# Analyticity and reference determiners

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1. The language myth1
2. The definition of analyticity
3. Defining containment
4. Some remaining questions
4.1. Reference determiners: content or character?
4.2. How specific should reference determiners be?
4.2.1. Make reference determiners more specific
4.2.2. Revising the definition of analyticity
4.3. Cassius Clay & Mohammed Ali
4.4. Paderewski
5. Epistemological consequences of truth in virtue of reference determiners

## 1. The language myth

Russell introduces her definition of analyticity via a criticism of the *language myth*, a false view of language characterized by its failure to distinguish between three "meaning properties" of an expression which correspond to the following platitudes:

- (1) To understand an expression is to know what it means.
- (2) The meaning of an expression in a sentence contributes to what the sentence as a whole says.
- (3) Which object(s) an expression applies to is determined by what it means.

Corresponding to the these platitudes are three different types of meaning:

- character: the thing speakers must know (perhaps tacitly) to count as understanding an expression
- **content**: what the word contributes to what a sentence containing it says (the proposition it expresses)
- reference Determiner: a condition which an object must meet in order to be the referent of, or fall in the extension of, an expression

Arguments that these come apart: Kripke on names shows that reference determiner  $\neq$  content and character; Kaplan on indexicals shows that content  $\neq$  character.

Once we grave distinguished the set of the s

those assumptions. Repeating the exercise with his own favorite theories of reference determination is left as an exercise for the reader.

Why it can't be content: names and other devices of direct reference. The second problem is that, even if we have settled on, say, a Millian conception of names, I do not really know how the referent of, say,

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are merely being used to provide some examples of sentences that would be true in virtue of meaning, if the assumptions were true.

Names (Hesperus, Phosphorus, Mohammed Ali, Cassius Clay):

I will assume that names are directly referential. One gives a name a meaning, and hence introduces it to a language, by giving it a referent. This can be done using a description (e.g. Let 'Hesperus' refer to the evening star.) The referent of the name is then whatever single object falls under this description in the context of introduction, so long as there is one, and if there is not then the expression is meaningless. The name will refer to that object regardless of the agent, time or place specified in the context of utterance (in this names are unlike indexicals) and regardless of the context of evaluation (names are rigid designators). I will assume that the name Hesperus was introduced when someone pointed to a bright speck near the horizon one evening and said: Let's call that bright speck 'Hesperus'. Hesperus thus refers to whatever (if anything) the baptiser demonstrated whilst saying this in the context of introduction. The story for Phosphorus is similar, except that the baptiser was pointing at a bright speck in the sky one morning. Phosphorus thus refers to whatever (if anything) it was the baptiser was pointing to in the context of introduction for *Phosphorus*. I will also consider two more names that will be important in the discussion of the epistemic status of analytic sentences. We'll stipulate, in order to have a clear example, that the name Cassius Clay was introduced when Cassius Clay's parents baptised him (Let's call him (pointing) 'Cassius Clay'.) The referent of Mohammed Ali was introduced in a slightly different way, when Elijah Muhammad, the leader of the Nation of Islam, said *Let's use 'Mohammed* 

which is what it contributes to the content of any sentence in which it is used.

#### 2.1.1 Analyticity given the Language Myth

There is a theoretical overlay that is a natural addition to this picture: a definition is an identity statement involving two synonymous expressions, for example, *A bachelor is an unmarried man* or *gold is a vellow metal that is resistant to rust*<sup>1</sup> Suppose someone understands both

I will assume that names are directly methen that the neferivers a fitting ern meaning, and hence introduces it to a fille way, By erect of the series of the ern This can be done using a descriptioth (E. g. arect of the series of the series of the series of the name is a the series of the name is a serie of the name is a serie of the series of the se ppose someone understands both hat they both mean, say, *M*. This nust be determined in exactly the this, then regardless of whether w that the meanings cannot help nity sentence will express a truth. Iderstanding the terms, we might he sentence will also be necessary. I where the identity statement is the expressions have determined are not synonymous, contrary to isly special, and so to mark their sentences.

or the extended theory involving e quite right, though the picture There are many linguistic exprestheory demands and we can use nultiply ambiguous. There is no -e-theoretic 'meaning' principles.

