THE PARADOX OF TRANSLATION

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Abstract: *Alonzo Church claimed that (1) 'Red' means red is properly translated by (2) 'Red' heisst rot, and not by (3) 'Rot' heisst rot, because (1) and (2) predicate the same property (meaning red) of the same object, the English word 'red', whereas (3) predicates that property of the German word 'rot'. Since (2) is plainly a contingent empirical truth knowable only a posteriori, (1) must be the same, and so too for (3). More generally, apparent semantic principles like (M) 'K' means K, (C) 'K' means L ≡ 'L' means K, or (T) 'p' is true ≡ p can be only empirical generalizations about the English language. That conclusion seems absurd while Church's reasoning seems compelling. Church goes wrong by misconceiving the grammar of displays - what the Fregean tradition miscalls quotations (because quotation marks mark displays). Displays are perceptual objects linguistically appropriated by incorporation in a syntactic structure as adjuncts of a displasionable term, a term whose extension is identifiable by presenting (e.g. by ostension) an object incorporable in an utterance. Another misconception concerns the role of symbol recurrence in the truth-securing syntax of formal truths and the significance of nonuniform substitution of synonyms in formal truths.*

1. Church's Paradox

A half century ago the distinguished mathematical logician, Alonzo Church, promoted the thesis that translations can be tests of certain alleged necessary truths[1]. What is called the Church translation test might better be called the Paradox of Translation, like the related Paradox of Analysis. On the one hand, it seems axiomatic that to be informationally equivalent a translation must at least retain the truth conditions and thus the truth or falsity of the original, so if an informationally equivalent translation states a contingent, empirical truth or falsehood, then the original cannot be a necessary truth. Yet, paradoxically, this principle seems to conflict with other equally undeniable principles, like:

(M) 'K' means K
(1) 'Red' means red
(C) 'K' means L ≡ 'L' means K[2]
(1c) 'Azure' means cobalt ≡ 'cobalt' means azure
(T) 'p' is true ≡ p
(2) 'Blood is red' is true ≡ blood is red

These seem to be necessarily true semantic axioms and instances of them. Yet, Church claims, their proper translations are contingent, empirical truths like:

(3) 'Red' heisst rot.

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[1] Cf. 1951, 'Carnap's Analysis of Statements of Assertion and Belief,' *Analysis* 10: 97-99; 1951, 'The Need for Abstract Entities in Semantic Analysis' in 1964, Jerry A. Fodor and Jerrold J. Katz, eds., *The Structure of Language*, Englewood Cliffs, NJ: Prentice-Hall; 1955, 'Putnam on Synonymity and Belief', *Analysis* 15: 117-20; 1956, *Introduction to Mathematical Logic*, Princeton: Princeton UP: 61-62. For a contentious review of the literature see Nathan Salmon, 2002, "The Very Possibility of Language" in M. Zeleny and C. A. Anderson, eds., *Logic, Meaning and Computation*, Synthese Library.
[2] In the standard notation of formal logic, '≡' means if and only if

(4)   'Blood is red' ist wahr ≡ Blut ist rot.

The truth of (3) and (4) are happenstances of linguistic history. The apparent necessity lost translating (1)/(2) as (3)/(4) reappears in the modal equivalents of (1)/(2) in German:

(5)   'Rot' heisst rot
(6)   'Blut ist rot' ist wahr ≡ Blut ist rot.

The trouble is: that translation loses informational equivalence. The German sentences (5)/(6) refer to a German word or sentence, not the English ones that (1), (2), (3) and (4) refer to, so they state different, independent set of facts.

Church's translation test has impressed many philosophers, logicians and semantic theorists partly because it seems to provide a clear and decisive refutation of nominalist and physicalist analyses of speech as nothing more than the utterance of sentences, and analyses of thought as nothing more than a disposition to utter sentences.[3] Those who object to such reductionist analyses for independent reasons see Church's test as confirming common sense and being confirmed by it. Friends of such analyses think otherwise.

