

*A Compositionalist's Guide to Metaphysics*  
Agustín Rayo, MIT and the University of Oslo  
California Metaphysics Conference, January 2015

---

*The Social Picture of Language*

1. The Thesis:

- Language is a tool for making speech acts.

2. What is a Speech Act?

To make an assertion is to make a two-part proposal:

Stalnaker, "Assertion".

- (a) One proposes that a *distinction* be drawn amongst the possibilities that are being treated as "live options" for the purposes of the conversation.
- (b) One proposes that the possibilities falling on one side of this distinction be *ruled out*.

*Compositionism and Metaphysicalism*

How is our language related to the world it represents?

- Two answers: **compositionism** and **metaphysicalism**.
- The two views agree on an important constraint:

I've picked answers that represent the extremes of a continuum: many others are possible.

*The Social Constraint*

Sentences have meanings, which can be used, in context, to decide which of the possibilities that are being treated as live options for the purposes of the conversation to rule out on the basis of an assertion.

1. Compositionism

The compositionalist thinks that there are few constraints on an assignment of meanings beyond the Social Constraint:

- The only constraint on an assignment of *sentential* meanings is that it be generable compositionally from some assignment of sub-sentential meanings.
- The only constraint on an assignment of *sub-sentential* meanings is that it allow one to generate one's preferred assignment of sentential meanings compositionally.

## 2. Metaphysicalism

The metaphysicalist adds the following to the compositionalist's constraints:

**Facts** If a sentence has been assigned the truth-condition\* that  $p$  as part of its meaning, and if the world is such as to satisfy the condition that  $p$ , then the sentence “describes” a particular feature of the world: it describes the fact that  $p$ .

**Objective Structure** Facts are “objectively structured”: they are articulated into components, not by the manner in which *we* happen to represent them, but by the intrinsic character of the relevant feature of the world.<sup>†</sup>

**Uniqueness** Each fact has a unique objective structure.<sup>‡</sup>

**Metaphysical Reference** In order for an atomic sentence to succeed in describing a fact, two conditions must be satisfied: (i) the compositional structure of the sentence must be *isomorphic* to the objective structure of the fact, and (ii) the linguistic item at each terminal node of the compositional structure of the sentence must *refer* to the item at the corresponding node of objective structure of the fact.<sup>§</sup>

### Why Be a Compositionalist?

#### 1. An Example: Directions

- Let the truth-conditions of  $\lceil \delta(a) = \delta(b) \rceil$  consist of the requirement that line  $a$  be *parallel* to line  $b$ .
- Let the truth-conditions of  $\lceil \exists x(\alpha = \delta(a)) \rceil$  consist of the requirement that there exist some line  $x$  such that  $x$  is *parallel* to line  $a$ .

#### 2. Is the Assignment Legitimate?

- *Compositionalist*: Yes, since it can be generated compositionally.
- *Metaphysicalist*: Not necessarily. It could be rendered inadequate by a failure of sub-sentential expressions' to properly hook up with the world.

#### 3. An Argument from the Social Picture

- (a) On the Social Picture, language is simply a tool for making speech acts.

\* What is a truth-condition? A sentence's truth-condition is the condition that the world would have to satisfy in order for the sentence to count as true.

† A metaphysicalist might think that the fact that Socrates is wise is objectively structured into two components: Socrates and the property of wisdom.

‡ If the fact that Socrates died is objectively structured into Socrates and the property of having died, then it cannot also be objectively structured into, say, an event of dying, Socrates, and the relation of being an agent.

§ Here I am simplifying a bit, to ease the exposition. What [Metaphysical Reference] requires is that the compositional structure of the sentence be isomorphic to a *subtree* of the relevant objective structure, and that the term at each terminal node of the compositional structure of the sentence refer to the item at the corresponding node of the subtree.

See Appendix for full details.

- (b) So all it takes for an assignment of truth-conditions to be acceptable is for the resulting sentences to constitute a useful tool for making speech acts.
- (c) So, *contra* the metaphysicist, there is no reason to doubt that our assignment of truth-conditions could deliver a useful tool for discriminating amongst possibilities in the course of a conversation.