these to show that meaning is real

There are not just two different things here, but four. Since I contend that *meaning* is multiply ambiguous it will be helpful to introduce some to context of introduction." But not all expressions

This shows how names are "sensitive to newtext of out the dufficent" But en of the works signal are like this. Examples: logical constants, color words. • character: the thing speakers must know (perhaps tacitly) to count as

understanding an expression

2. THE DEFINITION OF ANALYTICITY accontent: what the word contributes: to what a sentence containing it says (the proposition it expresses)

Here is her first attempt at a definition of anti-attention of a statistic to the termine of a statistic to the termine of termine

**Definition 6** (**Truth in Virtue of Metalling Constants of the second sectors**) sentence S is true in virtue of meaning has in large for all successful s ),  $\forall x(Fx \leftrightarrow Gx)$ , may express theoretical imals. The expression has been explicitly at (Ripke 1980), though other automose at loanly who applies that singly) (Locke 1993[1690]).

y stated and accepted, rather, it works that is naturally and

easily presupposed. But one result of presupposing such a picture is that certain consequences of it—such as the extension involving analyticity,

One worry you might have here: if we taken an consequence of a construction only according only appear bollows, with the result which are not sensitive to context of introduction and of the consistive to construct of introduction of the consistive to consistive to context of introduction of the consistive to consistive to context of introduction of the consistive to consistive to context of introduction of the consistive to consistive to context of introduction of the consistive to consistive to consist the consistive to consist of the consistence of the

Russell is aware of this worry and, later philosophers among whom I count an earlier self the arguments a different, improved definition of analyticities the analytic/synthetic distinction did not bring enlightenment, only apparent paradox.

Though her account segeneral, let's focus The work affed is the thanguage myth has been the work of many twentieth-century philosophers, including Quine, Putnam, Burge, Kripke, Kaplan, Donnellan, Evans, McDowell, Soames and Salmon. (Putnam 1962a, 1975; Burge 1991[1979], 1986; Kripke 1980; Kaplan 1989b; Evans 1973, 1982; McDowell 1977; Salmon 1982; Salmon & Soames 1988; Soames 1987, (2001). Often that work has consisted of offering alternative pictures of linguistic meaning and for the purposes of debunking the language myth, it is not so important that those pictures are accurate, as that they are seen to be possible ways in which parts of our language *could* work; much of the support for the language myth comes from the thought that its way is really the *only*  Russell's view is that the sentence will be analytic iff the reference determiner for  $\neg n \neg$  is *contained in* the reference determiner for  $\neg F \neg$ . Similarly, for a simple identity sentence  $\neg n$  is  $m \neg$  the sentence will be analytic iff the reference determiner for  $\neg n \neg$  is contained in the reference determiner for  $\neg m \neg$ . This raises the question: what is it for a reference determiner to be contained in another?

Russell gives the following necessary condition on containment:

Whatever else is true of the containment relation on reference determiners, it ought to satisfy the following principle:

Containment Principle

If the reference determiner for an expression E contains the reference determiner for an expression F, then for all x, if x satisfies E with respect to an ordered pair  $(c_i, c_u)$ , where  $c_i$  is a context of introduction and  $c_u$  a context of utterance, then x satisfies F with respect to  $(c_i, c_u)$ .

More loosely: where A and B are reference determiners, if A contains B, then B is satisfied by any object that satisfies A. For example, since the reference determiner for *bachelor* contains that of *is a man*, anything which satisfies *bachelor* also satisfies *is a man*. Similarly, since

Russell also says that identity of reference determiner is a special case of containment — which indicates that identity of reference determiner is a *sufficient* condition for containment.

But this does not, so far, give us necessary and sufficient conditions for containment. Let's think about how we might do this.

#### 3. Defining containment

To do this it will be useful to introduce the following way of thinking about reference determiners:

Reference determiners for expressions are functions from pairs of a context of introduction and a context of utterance to a property; an object will then be in the reference of — i.e., satisfy — the expression iff it instantiates the relevant property which is the value of the reference determiner for the relevant introduction/utterance pair.

