

FACT: given any pair of statements S1, S2 we cannot rule out that some part of the epistemic background may generate a new inferential link between S1 and S2.

#### The <u>epistemic background</u> at time t:

all accepted assertions, arguments, forms of inference, relevant questions at time *t*.

#### IF

### the epistemic background changes, THEN

new inferences involving S may arise

#### An example:

we found something in an empty room

Tom was in room 7

This inference requires a justification

Tom was in room 7

This inference requires a justification

Tom was in room 7

The justification depends on the epistemic background

#### EPISTEMIC BACKGROUND: molecular biology -

We found this bloodstain in room 7

Tom was in room 7

#### An example

When molecular biology was added to the epistemic background, many new inferential links were established.

FACT: given any pair of statements S1, S2 we cannot rule out that some part of the epistemic background may generate a new inferential link between S1 and S2.

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FACT: for any statement S, the set of all legitimate inferences involving S depends on the whole epistemic background

#### Holism of the set of inferential links

FACT: for any statement S, the set of all legitimate inferences involving S depends on the whole epistemic background

#### What about inferential role?

## Does inferential role depend on the whole epistemic background?

### Does holism of inferential links lead to holism of inferential role?

#### Holism of inferential links



holism of inferential role

inferentialism

Meaning-Holism

#### **Question:**

Does holism of inferential links lead to holism of inferential role?

- R. Brandom, *Articulating Reasons*, Harvard University Press, Cambridge 2000.
- C. Cozzo, "Does Epistemological Holism Lead to Meaning Holism?", in **Topoi** 21, 2002, pp.25-45

Is the "inferential role of S" the set of all (legitimate) inferences involving S?

Is the "inferential role of S" the set of all (legitimate) inferences involving S?

YES: Holism of inferential links implies holism of inferential role.

Is the "inferential role of S" the set of all (legitimate) inferences involving S?

YES: HOLISTIC
INFERENTIALISM
(meaning-holism)

Is the "inferential role of S" the set of all (legitimate) inferences involving S?

NO:

ONLY SOME INFERENCES

ARE MEANING CONSTITUTIVE

Is the "inferential role of S" the set of all (legitimate) inferences involving S?

NO:

NON-HOLISTIC INFERENTIALISM IS POSSIBLE

#### Differences

HOLISTIC INFERENTIALISM

**NON-HOLISTIC** 

**INFERENTIALISM** 

Hartry Field,

Gil Harman,

**Robert Brandom** 

Michael Dummett,

Dag Prawitz

Cesare Cozzo

# IV.4 Fourth problem: analytic validity

4) Does inferentialism lead to the view that some inferences are analytically valid (i.e. valid in virtue of meaning)?

A statement *S* is analytically true if, and only if,

S is true only in virtue of meaning.

An **inference** *I* is analytically valid if, and only if, *I* is valid (preserves truth) only in virtue of meaning.

4) Does inferentialism lead to the view that some inferences are analytically valid (i.e. valid in virtue of meaning)?

4) Does inferentialism lead to the view that some inferences are analytically valid (i.e. valid in virtue of meaning)?

Answer 1) Yes, if an inference *I* belongs to the meaning of a statement S, a speaker who understands S thereby a priori knows the validity of *I*.

4) Does inferentialism lead to the view that some inferences are analytically valid (i.e. valid in virtue of meaning)?

**Answer 2)** No, an inference that belongs to the meaning of a statement, can nevertheless be wrong.

Can meanining-constitutive inferences be wrong?

Can inferences belonging to inferential roles be wrong?

Can inferences belonging to inferential roles be wrong?

Two kinds of answer

Can inferences belonging to inferential roles be wrong?

Two kinds of answer

NO, because they are part of meaning

We adopt a justificatory inferentialism

Can inferences belonging to inferential roles be wrong?