So too for the test's implications for basic semantic principles. It may seem a *reductio ad absurdum* of Church's test that it entails that sentences such as (1)/(M) are merely contingent empirical facts of language just like:

(7)   'Rot' means red
(8)   'L' means K.

While (7) and many other form (8) sentences are true, many more form (8) sentences are false, whereas on their normal, standard, default reading, every form (M) (*'K' means K*) sentence states a truth. (M) seems much like a principle of logic such as:

(9)   K is K

for its instances are all true whatever expression is the 'K'.[4] Nonetheless, Church took the test's startling entailments as evidence of its utility in exposing common sense assumptions. Church can concede that translating (1) as (5) may be common and contextually appropriate, but still insist that this is always due only to speech pragmatics. In its formal semantics, the translation fails for changing the subject: (1) and (5) state independent facts by predicating the same semantic property of distinct objects[5].

Common sense is affronted by Church's conclusion as it is by Zeno's conclusion that motion is impossible and all appearances of motion are illusory. Good sense says something must be wrong since

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[3] Church's primary targets were the analyses proposed by Rudolph Carnap that asserted equivalences something like:
(i) Columbus said that the earth is round ≡
    Columbus uttered the sentence 'The Earth is round' or some translation of it
(ii) Columbus believed that the earth is round ≡
    Columbus was disposed to utter and assent to the sentence 'The Earth is round'
    or some translation of it.
[4] Every grammatical sentence of form 9 is true if it is grammatical and meaningful, which requires 'K' to be some kind of term. Sentences of form 7 are true whatever meaningful expression is the 'K'.
[5] That 'rot' and 'red' have shared histories is irrelevant here. English might have had 'ret' instead.

Church's essays (and this one) are not translatable by his principles: his own translations of his examples of alleged semantic axioms would lack the appearance of semantic axioms. To restate his premises and conclusions, his principles must be flouted. That loss is no mere pragmatic matter. Such difficulties, however, don't explain how Church goes wrong. Zeno's arguments are refuted, not by wiggling your finger, but by dissolving his puzzle with a refined conception of a continuum – a neat feat that took near 2500 years to pull off. Like Zeno, Church challenges us to rethink our representations of meanings and truths, and thereby refine our conception of meaning and truth.

We should wonder: How could translation seem to have real utility as a test of necessary truths? How could the contingency of a truth be evident and uncontroversial when expressed in one language yet be obscured and seem to be a necessity when stated in another language? Presumably, any feature apparent only under translation, not in the original, should be a discrepancy in and of the translation[6].

The puzzle is missed if the situation is mistaken for one of the many cases where a sentence has no accurate translation in some other language. Crucially, Church's test applies only when and because the original and translation sentences state the same fact: the same properties are predicated of the same objects. Also crucial: Church's argument doesn't rely on any peculiarity of one or a few languages. His argument works with any two languages, and is just as valid and almost as vivid with intra-language translations (synonymies) as with inter-language translations. Church's translation paradox is as language-neutral as Zeno's. It concerns a sentential element available in every natural language by which the language can freely talk about itself. The paradox is generated by what Church and others influenced by Gottlob Frege call *quotations*.

2. Quotations vs. displays

The Fregean tradition adapts the term 'quotation' to mean "a device used to refer to typographical or phonetic shapes by exhibiting samples, that is, inscriptions or utterances that have those shapes."[7] This terminology is unfortunate. In its common colloquial sense, we *quote* only something someone has said. Quoting is an action performed by a speaker (or utterance or sentence) only by repeating verbal content of a prior utterance. The original may be spoken or written, actual or fictional, repeated verbatim or not, in the same or language or another, by the speaker or another, but the original speech act must be describable in indirect discourse and in other languages.