Given this, there are a couple of different ways in which we might define containment. The simplest, and weakest, is just to let Russell's necessary condition on containment — expressed in the containment principle — also be a sufficient condition for containment. This might be expressed as follows:

EXTENSIONAL CONTAINMENT

If R1 is the reference determiner for e1, and R2 is the reference determiner for e2, then:

The reference determiner for e1 contains the reference determiner for e2 iff for every introduction/context pair  $\langle i,u \rangle$  and every object o, if o instantiates R1( $\langle i,u \rangle$ ) (at the world of  $\langle i,u \rangle$ ) then o instantiates R2( $\langle i,u \rangle$ ) (at the world of  $\langle i,u \rangle$ ).

There are a few reasons why, I think, Russell does not want to define containment as extensional containment. One is that it will make certain putative 'substantive necessities'— like "God exists" (or "God does not exist", depending on your views) — analytic. Another is that, given that the reference determiners for numerals and other mathematical expressions are constant functions, this trivializes the claim that truths of arithmetic are analytic. Same with color incompatibilities.

So how could we formulate a stronger condition? One promising idea begins with the thought that properties, like propositions, are structured. Then, given that we are thinking of reference determiners as functions from introduction/utterance pairs to properties, we might define containment as follows:

CONSTITUENT CONTAINMENT

If R1 is the reference determiner for e1, and R2 is the reference determiner for e2, then:

The reference determiner for e1 contains the reference determiner for e2 iff for every introduction/context pair  $\langle i, u \rangle$ ,

 $\forall F \forall G ((F=R1(\langle i,u \rangle) \& G=R2(\langle i,u \rangle) \rightarrow (i) G \text{ is a constituent of of } F \& (ii) \text{ for every object } o, \text{ if o instantiates } F, \text{ then o instantiates } G (at the world of <math>\langle i,u \rangle)$ 

Each property will count as a constituent of itself, in order to secure the result that identity is sufficient for containment.

Why include clause (ii)? The reason why we need clause (ii) is that not all ways of being a consituent will be sufficient for containment. For example, F is a constituent of the complex disjunctive property (F or G) — but we don't want, for example, the reference

determiner for 'odd or even' to contain the reference determiner for 'odd', on pain of making 'Every number which is odd or even is odd' come out analytic.

Constituent containment is a stronger condition than extensional containment. We've already seen Russell's reasons for thinking that extensional containment is a bit too weak — it really does seem odd for "God exists" or "God does not exist" to come out analytic.

#### 4. Some remaining questions

#### 4.1. Reference determiners: content or character?

Here is an intuitive problem with the idea of a reference determiner, as developed so far. Suppose that one evening someone introduced the name 'Hesperus' by saying (or thinking to himself)

Hesperus is *that* (pointing at the brightest object visible in the evening sky).

Given that this is the way that 'Hesperus' was introduced, how should we think about its reference determiner?

It is very natural to think that a name's reference determiner should have something to do with the sentence uttered (or the thought thought) to introduce the name, and in particular (in the present case) that it should be closely related to the words

is that (pointing at the brightest object visible in the evening sky).

A natural first thought is that the reference determiner should be recoverable from the *content* of this predicate in the context of utterance which, assuming a direct reference view of demonstratives, will be the property corresponding to the open sentence

 $\mathbf{x} = \mathbf{o}.$ 

relative to an assignment of Venus to the free variable 'o'. Ignoring the possibility of sensitivity to the context of utterance for now, the idea would then be that we should look at the context of introduction, and ask: which thing has this property? That will then be the reference of 'Hesperus' relative to that context of introduction.

But it is pretty clear that this is not what we want. After all, we want names to be sensitive to the context of introduction, and if this is the reference determiner for "Hesperus", it won't be — it will single out Venus relative to every context of introduction in which Venus exists, and nothing otherwise. One way to see the problems which would result from this would be to imagine that "Phosphorus" was similarly introduced using a demonstrative, except when looking at the morning sky — this would give "Phosphorus" the same reference determiner as "Hesperus", and hence, given that identity is sufficient for containment, would make "Hesperus is Phosphorus" analytic. Similar problems would result if we imagined the names as introduced by slightly more complex demonstrative phrases, like "that planet" or "that bright planet."