Two kinds of answer

Yes. Our meanings are fallible We adopt a fallibilist inferentialism

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#### **JUSTIFICATORY**

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**FALLIBILIST** 

**JUSTIFICATORY** 

Meaning-constitutive inferences are analytically valid

**FALLIBILIST** 

#### **JUSTIFICATORY**

#### **FALLIBILIST**

Meaning-constitutive inferences are not analytically valid. They can be rationally criticized and rejected according to how well they contribute to organize common experience in a given epistemic situation

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## Tolerant inferentialism:

meaning-constitutive (rules of) inferences can be chosen arbitrarily

## A priori restrictive inferentialism:

Before choosing meaning-constitutive inferences, we need a guarantee that they are rightly chosen.

## A priori restrictive inferentialism:

Before choosing meaning constitutive inferences we must recognize that they have a restrictive property X that guarantees that they are right.

A priori restrictive inferentialism: only (rules of) inferences with the special restrictive property X can constitute meanings.

## Tolerant inferentialism:

meaning-constitutive (rules of) inferences can be chosen arbitrarily

A priori restrictive inferentialism: only (rules of) inferences with the special restrictive property X can constitute meanings.

#### Are there tolerant inferentialists?

It seems that Wittgenstein and Carnap were tolerant inferentialists

### Inferentialism in Wittgenstein Bemerkungen über die Grundlagen der Mathematik

«We can conceive the rules of inference [...] as giving the signs their meaning [...] In this sense rules of inference cannot be right or wrong» (Wittgenstein 1956: VII, § 30)

#### Inferentialism in Carnap Logische Syntax der Sprache

«let any postulates and any rules of inference be chosen arbitrarily; then this choice, whatever it may be, will determine what meaning is to be assigned to the fundamental logical symbols.» (Carnap 1934: v)

#### Carnap: Principle of Tolerance

«It is not our business to set up prohibitions, but to arrive at conventions. [...] In logic there are no morals. Everyone is at liberty to build up his own logic, i.e. his own form of language, as he wishes »

(Carnap 1934: § 17)

## IV.5 Fifth problem: logic

5) What are the consequences of inferentialism for the choice of a logic?

#### **INFERENTIALISM ABOUT LOGIC**

PURE INFERENTIALISM ABOUT LOGIC

LOGICAL EXPRESSIVISM

#### Pure inferentialism about logic

The meaning of a logical constant (connective, quantifier, etc.) is given by some rules of inference concerning it.

logical vocabulary has a special expressive role

NON-LOGICAL WORDS

NON-LOGICAL WORDS

We give meaning to them by attributing an inferential role

NON-LOGICAL WORDS

LOGICAL WORDS

We give meaning to them by attributing an inferential role

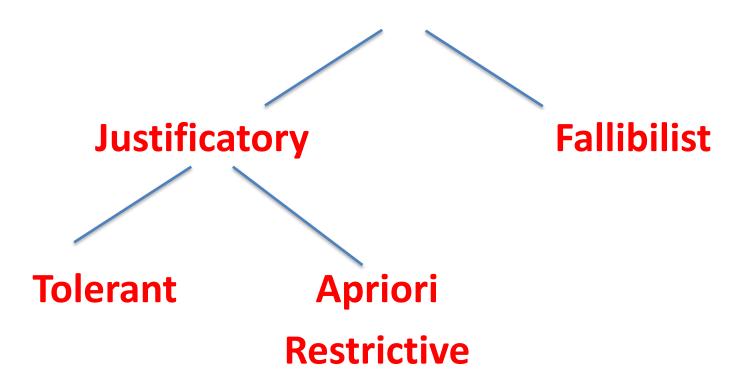
NON-LOGICAL WORDS

LOGICAL WORDS

We give meaning to them by attributing an inferential role

have an expressive role:
they express
the inferential role
of non-logical words.

#### **PURE INFERENTIALISM ABOUT LOGIC**



#### Tolerant inferentialism about logic

Everyone is at liberty to create meanings for logical constants, by fixing corresponding inference rules and thus to build up a logic, i.e. a form of language, where certain inferences are deductively valid in virtue of the meanings of the logical constants.