Post-Fregean theorists call any sentence-embedded display of material, like (1) or:

>   (10)   Fred's Fiat went 'kehfloo'

a quotation. Better to call them *displays*. Being a quotation is an historical property, not a semantic or syntactic one. Displays are semantically and syntactically distinctive sentential elements without essential historical relations.

Many displays are, like (1) and (10), not quotations. Many quotations are not displayed. Direct discourse is the display of an actual quotation or a possible one, something sayable. There the words are referred to and something is predicated of them, if only that the words were (not) or might (not) be said. Quoting by displaying is common. So too is quoting without displaying. Quoting is repeating speech, not necessarily referring to or displaying speech. We (especially the educated) often echo

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[6] This is implicit in the inspiration for Church's Test, C. H. Langford's idea of using translation as "a simple test which helps us to determine whether a word is being used or talked about" (1937, *Journal of Symbolic Logic* 2 : 53.) Langford's "test" looks backwards since determining whether the word is being used or talked about may be a precondition of proper translation.

[7] Donald Davidson, 1984, "Quotation", in *Inquiries into Truth and Interpretation*, Clarendon Press, Oxford.

quote: we use the words of others (who could be ourselves earlier) to say what the words say, and thus to say much the same as the original speaker said with the words. Consider:

(11)   Cosmological arguments involve "an unnecessary shuffle".

I there quote Wittgenstein, and would without the marks. The marks say only *this was said before*. The marks don't create the historical fact; the punctuational message is true, delivered or not. The marks report only that there is some such historical fact; they don't refer to Wittgenstein or identify any speaker. This punctuational message is outside the semantic content of (11), which says nothing about words. The sense and truth of (11) are independent of the punctuation and the truth of its message. Contrast:

(12)   Cosmological arguments involve what Wittgenstein might call "an unnecessary shuffle".

Here the marks acquire an additional message: *this is displayed*. They signal that the material is referred to by the inserted term, "what Wittgenstein might call". (12) refers to the displayed phrase-type and attributes an historical feature to it. That attribution of prior utterance enters (12)'s truth conditions.

Unlike displays, quotations are distinguished, not by their linguistic properties, but by their historical relations. For being a quotation, what centrally matters is whether the choice of words is explained partly by the original utterance. Coincidental duplications are not quotations. To ask, 'What is truth?', is not, *ipso facto*, to plagiarize Pilate. Quoting requires some explanatory linkage from quotee to quoter. That linkage needn't involve the quoters knowledge of it. People commonly use sayings unaware of their having an author. We ask them, "Did you know that that's a quotation from Mencken?" or "Did you know that you were quoting Mencken?". To properly reply, "He may have said it first, but I wasn't quoting him", you may need some reason to suppose that Mencken's utterance had nothing to do with your using those very words.

Intentionality of repetition is neither essential nor enough. Reciting is not quoting. We may quote lyrics, but not while singing the song, not even if the lyrics or lines are quotes. I quote Mencken, not Veblen, when I quote Mencken quoting Veblen. We may quote lines from a play, pledge or prayer, but not while play acting, pledging or praying. A supplicant fervently reciting the Lord's Prayer does not quote it, as she would by echoing its lines amidst prayers or essays she authors.

The common concept of quotation has considerable complexity. Its contours don't answer to any formal linguistic theory; they reflect the complexity and variety of language users' interests in what was said by whom – in all the various senses of the ambiguous term, "what was said". Assigning responsibility for words used has various kinds of importance. Consider the great range of reasons for saying: *Don't quote me on this*. This is a distinct, derivative sense of "quote": *to attribute words to someone*. Both senses normally apply to direct discourse quoting, whereas only the primary sense normally applies to echo quoting.

The accuracy and adequacy speech replication depends partly on semantic, syntactic and phonetic/graphemic features of the original, but ultimately the ruling considerations are pragmatic, driven by the contextually variable interests of the quoter and audience in the replication of speech. Often we require quotations to be verbatim, but writing is quotable in speech and speech in writing. Sometimes written quotations need to replicate fonts and spoken quotations must imitate the intonation contours, loudness and the like. Sometimes accurate replication includes extra-sentential perceptual features, like stuttering and gestures. On the other hand, inter-linguistic translation of a quotation often counts

as a quotation. There only the semantic content is replicated, not physical features. There are limits to this. We do not quote in saying:

> (13)   He went on for hours, "blah, blah, blah".