Russell never explicitly considers this problem; and never explicitly gives us a recipe for obtaining the reference determiner for a name from the way in which it was introduced. Here's a suggestion, which fits most of the examples of reference determiners that she gives in the book. Even if the reference determiner should be recoverable from something about the words used to introduce the name, and in particular the predicate

is that (pointing at the brightest object visible in the evening sky)

maybe what matters is not the content of the predicate, but rather it's *character* — in Kaplan's sense, of a function from contexts to contents. Here we can (following Kaplan's "Fregean theory of demonstrations") think of the character as the description associated with the demonstration which accompanies the utterance of the demonstrative, which would make the relevant content not the property corresponding to

 $\mathbf{x} = \mathbf{o}.$ 

relative to an assignment of Venus to the free variable 'o', but rather the relation corresponding to the open sentence

**x** is the object in the evening sky the speaker of **ci** is demonstrating at the time of **ci** 

#### 4.2. How specific should reference determiners be?

This still leaves us with the question of which descriptive content should get into the reference determiner. And here, it seems to me, we face an intuitive dilemma.

Let's imagine that "Hesperus" was introduced as above, so that its reference determiner is that function from contexts of introduction to properties which, given a context of introduction I as argument, has as its value the property which is expressed by the open sentence

**x** is the object in the evening sky the speaker of **ci** is demonstrating at the time of **ci** 

relative to an assignment of I as value to 'ci'.

Now suppose that, the next night, a rival astronomer goes out and sees a bright object in the evening sky, which he dubs "Twinkle." It is hard to see how "Twinkle"'s reference determiner could differ from that just given to "Hesperus"; after all, both were introduced as names for a demonstrated bright object in the evening sky. But this is problematic. Suppose that the next day our two astronomers get together and consider the sentence

Hesperus is Twinkle.

This sentence seems synthetic — or, at least, if we are sure that 'Hesperus is Phosphorus' is synthetic, we should be sure that this sentence is synthetic. But if they are associated with the same reference determiner, then by either definition of containment given above, this sentence comes out analytic.

This is a problem. Let's consider a few solutions.

4.2.1. Make reference determiners more specific

It would, of course, be possible to avoid the unwanted result by changing our view of the reference determiners associated with the two names for Venus. Suppose, for example, that the introduction of "Hesperus" occurred on April 21, 1845. Then instead of identifying the reference determiner for 'Hesperus' with that function from contexts of introduction to properties which, given a context of introduction I as argument, has as its value the property which is expressed by the open sentence

**x** is the object in the evening sky the speaker of **ci** is demonstrating at the time of **ci** 

relative to an assignment of I as value to 'ci', we could identify it with the function which has as its value

x is the object in the evening sky the speaker of ci is demonstrating on April 21, 1845.

(This would be to partially reverse the move from the content of the demonstrative to the sense of the associated description suggested in the preceding section.) The reference determiner for "Twinkle", by contrast, would be that function which, given a context I as argument, has value

has as its value

x is the object in the evening sky the speaker of ci is demonstrating on April 22, 1845.

This makes the reference determiners different, and — even using the weaker extensional definition of containment — makes "Hesperus is Twinkle" come out synthetic.

But this leads to other problems, which seem to me just as bad. Consider the predicate

was demonstrated on April 22, 1845

It seems that the reference determiner for this predicate will be contained — on either definition sketched above — by the reference determiner just suggested for "Hesperus." But this would make

Hesperus was demonstrated on April 22, 1845.

analytic — which seems like a mistake.

(This is an analogue of Kripke's epistemic argument against reference fixing descriptivism — except that here the claim is not the theory in question overgenerates a priori sentences, but that it overgenerates analytic sentences.)

#### 4.2.2. Revising the definition of analyticity

Fortunately, there is another option which is very much in the spirit of Russell's account. We can simply give up the idea that identity of reference determiner is sufficient for containment.

To see how this might work, return to our original suggestion of a reference determiner for "Hesperus" and "Twinkle", according to which each is the function from contexts of introduction to properties which, given a context of introduction I as argument, has as its value the property which is expressed by the open sentence

**x** is the object in the evening sky the speaker of **ci** is demonstrating at the time of **ci** 

relative to an assignment of I as value to 'ci'. The reason why, despite sharing this reference determiner, "Hesperus is Twinkle" seems to be analytic is, I think, that there is no guarantee that the two names were introduced in the same context. Hence, despite sharing a reference determiner, there is no guarantee that they have the same reference — given that their reference determiners determine different references for different contexts of introduction.

