An Enhanced Account of Relative Identity: Double-Reference Starting Point and Dual-Track Feature

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ABSTRACT
This article gives a holistic re-examination of the semantic content and syntactic structure of the concept of relative identity: it suggests and explains an expanded and enhanced dual-track characterization of relative identity. It is expanded in this sense: its due coverage is not narrowly restricted to the equal-status case of identity statements (the symmetric case for identity simplex) but also includes the category-assimilating case (the asymmetric case for identity complex), both of which are unified by the shared semantic core content of relative identity. It is enhanced in this sense: it is intended to give a more refined characterization of relative identity for the sake of enhancing our understanding of the structure and content of real-life relative-identity statements in people’s basic employment of language in view of the relation between thought, language, and the world.

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The purpose of this paper is to give a re-examination of the structure and content of relative identity/sameness as revealed in real-life identity predication statements in people’s basic employment of language (something said about an object). As one jointly concerned issue in logical theory and philosophy of logic in view of philosophy of language and metaphysics, the examination is carried out in the explanatory direction from real-life relative identity statements to their theoretic reflection in logic, rather than in the reverse direction taken not only by the traditional approach to absolute identity but also by the standard modern approach to relative identity. I intend to suggest and explain an expanded and enhanced dual-track account of relative identity for two purposes: <1> to capture some key features of real-life relative identity as revealed in the semantic-syntactic structure of identity-predication statements in people’s basic employment of language; <2> to accurately present them through enriched modern logic resources. This account is expanded in this sense: its due coverage is not narrowly restricted to the equal-status symmetric case as shown in the equivalence-identity statements (the ‘equal-status identity’ case for short, addressing identity simplex) but also includes the unequal-status asymmetric case as shown in the category-assimilating-identity statements (the ‘category-assimilating-identity’ case for short, addressing identity complex),¹ and both of which are unified by the shared

¹ Historically speaking, in my view, Gongson Long was the first in the history of philosophy who has explicitly and reflectively addressed the case of category-assimilating-identity statements in his ‘White-Horse-Not-Horse’ argumentation and shown
semantic core content of real-life relative identity. This account is enhanced in this sense: it is intended to give a more refined theoretic characterization of relative identity for the sake of enhancing our understanding of the structure and content of real-life relative-identity statements concerning the relation between thought, language, and the world.

## 1. Methodology and Background in Modern Treatment

In this section, I briefly explain the methodology underlying this examination: the explanatory direction in treating the issue of identity is that from real-life identity-predication statements to its theoretic elaboration in logic, rather than in the reverse direction taken not only by the traditional approach to absolute identity but also by the standard modern approach to relative identity. This does not amount to indiscriminately denying the latter top-down explanatory direction; rather, the addressed bottom-up explanatory-direction approach is sensitive to the purpose here. That is, an enhanced dual-track account of relative identity is to be explained for this purposes: to capture some key features of real-life relative identity as revealed in the semantic-syntactic structure of identity-predication statements in people’s basic employment of language (saying something about an object), rather than some purely theoretic features of a certain ideal theoretic model (such as a math model) for the sake of a certain theoretic need and in view of the standard logic resources.

Historically, the concept of absolute identity appeared in the literature as a top-down theoretic construction (rather than a bottom-up reflective abstraction of real-life identity statements), which can trace back to Leibniz’s Law (‘LL’ for short) which sometimes collectively means two distinct principles:

\[
\forall x \forall y [x = y \rightarrow \forall F(F(x) \leftrightarrow F(y))]
\]

(LL.1) indiscernibility of identical:

in plain words, identical objects have exactly the same properties.

(LL.2) identity of indiscernibles:

\[
\forall x \forall y [\forall F(F(x) \leftrightarrow F(y)) \rightarrow x = y]
\]

In plain words, objects with exactly [all relevant] the same properties are [absolutely] identical. In (LL.1), the sign ‘=’ for absolute identity is used as a presupposed primitive, while in (LL.2), absolute identity is what is defined. However, it is controversial exactly which one in the two distinct principles, the indiscernibility of identical and the identity of indiscernibles, the label ‘Leibniz’s Law’ is used to stand for. (LL.1) and (LL.2) can be combined into the following bi-conditionals in second-order predicate calculus while avoiding what can be labeled ‘double-reference’ semantic-sensitivity. This author’s relevant discussions have been partially inspired by Gongsun Long’s approach. However, the central content of this essay (its central points and their argumentations and explanations) does not rely on how to interpret Gongsun Long’s relevant texts/ideas but is examined independently of them. In this way, this essay does not examine Gongsun Long’s text/thought in this connection; for this author’s recent detailed explanation of Gongsun Long’s relevant text/thought, see Mou 2020, chapter 8.
the use of ‘=’ as a primitive:

\[(\text{LL})\forall x\forall y[x = y \leftrightarrow \forall F(F(x) \leftrightarrow F(y))]\]

where ‘x’ and ‘y’ are syntactical individual variables, and ‘F(α)’ is a syntactical predicate variable. It is Frege\(^2\) who uses two axiom schemas thus explicitly taking absolute identity (as captured by indiscernibility of identical) to be a primitive and formulating a theory of absolute identity:

\[x = x\text{[reflexivity]}\]

and

\[((x = y) \land F(x)) \rightarrow F(y)\text{[indiscernibility of identical]}\]