Since quotation translation is so context dependent on the interests of speaker and audience, a canon for quotation translation can have few distinctive general principles beyond those of translation generally.

3. Displays vs. autonomes

Formal theorists have little interest in quotations, but lots of interest in the so-called *quotation marks* used to mark displays – punctuation best called *display marks*. Theoretical interest in displays and displays marks comes from Frege and the new formal disciplines of metalinguistics and metamathematics. Key to the new formal languages is an effective mechanical procedure that forms singular terms which designate any expression we can create and algorithmically identifies its designatum. The obvious choice is to make enquotation a lexical engine yielding a singular term referring to the (kind of) expression enquoted and identifying that referent by exemplifying it. These formalist enquotations differ semantically and syntactically from natural language displays, so to avoid equivocation we'll call these formalist enquotations *autonomes*, and form them by flanking stars, thusly:

> (1*)   *Red* means red.

We'll say an autonome of an expression (type) is formed by *enstarring* (an instance of) it.

Formal theorists have thought they were providing analyses of displays, but their original and primary focus has been on a device fit for formal theories. Like pre-Fregeans, they generally had no independent interest in natural language display grammar. Initially formal theorists thought that enquotation (i.e., enstarring) generates an endless set of names (or singular descriptions), one for each lexical item in a language, and each of the endless combinations thereof. That may be a serviceable conceptition of autonomes. It can seem to fit displays, until the idea is thought through.

4. Display marks

The deepest objection motivates the later analysis of displays as demonstratives, which observes that an assertion with a sentence-embedded display is functionally fundamentally equivalent to an utterance of the same sentence with its display exported and the speaker drawing the audience's attention to a speech-external replica[8]. The semantics of speech acts so appropriating speech-external objects is explained without regarding those objects as names or terms or words, except when they happen to be so independent of their appropriation. Nothing about their importation into a sentence requires their acquiring the character of words. Demonstrative theories rightly aspire to explain this semantic equivalence. Competing analyses have lacked that laudable aspiration. They predicate of displays semantic and syntactic properties inapplicable to speech-external replicas, like termhood, and leave the discrepancy unexplained.

Demonstrative theorists conclude that enquoting adds only one term: the marks are a demonstrative indexically pointing through the exemplifying expression to the expression-type exemplified, like a finger pointing at a speech-external object. This too may be a plausible account of autonomes but not of displays.

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[8] Cf. Donald Davidson, 1984. See also, Ernie Lepore and Herman Cappelen, 1997, "Varieties of Quotation", *Mind*, 106: 429-50. Niels Christensen anticipated Davidson (1967, "The Alleged Distinction between Use and Mention", *Philosophical Review*, 76, pp. 358-67), but has not been nearly as influential.

This demonstrative thesis entails the absurdity that, despite all evidence to the contrary, no one ever properly used or understood displays until they used and understood display marks – a punctuation unused, unknown, uninvented until rather recently. Even today display marking is almost exclusively reserved for written displays and there the usage is erratic outside formal writing. (Note that if displays were names, display markings could be semantically empty disambiguators. Formal theorists don't so regard them because they require their formal languages to be unambiguous, with each symbol having only one sense assigned it, so an unenstarred symbol can there have only one interpretation. Enstarring creates a new symbol referring to the enstarred symbol-type, so autonome stars are morphemic).

The demonstrative thesis is that (14) and (15) are equivalent:

(14)   He said to me, "Go home!"
(15)   Go home! That's what he said to me.

This flouts standard display punctuation conventions, for they apply much the same to all speech-embedded objects, sentenced-embedded or not. Style books all say the proper equivalent of (14) is not (15), but instead

(16)   "Go home!" That's what he said to me.