This suggests a revision of our definition of containment. Consider first extensional containment. Rather than the definition:

#### EXTENSIONAL CONTAINMENT

If R1 is the reference determiner for e1, and R2 is the reference determiner for e2, then:

The reference determiner for e1 contains the reference determiner for e2 iff for every introduction/context pair  $\langle i,u \rangle$  and every object o, if o instantiates R1( $\langle i,u \rangle$ ) (at the world of  $\langle i,u \rangle$ ) then o instantiates R2( $\langle i,u \rangle$ ) (at the world of  $\langle i,u \rangle$ ).

corj, r ... jaoe going to up. (Suppose someone in 1242 pointed to Hesperus and said Let's call that 'Hesperus' etc...) So what follows are the stipulations about kinds of reference determiners for kinds of expressions, and some specific reference determiners for specific expressions. Perhaps the next section contains nothing but elaborate fiction, but that would be okay, since the the aim of the examples that follow is clarificatory, and the assumptions are merely being used to provide some examples of sentences that would be true in virtue of meaning, if the assumptions were true.

which is what it contributes t

2.1.1 Analyticit

I suggest that we should go for something like this phorus, Mohammed Ali, Cassius Clay)is used.

I will assume that names are directly referential. One gives a name a

EXTENSIONAL CONTAMENTING,\*and hence introduces it to a language, by giving it a referent. This can be done using a description (e.g. Let 'Hesperus' refer to the

If R1 is the reference dation mine) for tefarch Rof in the name is much management of the reference of the second falls under this description in the context of introduction, so tong: as definition is an indent for  $e^2$ , then: there is one, and if there is not then the expression is meaningless.pressions, for example, A l The reference determinant fould in for twinship to be determined by the second that is resistant to every pair of introducersificatinete context of interarca (in this names are justice indexpersions. Then, by (1) the o instantiates  $R1(\langle i, u \rangle)$  (at the referents of the name *Hesperus* was introduced when someonway and so, if a speake  $R2(\langle i^*, u \rangle)$  (at the relevant world).

Analogous changes could be filled to the the filled to the filled to the serve of the period statistic of the serve of the same result even when they appearsigned different intraductions / the same result even when they appears that the means the me as the 'utterance' member of contexa infisited discion (NePhayen achold will calse ternside' paid ifferent referents - so the exp fixed if we want 'I am here' managest that will be important in the start is the start of the epistemich mathematics. Such sentences a of analytic sentences. We'll stipulate, in ord<del>e( [)</del> have a clear ex<del>dimple</del>ctiveness, let's call them

Extensional containment and extensional containment will coincide for terms which are the reference on the reference of terms which are the reference on the reference of terms which are the reference on the reference of terms which are the reference on the reference of terms which are the reference on the reference on the reference of terms which are the reference on the refere will come apart. And, importantian for all the reader of the waith of will reivaid the result have methed to not work the these to show that *meaning* i that 'Hesperus is Twinkle' comes out synthetic.

This gives up Russell's claim that identity of reference determiner is sufficient for containment; but it seems to give us the results we should, intuitively, want.

#### 4.3. Cassius Clay & Mohammed Ali

However, the move from containment to containment\*, nice as it is for helping with the 46 content: what the word re case of "Twinkle", threatens another of the claims about analyticity Russell wants to preserve: the claim that "Cassius Clay is Mohammed Ali" is analytic, if the name

"Mohammed Ali" was introduced in a certain way. Here's what she says:

We'll stipulate, in order to have a clear example, that the name *Cassus Clay* was introduced when Cassius Clay's parents baptised him (Let's call him (pointing) 'Cassius Clay'.) The referent of Mohammed Ali was introduced in a slightly different way, when Elijah Muhammad, the leader of the Nation of Islam, said Let's use 'Mohammed Ali' to name Cassius Clay. Mohammed Ali thus refers to whatever object, if any, Cassius Clay refers to.

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• reference Determiner: a

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The language myth is rarely is an intuitive picture of ho easily presupposed. But one re certain consequences of it-s definitions, a priority and nec that the denial of those cons I think many thinkers find the analyticity. Whatever ingenie analytic/synthetic distinction because they did not see how t philosophers-among whom against the analytic/synthetic only apparent paradox.