### *Three Metaphysical Lessons*

Compositionism suggests three metaphysically significant theses:

**Lesson 1** Quine's criterion of ontological commitment is not a good guide to the demandingness of truth-conditions.

**Lesson 2** Identity statements involving terms of different sorts need not make sense.

**Lesson 3** There is no obvious reason to think that one's quantifiers can be given an interpretation independently of the way the rest of the language is set up.

#### *Lesson 1: Ontological Commitment*

Quine's criterion of ontological commitment is not a good guide to the demandingness of truth-conditions:

- On Quine's criterion, " $\exists \alpha (\alpha = \delta(a))$ " (read: "something is the direction of  $a$ ") is committed to both lines and directions.
- On Quine's criterion, " $\exists x (x \parallel a)$ " (read: "something is parallel to  $a$ ") is committed to lines but not directions.
- **But:** on the above assignment of truth-conditions, the truth-conditions of these two sentences are equally demanding.

Similarly, the fact that the truths of pure mathematics are committed to numbers is not an indication that they have demanding truth-conditions.

#### *Lesson 2: Mixed Identities*

Identity statements involving terms of different sorts need not make sense.

- On the social picture, there is no need to assume that every grammatical string makes sense.

*Why?* All it takes for an assignment of truth-conditions to be acceptable is for it to deliver a useful tool for making speech acts, and a partial assignment can deliver such a tool.

None of this excludes the possibility of *extending* an assignment of truth-conditions so as to associate determinate truth-conditions with mixed identities.

- *Example 1: Directions*

Our assignment of truth-conditions to sentences of the direction-language is not defined for a "mixed" identity such as " $a = \delta(a)$ ". This doesn't stop it from being a useful tool for making speech acts.

A similar point could be made with respect to an arithmetical language.

- *Example 2: The Concept <Horse>*

- In order for the predicate "is a horse" to be useful in making speech acts, there is no need to assume that 'is a horse' refers to the property of horsehood has well-defined truth-conditions.
- One can define a notion of reference suitable for semantic ascent in second-order terms. So, again, there is no need to assume that 'is a horse' refers to the property of horsehood has well-defined truth-conditions.

A notion of reference suitable for semantic theorizing is defined in the metalanguage, so it does not immediately bear on the object-language sentence we are discussing here.

### Lesson 3: Quantifiers

There is no obvious reason to think that one's quantifiers can be given an interpretation independently of the way the rest of the language is set up.

1. According to **metaphysicalism**, there is a language-transcendent notion of objecthood:

To be an object *just is* to be one of the "entities" carved out by the world's objective structure.

And, perhaps, to have the right kind of "ontological character".

- So: the metaphysicalist is in a position to think of a quantifier as ranging over "all objects", independently of whether any truth-conditions have been assigned to sentences of the relevant language.

2. On a natural way of developing **compositionism**, there is no such thing as a language-transcendent notion of objecthood:

To describe the world as containing objects *just is* to describe the world by using a sentence that contains singular terms (or variables taking singular-term positions).

Does this entail that objects are language-dependent? Absolutely not. All it entails is that certain an object-involving descriptions of the world would have been unavailable to us if we had no singular terms.

- Moreover: the compositionist thinks that the only constraint on an assignment of meanings to singular terms is that it allow one to generate one's preferred assignment of sentential meanings compositionally.

- So: to describe the world as containing objects *just is* to describe the world by using a language with the right kind of compositional structure and the right kind of assignment of sentential meanings.
- But: one can vary the objects one describes a given feature of the world as containing by switching to a sentence with the same truth-conditions but a different compositional structure.

Recall the case of " $\exists\alpha(\alpha = \delta(a))$ " and " $\exists x(x||a)$ ".

Informally put: one can use sentences with the same truth-conditions but different compositional structures to "carve up" a given fact in different ways.

- So: Insofar as there is no definite bound to the sorts of compositional structures one might use to set up a system of representation, there is no definite bound to the sorts of objects that one might describe the world as containing.
- So: There is no obvious reason to think that one's quantifiers can be given an interpretation independently of the way the rest of the language is set up.

## Appendix

The purpose of this appendix is to characterize the assignment of truth-conditions described above in greater detail.