Demonstrative theories can have no account of the display and punctuation of (16) – they prohibit them! – and thus no real account of their semantically equivalent replicas in (14).

The source of confusion is readily spotted. Davidson analyzes (17) as (18):

(17)   'Alice swooned' is a sentence
(18)   Alice swooned. The expression of which this is a token is a sentence.

That should entail analyzing (19) as the nonsensical (20):

(19)   The expression, 'Alice swooned', is a sentence
(20)   Alice swooned. The expression, the expression of which this is a token, is a
          sentence.

The fault in this and every display analysis in the Fregean tradition is a failure to notice that displays and their external replicas always operate as adjuncts to some explicit or implicit term like "the expression", what I will call a *displasionable term* . That failure comes from over-focus on formal languages.

5.   Displasionable terms
The displays formalists focus on formalizing are all, like (1) and (17), sentence-embedded expressions adjunctive to a singular term that refers to the expression-type the display exemplifies. Elision of the displasionable term in such sentences is common in natural languages since the implicit term is often obvious from the context. Formal systems impose a fixed reading of the kind of thing to which an autonome refers, so explicit displasionable terms are superfluous there – except that well-formed formula there are supposed to be fully explicit. Understandably, formal theorists haven't notice that in natural languages displays very commonly do appear appositional to a displasionable term, and that the term always can appear without altering the utterance's sense.

And, since formal theories don't support linguistic appropriation of speech-external objects, theorists also haven't noticed that when linguistically appropriating a speech-external object, the utterance is

not a grammatically complete sentence unless the displasionable term is explicit. If, instead of sentence (10) you say

(10x)   Frank's Fiat went

while producing or pointing at a contemporaneous sound, "kehfloo", you do make a compete *statement*, but the words uttered don't constitute a grammatically complete *sentence* (unless the irrelevant intransitive sense of "went" is used.) To make your statement with a complete sentence you must say something like

(10xe)   Frank's Fiat made the sound

while directing your audience's attention to a sound, "kehfloo".

Displays are adjuncts of what I'll call *ostensionable terms*, and more specifically of *display ostensionable terms.* A term is ostensionable if its intended extension is identifiable by ostending or directing attention at a particular concrete object: e.g., words like: *pentagon, pentagonal, Pluto, loud, sweet, she, here*. Terms like *pedigree, purpose, pulchritude, invisible* are not so ostensionable. Some terms, like *solar system* become ostensionable when we create ostendable concrete images or objects representing the thing. A term is *display-ostensionable* – for short, *displasionable* – if its intended extension is identifiable by ostending or directing attention at an object physically incorporable in an utterance. Terms referring to linguistic expressions are paradigmatically displasionable. Any linguistic expression-token is *ipso facto* an utterance incorporable object, and its replicas, type, and meaning are possible *referents* identifiable by displaying the token in writing or speech. Much that we point at to identify an extension is not readily replicable in a form incorporable into an utterance; words like *she, here, soft, sweet, tickle, blood, marathon* are ostensionable but not displasionable. Words liked *red* and *pentagon* are displasionable in writing, not speech, whereas *c-sharp* is a displasionable term in speech but not writing. Ostensionablity and displasionablity are matters of degree, depending on factors like observability, existing conventions, and the speaker's ingenuity. 'Venus' (the planet-name) is more ostensionable than 'Pluto' since its referent is more visible in the night sky. They are equally ostensionable with astronomical diagrams. Neither term is readily displasionable, but becomes so by highlighting the second or ninth planet of a sentence-embedded solar system schematic.