### Many objections can be raised against tolerant inferentialism

One of which is Arthur Prior's objection

Prior, A. N. (1960), "The Runabout Inference-Ticket", in Analysis, 21, pp. 38-9.

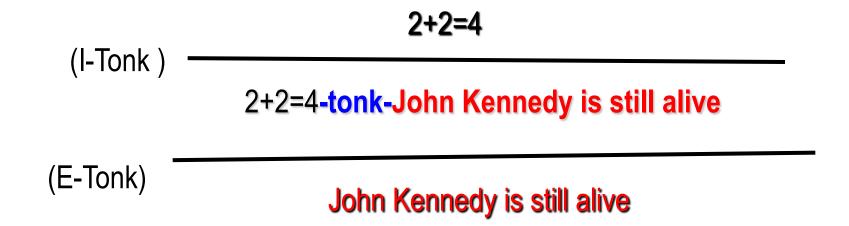
#### Prior's objection

If the meaning of a connective is given by inference rules, we can have paradoxical connectives, like tonk.

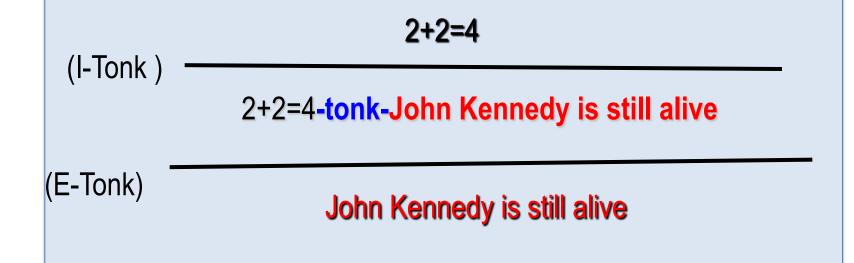
#### tonk -rules

I-Tonk = 
$$\frac{P}{P-tonk-Q}$$
 E-Tonk =

#### tonk -reasoning

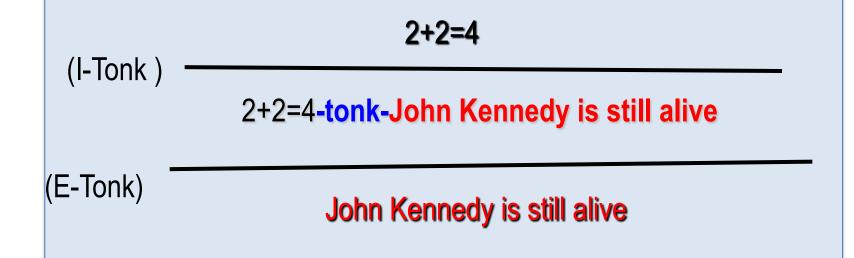


#### tonk -reasoning





#### tonk -reasoning





This cannot be deductively valid!

The implausibility of tolerant inferentialism can be a reason to adopt restrictive inferentialism

#### Restrictive inferentialism about logic

We specify a restrictive property X such that only rules of inference that have property X can really give meaning to logical constants and can generate inferences that are deductively valid in virtue of meaning.

#### Are there restrictive inferentialists?

#### Are there restrictive inferentialists?

Yes, many.

#### Are there restrictive inferentialists?

Michael Dummett
and Dag Prawitz
propose a theory of meaning
that can be seen as
restrictive inferentialism

# For Dummett and Prawitz all meaning-constitutive rules of inference must have a restrictive property X

What is the restrictive property X?

#### What is the restrictive property X?

X is the property of being an introduction rule which can be specified in terms of sentences (premisses, discharged assumptions) of lower complexity than the conclusion (or atomic, if the conclusion is atomic).

#### Main problem

There are many inferences that are treated by speakers as meaning-constitutive and do not have property X.