The work of dismantling of many twentieth-century | Burge, Kripke, Kaplan, Dor Salman ( Dutnam 1062 a 1

There are two different interpretations of the reference fixer for "Mohammed Ali" that we might take away from this example. If we focus on Elijah Muhammad's words, then the natural choice for a reference fixer is the function from a context of introduction ci to the property corresponding to the open sentence

x is Cassius Clay in ci.

But this can't be quite right, since Russell is elsewhere happy to treat names as devices of direct reference, which would make this property equivalent to

x is o in ci.

relative to an assignment of Ali to 'o'. But then the reference fixer for "Mohammed Ali" would not even extensionally contain — let alone constituent contain or extensionally contain<sup>\*</sup> — the reference fixer for "Cassius Clay." (This would also be an odd view of the reference determiner, since it would make the name insensitive to context of introduction.)

Instead, I think, Russell has in mind the reference determiner which, for context of introduction ci, has as value

x is named by "Cassius Clay" in ci.

However, if we are thinking in terms of containment<sup>\*</sup> rather than containment, it is not clear that even this will help "Cassius Clay is Mohammed Ali" come out analytic. For there could, obviously, have been (and presumably are) multiple people named "Cassius Clay." Let's imagine a world w in which Cassius Clay is named "Cassius Clay" — and someone else — let's call him "Bob" — is also named "Cassius Clay." Now imagine that the above metalinguistic condition is indeed the reference determiner for "Mohammed Ali", and that, as should be consistent with this, this name is introduced in w to stand for Bob.

Now suppose that I am acquainted in w with Bob, whom I know only under the name "Muhammed Ali", and that in w I know Cassius Clay — the Cassius Clay who was actually a great boxer. I might come to suspect that they are the same person, and utter the sentence "Cassius Clay is Mohammed Ali." This would be false out of my mouth — even though I was using the names with the reference determiners they actually have. But if this can happen, then the sentence is not guaranteed to be true by the reference determiners of its expressions (plus the way they are combined) and hence should not, by Russell's lights, count as analytic.

I'm not sure quite what to say about this case. On the one hand, if Russell had to give up on her claim about the analyticity of "Cassius Clay is Mohammed Ali", this would not be so bad for her theory — it's not like it is an uncontroversial case of analyticity in the first place. But the worry is that there are other cases which are relevantly like this one which really do seem to be analytic. Suppose that "gray" was introduced like this:

Let "gray" stand for whatever color "grey" stands for.

Presumably we should want "Gray is grey" to be analytic; but this is just like the Cassius Clay example. (We can imagine a world where "grey" is ambiguous between, e.g., a name for a color and a name for a shape.)

It looks like we need to add something to the account. One idea would be to in effect complicate the reference determine for "Mohammed Ali" to require that it refer to the referent of "Cassius Clay". where the reference determiner for the latter is held fixed — but this won't work, since we can imagine both uses of "Cassius Clay" as associated with the same reference determiner.

We might say instead that, in the example of w and Bob, when I falsely say "Cassius Clay is Mohammed Ali," there is a sense in which I am not uttering the *same sentence* as the actual sentence, "Cassius Clay is Mohammed Ali," which Russell thinks is analytic. What this must mean is that I am not uttering a sentence of the same type; and then what we need is a specification of what the relevant type is. The problem is that none of the meaning properties — content, character, or reference determiner — will give us the result we want. So it is not obvious how to specify the relevant type.

We could get around this by requiring that all the terms in the sentence be evaluated with respect to the same context of introduction/utterance — but this would be to give up containment\* and return to containment.

#### 4.4. Paderewski

A further problem results from an example from Kripke's "A Puzzle About Belief" of Paderewski, the stateman/pianist. In these contexts, it seems that "Paderewski is Paderewski" should be synthetic, for just the same reasons as "Hesperus is Phosphorus" is.

A way to accomodate this case: let reference determiners include causal chains leading up to the relevant tokens.

# 5. EPISTEMOLOGICAL CONSEQUENCES OF TRUTH IN VIRTUE OF REFERENCE DETERMINERS