Display marks say simply: *this material is displayed*. Like italics on foreign expressions, their function is solely epistemic, not semantic. They only disambiguate, and could not do that unless the unmarked expression were already readable as a display. We could never have learned to use display marks – or have imagined there was something to mark – before we already used and understood unmarked displays. Arguably, we could never acquire a first language if we could not use unmarked displays, for arguably we could not acquire a first language if sentences like "This is red" were not naturally readable both objectually (*This has the property of being red*) and metalinguistically (*This property is called "red".*) We must learn how to call things by their (proper or common) names before we can understand explicit metalinguistic expressions like: *This is called 'red'*.

The marks only enforce a reading the expression already has. They don't preclude also reading the marked expressions *per usual*, as with the expression "an unnecessary shuffle" in (12). They are generally unnecessary outside metalevel talk because disambiguation is effected by commas or sentence content or speech context, which renders a display reading available or not, likely or not. Appositional to an explicit displasionable term, displays can rarely fail to be read as such.

6. Reference & representation
All displays have the same abstract generic function, which has two species. Most displays are representational, but the most basic semantic role is as referent, the entire extension of the displasionable term, as in:

(21)   This pentagon, ♣, is black.

Call this a *referent display.* The reference is ambiguous. The intended referent may be the unique physical object displayed, so any reproduction of the sentence expresses another statement about another referent object. (Exceptions to this are possible, for example, by composing sentences on a magnet board and moving the display-magnet from one sentence-frame to a replica.) On another reading, the referent is fixed self-referentially as the type of object adjunctive to the displasionable term, so reproductions of the sentence all make the statement about the same referent object. This introduces an endless ambiguity because the referent is determined by the criteria for accurate replication of the display, and those criteria are open-ended, limited only by the two general terms *pentagon/black*. What we count as a (satisfactory) replica of the display is constrained only by the purposes and perceptual propensities of the speaker and audience.

We have no end of occasions to refer to concrete objects existing independent of reference to them. We rarely have reason to utter a sentence referring to a concrete constituent of our utterance, so referent displays are rarely used. They are important for linguistic theory because any utterance embedding a representational display can be recast as an equivalent utterance embedding a referent display.

The relation of the displasionable term to its referent display is the basic semantic dyad of a singular term to its referent object. A representative display is in a triadic relation with its displasionable term and that term's intended extension, something other than the display aiding its identification. Representative displays may operate with both referential singular terms and with what Fregean quantificational logic calls *predicates*, terms that may be predicable or true of many objects but don't designate any object. Consider:

(22)   An engine sound, 'kehfloo', is an indicator of bad valves.
(23)   No (letter) 'i' went undotted, but some (letter) 't''s weren't crossed

The displays identify the extensions of the displasionable terms (*engine sound, letter*) by exemplifying those extensions, not by being the extension or referring to it. The displasionable term predicates a property and does not refer to it, or to its display or anything else.

With a singular, referential displasionable term, the display may aid identification of the intended extension by one of three relationships. In

(10C)   The Fiat's noise 'kehfloo' startled the cat.

the referent is a concrete particular sound (a vocalization of) the display *replicates*. In (1) (*'Red' means red*) the referent may be the word-type the display *instances* (exemplifies.) Thirdly, in

(24)   The proposition, 'Blood is red' is true

the display *expresses* the intended proposition and does not replicate or instantiate that trans-notational object: the relation is conventional, not natural, perceptual.

Representative displays are reformulable as referent displays. Demonstrative theories derive their plausibility from the equivalence of:

(1e)   The word 'flea' means puce
1R)   (The word exemplified by this, 'flea', means puce.

More generally, the sentence schema, *The T, '…', is F,* is ambiguous. The display could be replicative (*The T replicated by this, '…', is F*), instantiative (*The T exemplified by this, '…', is F*), expressive (*The T expressed by this, '…', is F*) or it could be the referent (*The T that is this, '…', is F*). The basic form of predicative displays, *x is a T, '…',* is equivalent to the referent display: *x is a T exemplified by this, '…'.* Triadic representative display sentences are equivalent to dyadic referent displays sentences, which are equivalent to display-exported sentences uttered with direct ostension of the term's referent. Evidently, displays needn't (be thought to) *refer to* anything. The equivalences tell us that the representational role of displays is not referential.