We begin by giving a precise characterization of our language,  $L$ . In addition to the standard logical vocabulary,  $L$  contains a two place predicate ' $\dots || \dots$ ' (read: ' $\dots$  is parallel to  $\dots$ '), and variables of two different sorts: Roman variables ' $x_1, x_2, \dots$ ' and Greek variables ' $\alpha_1, \alpha_2, \dots$ '. The predicate ' $\dots || \dots$ ' is only allowed to take Roman variables as arguments. The identity predicate can take variables of either sort as arguments, but mixed identity statements are disallowed, so that ' $x_i = \alpha_j$ ' and ' $\alpha_i = x_j$ ' are both counted as ill-formed. Finally,  $L$  contains the Roman constants ' $a_1, a_2, \dots$ ', which are allowed to take the place of Roman variables, and the Greek function-letter ' $\delta(\dots)$ ' (read: 'the direction of  $\dots$ '), which is allowed to take the place of Greek variables when its argument-place has been filled with a Roman variable or constant. Accordingly, ' $\delta(x_i) = \alpha_j$ ' and ' $\delta(x_i) = \delta(x_j)$ ' are well-formed formulas, but ' $\delta(\alpha_i) = \alpha_j$ ' and ' $\delta(x_i) = x_j$ ' are not.

Next, we consider an assignment of truth-conditions to sentences in  $L$ . We proceed by specifying, in our metalanguage, what would

be required of the world in order for the truth-conditions of a given sentence of  $L$  to be satisfied. In doing so, we will allow ourselves to make reference to the lines  $l_1, l_2, \dots$  in a particular domain, but not to the *directions* of these lines.

If  $\phi$  is a sentence of  $L$ , we shall let the truth-conditions of  $\phi$  be specified by the metalinguistic sentence  $[\phi]^N$ . The function  $[\dots]^N$  is characterized recursively, by way of the following procedure:

- $[\ulcorner \psi \wedge \theta \urcorner]^N = \text{'it is both the case that'} \frown [\psi]^N \frown \text{'and that'} \frown [\theta]^N$ .
- $[\ulcorner \neg \psi \urcorner]^N = \text{'it is not the case that'} \frown [\psi]^N$ .
- $[\ulcorner \exists x_i(\psi) \urcorner]^N = \ulcorner \text{there is a line } y_i \text{ such that} \urcorner \frown [\psi]^N$
- $[\ulcorner \exists \alpha_i(\psi) \urcorner]^N = \ulcorner \text{there is a line } z_i \text{ such that} \urcorner \frown [\psi]^N$
- $[\ulcorner a_i = a_j \urcorner]^N = \ulcorner \text{line } l_i \text{ is identical to line } l_j \urcorner$
- $[\ulcorner x_i = a_j \urcorner]^N = \ulcorner y_i \text{ is identical to line } l_j \urcorner$
- $[\ulcorner x_i = x_j \urcorner]^N = \ulcorner y_i \text{ is identical to } y_j \urcorner$
- $[\ulcorner \alpha_i = \alpha_j \urcorner]^N = \ulcorner z_i \text{ is parallel to } z_j \urcorner$
- $[\ulcorner \delta(a_i) = \alpha_j \urcorner]^N = \ulcorner \text{line } l_i \text{ is parallel to } z_j \urcorner$
- $[\ulcorner \delta(x_i) = \alpha_j \urcorner]^N = \ulcorner x_i \text{ is parallel to } z_j \urcorner$
- $[\ulcorner a_i || a_j \urcorner]^N = \ulcorner \text{line } l_i \text{ is parallel to line } l_j \urcorner$
- $[\ulcorner x_i || a_j \urcorner]^N = \ulcorner y_i \text{ is parallel to line } l_j \urcorner$
- $[\ulcorner x_i || x_j \urcorner]^N = \ulcorner y_i \text{ is parallel to } y_j \urcorner$

(I have omitted a few clauses for the sake of readability.)

It is worth noting that although  $[\phi]^N$  is an open formula of the metalanguage when  $\phi$  is an open formula of  $L$ ,  $[\phi]^N$  is always a sentence of the metalanguage when  $\phi$  is a sentence of  $L$ .