# If we think that restrictive inferentialism is too restrictive, we can adopt an inferentialism that is not justificatory and not restrictive fallibilist inferentialism

#### FALLIBILIST INFERENTIALISM

#### See

- C. Cozzo, "On the Copernican Turn in Semantics", in THEORIA, 2008, 74, 295–317.
- C. Cozzo, "Cogency and context", **Topoi** 38, 2019, pp. 505–516.

#### FALLIBILIST INFERENTIALISM

#### Circumscription of meaning-constitutive:

meaning constitutive uses are all uses that are treated as meaning constitutive

**Inferentialism:** the sense of a statement S is given by the meaning-constitutive (immediate) argumentation steps in which S is involved.

Fallibilism: meaning-constitutive rules can be rationally criticized and rejected according to how well the resulting language organizes experience in a given epistemic situation

What is treated as meaning-constitutive?

A linguistic act is treated as meaningconstitutive by a speaker Y if, and only if, it is a primitive use for Y

#### A use U of E is a primitive use of E for Y,

#### if, and only if,

Y expects of every competent speaker P that in using *E*, P accepts U and neither acknowledges the possibility, nor the need of giving any justification of U.

#### Fallibilism in what sense?

### Fallibilist inferentialism is fallibilism about language

#### Critical evaluation of a language

We evaluate how well a language organizes common experience in a given epistemic situation through a cost-benefit analysis where different criteria of rational acceptability are considered: intelligibility, simplicity, epistemic fruitfulness, consistency, beauty, etc.

### Fallibilist inferentialism is fallibilism about LOGIC

#### Fallibilism about logic

The choice of a logic (which is part of the choice of a language) is a fallible choice depending on a cost-benefit-analysis.

(See C. Cozzo, "Epistemic Truth and Excluded Middle", in THEORIA, a Swedish Journal of Philosophy, LXIV, 2-3, 1998, pp. 243-82)

# IV.6 Sixth problem: reference

#### Some problems concerning inferentialism

6) Does the notion of reference play any role in inferentialism?

#### REFERENCE

a relation between
linguistic expressions
and (non-linguistic) objects

#### Inferentialism

meaning should not be explained in terms of a relation of *reference* 

meaning should be explained in terms of use in reasoning and argumentation

## Does inferentialism abandon the notion of reference altogether?

# IV.7 Seventh problem: truth

#### Some problems concerning inferentialism

7) Does the notion of truth play any role in inferentialism?

#### Inferentialism

### meaning should not be explained in terms of *truth-conditions*

meaning should be explained in terms of use in reasoning and argumentation

### Does inferentialism abandon the notion of truth altogether?

The problem of reference and the problem of truth are connected:

the reference of an expression E is the contribution of E to the truth (or falsity) of the statements in which E occurs The problem of reference and the problem of truth can be handled together, starting from truth

# Three conceptions of truth

- 1) Deflationist
- 2) Realist
- 3) Epistemic

The word «true» does not serve to attribute a special property, common to all statements that are true

The meaning of the word "true" is given by principles like the equivalence thesis

E) it is true that A if, and only if, A.

The word «true» has an expressive function: it enables us to say things that otherwise we could not say.

**Example:** Every sentence Kant wrote is true.

There is nothing more to say about truth.

# Realist conception of truth

True statements have an objective property in common (i.e. truth), which is independent of our epistemic practices.

# Realist conception of truth

Truth is explained in terms of some ontologic notion taken as primitive.

#### Realist conception of truth

For example: truth is 'correspondence' with reality, with states of affairs, etc.

# Epistemic conception of truth

The notion of truth is explained in terms of our epistemic practices.

# Question

Which of the three conceptions of reference and truth will the inferentialist adopt?

#### **Answer**

Different philosophers have developed different versions of inferentialism.

Some combined with a deflationist conception of truth (and reference).

Some combined with a realist conception of truth (and reference).

Some with an epistemic conception of truth (and reference)