7. Display syntax
Despite their fundamental functional similarities, a display differs grammatically from a linguistically appropriated external counterpart. An external counterpart is linguistically appropriated by referring to it by some extrasentential referential supplement like finger pointing. A speaker activity like finger pointing may be unnecessary since other sentence-external contextual factors may entitle the speaker to expect his audience to direct its attention to the intended object to identify the ostensionable term's extension. Still, the object's utterance-independence entails that its linguistic appropriation requires some speaker's reference to it. That requirement disappears with sentence-embedding.

Displays are linguistically appropriated by their positioning within a syntactic structure. The location of appropriated extrasentential objects is limited only by pragmatics, not syntax. Generally displays must adjoin their displasionable term or else the sentence is gibberish. In English, a display standardly succeeds its term, but representational displays often can precede their displasionable term:

(10^)   Fred's Fiat made the 'kehfloo' sound
(23^)   No 'i' letter went undotted, but some 't' letters went uncrossed
(24^)   The 'Blood is red' proposition is true.

Referent displays are referents of their displasionable term. Representational displays are, like other sentential elements, not referred to by anything in the utterance. (Display marks *refer* to the display marked in the sense that italics refer to the foreign expression italicized; such punctuational "references" are stage setting, not semantic constituents; they don't contribute to a sentence's semantic content).

A display is a *bona fide* syntactic constituent. It can be a pivotal element in formal truths, sentences that express truths due solely to their logico-syntactic structure and independent of the meanings of their terms. Consider:

(25)   Fred's Fiat made the sound 'kehfloo' ≡
        Fred's Fiat made the sound 'kehfloo'
(26)   Fred's Fiat made the sound 'kehfloo' ≡
        Frank's Fiat made the sound (+ gesturing at an external 'kehfloo' sound).

Unlike (25), (26) is not a logical truth; its antecedent differs formally from its consequent. Its form is: $p \equiv q$, not $p \equiv p$.

8. Formal truths

The peculiarities of display grammar are inessential to (25)'s logical form; suffice that the display re-occurs. Their distinctive grammar is essential to expressions of semantic axioms like:

(7)   'K' means K
(27)   'K' means L ≡ 'L' means K
(28)   'p' is true ≡ p ≡ that p is true ≡ that p is a fact

This is key to dissolving Church's translation paradox.

The translation paradox is a special case of the synonymity antinomy I have discussed elsewhere[9]. Church's underlying translation principle is an instance of the basic Synonym Substitution Principle:

SSP: *synonym substitution preserves sentence sense.*

SSP implies that:

'K' means L ≡ *'K' means K means 'K' means L.*

SSP fails for formal, logical truths. A sentence true due to its logical syntax like:

(29)   A television is a television

is not synonymous with a *synomic interception* like:

(30)   A television is a TV.

An *interception* is the process or product of *nonuniform* substitution of a term pivotal to a truth-securing syntax. Intercepting eliminates the expression-recurrence essential to the sentence's truth-securing syntax, and thereby eliminates its logical necessity. Intercepting an objectual logical truth, (29), with a synonym replaces the logico-syntactic necessity with a *lexical necessity* explained by the extra-syntactic, contingent synonymy of distinct terms. While (29)/(30) have the same factual content (same properties predicated of same objects), they don't sound synonymous and are not used interchangeably for they differ in meaning. Their truths have different kinds of explanations. Church and other Fregeans don't recognize this failure of SSP with formal truths.

Semantic axioms expressed with displays are a special case of failure of SSP. Here synomic intercepting transforms a necessity like:

(31)   'A television' means a television

into a contingency like:

(32)   'A television' means a TV

- a contingency that explains the lexical necessity of (30), a nonuniform synonym substitution in an objectual formal truth, (29). The failure of SSP with (31) is explained by and is evidence for (31) being a formal truth, true solely by its logico-syntactic form.

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[9] 1998, "The Synonymy Antinomy" in A. Kanamori, ed., Proceedings of the 20th World Congress of Philosophy, Vol VI: Analytic Philosophy & Logic, Philosophy Document Center, 1-21

Church's explanation of the contingency of (1)/(31)/(32) implicitly recognizes that displays subserve displasionable terms. He sees that the extension identified by a display could be all kinds of things depending on the displasionable term, so the truth conditions and truth value of the statement expressed depend on the intended displasionable term. Church assumes that the displasionable term in (1) and (31)/(32) is *the English word*, and he rightly infers that the statements can then be only contingently true, for he rightly assumes that the extension of any such displasionable term is fixed by extrasyntactic contingencies.

9.   Form & reference

Church's reading of (1)/(31) is appropriate for autonomes; for displays it is grammatically possible, but unnatural, not standard. The normal, default reading takes it that the expression serving as the grammatical object of "means" replicates the display, and as such the statement is and must be true whatever be the specific expression. We read (1)/(31) as objectually empty formal truths by naturally and properly assuming that the display is identified intra-sententially, self-referentially. Our tacit displasionable term is something like: *the expression in the language of this utterance*. That term must itself be translated into whatever language is being spoken. With that displasionable term (1) is rightly translated as (5) ('*Rot' heisst rot*), not (3) ('*Red' heisst rot*).

That is the default displasionable term for displayed expressions. A child can understand (1)/(31)/(32) without any conception of words belonging to one language but not another, and thus without anything like Church's conception English: i.e., a language independent of what the speaker is speaking. We cannot but acquire our first language by naturally reading the display in *'K' means L* as being in the language being spoken. We always safely assume that we are currently speaking whatever language we are currently speaking; whether we are currently speaking English is an empirical hypothesis.

This reading of displayed expressions is not stipulated or conventional or akin to assigning an interpretation to a formal language. The reading operates on much the same principle as reading both occurrences of the grapheme 'a television' in (29)(*A television is a television*) as tokens of the same symbol, having the same meaning. (29)/(1)/(31) are true due solely to their formal structure; expression recurrence is not an extra-formal means of securing sameness of symbol sense.

(1)/(31) are true whatever the *meaning* of the expressions displayed, for they are true whatever be the *expressions* displayed, so long as replicate the expressions meant. Terms in formal truths do not lose or alter their normal objectual reference, but that reference becomes idle, subordinate to the truth of what is said. The only feature of the referent of (31) determining the truth of what (31) says is that the referent's display in (31) replicates the expression meant . The references in (1)/(31) are not *per se* to English words but to whatever expressions replicate the expressions there meant. Those referents aren't identifiable prior to the truth of the statements.

(M) (*'K' means K*) is an identity axiom, a semantic identity comparable to the objectual identity axiom:

   (I) K=K.

(M) has the transform:

   (MI) The meaning of (the expression) 'K' = K.

'K' is used objectually (referentially or predicationally) in both its occurrences in (I), but not in either occurrence in (M)/(MI). The left term of (MI), *The meaning of (the expression) 'K'*, identifies and refers to an expression's meaning. It does so by referring to and identifying the expression, by na-

ming its genus and displaying an individual exemplifying the species. The displayed expression isn't semantically a term; it doesn't designate or predicate.

The right term of (M)/(MI) is also not semantically a term. Its syntactic position calls for a term, yet any linguistic expression, whatever its syntax elsewhere, can have this right hand occurrence just as it can have the left hand occurrence. In both occurrences the expression serves to identify the referent meaning, but not by referring to or describing the expression or its meaning, but by having and expressing that meaning.

Like Frege's puzzle about objectual identities, Church's paradox about semantic identities is born of a failure to appreciate the significance of expression recurrence for logical form, a failure born of conceiving of logical form as a property of trans-linguistic thoughts (propositions) rather than the representational structures of sentences[10].