Then we can validly derive from (LL) all the following formulas: (LL.11) and (LL.2); the reflexivity, symmetry, and transitivity of identity as follows:

\[\forall x(x = x)\quad \text{[Reflexivity]}\]
\[\forall x\forall y(x = y \rightarrow y = x)\quad \text{[Symmetry]}\]
\[\forall x\forall y\forall z((x = y \land y = z) \rightarrow x = z)\quad \text{[Transitivity]}\]

Though absolute identity theory as highlighted above is a well-established branch in logic and has been used in philosophical reasoning where questions of identity arise, there are well-known substantial difficulties with absolute identity theory (such as that with non-extensional predicate being substituted for ‘F(α)’ and that with its making no allowance for change through which one self-same object gains or loses attributes).\(^3\) In the modern logic, it is Geach who suggests his account of relative identity for the sake of overcoming the difficulties of absolute identity theory in classical logic:

I am arguing for the thesis that identity is relative. When one says ‘x is identical with y’, this, I hold, is an incomplete expression; it is short for ‘x is the same A as y’, where ‘A’ represents some count noun understood from the context of utterance – or else, it is just a vague expression of a half-formed thought.\(^4\)

This relativist reductionist line is to reduce all (absolute) identity statements to relative identity statements, which, following Wiggins, can be summarized as:

\[(D): \text{absolute identity statements requires completion to give a statement of the form } a \text{ is the same as } A \text{ as } b',\]

In view of the current purpose and focus of this writing, I will not go to further details regarding the differences and debates among the advocates of variants of the Geach-style

\(^2\) Frege 1879.
\(^3\) Cf. Griffin 1977, chapter 1; Deutsch & Garbacz 2018, sections 1 and 2. For related issues, also cf. Lowe 1997; Noonan 1997; Noonan & Curtis 2018.
\(^4\) Geach 1967, 238 (the page number is that of its reprint in his 1972). Later in his 1969, he takes restricting the interpretation of ‘A’ to count nouns (as sortal general terms) to be a slip of pen and allows both sortal general terms and mass terms. Wiggins 1967, 1.
standard account of relative identity; rather, I highlight in what sense and to what extent the
Geach-style standard account of relative identity still share the same top-down explanatory
direction from its theoretic construction in logic (in view of some theoretic need and the-
oretic expectations such as simplicity and symmetry) to detect, recognize and characterize
what counts as identity/sameness in real-life identity-predication statements.

First, as far as their syntactic construction/requirement is concerned, both absolute-
identity theory and the Geach-style standard relative-identity theory presuppose that their
theories can be expressed in theoretic resources of classical logic. It is arguably correct
that Geach thinks that what need be challenged by relative identity is not the syntax of
absolute identity but only its interpretation (by re-interpreting identity and reducing all
identity statements to relative identity statements). The latter’s syntactic change (if any) can
be viewed as a quantity modification on the syntactic structure of absolute relative, instead
of a quality change: what is addressed in (LL) regarding all general attributes changes to
being relative to one certain general attribute. In this way, for example, the basic syntactic
requirement for the identity relation is still one kind of equivalence relation with its sym-
metry character. This point can be illustrated by how the Geach-style standard account
of relative identity typically presents its key point ‘a is the same as A as b’ in a formal
way. Interesting enough, in his earlier formulation (1967, 2), Wiggins locates the relative-
identity (sortal) parameter at the right-hand side of the sign ‘=’, like $a =_p b$; later on, he
relocates the relative-identity (sortal) parameter from the right-hand side of the sign ‘=’
to the middle position beneath the sign ‘=’ in his 1980 (17–18 footnotes 3 and 4, 18) and
2001 (17, 24), like $a =_F b$. Though I have yet to see Wiggins’ explicit explanation of why he
makes this change, his motivation might be this: the relative-identity (sortal) parameter put
at the middle-position beneath ‘=’ can better or accurately illustrate the symmetry charac-
ter of relative identity as addressed in the Geach-style standard account. That is, following
the requirement of classical logic and its classical identity theory in this connection, the
Geach-style standard theory of relative identity treats the symmetry character as one indis-
pendable feature of identity/sameness and thus theoretically stipulates the identity relation
as one kind of equivalence relation.

Second, as far as their semantic coverage of the identity relation is concerned, both
restrict the identity (sameness) relation to that between symmetric things (between indi-
vidual objects and between classes at the same class level), a theoretic syntactic feature that
intrinsically bears on the semantic coverage of both absolute identity (as addressed in the
classical absolute-identity theory) and relative identity (as addressed in the Geach-style
standard account). Indeed, because the classical logic account theoretically stipulates the
identity relation in terms of equivalence relation with symmetry character, this brings about
ignoring or failing to recognize the identity relation between the asymmetric things that
is substantially revealed in real-life identity-predication statements [such as that between
the individual object (what the singular term refers to) and the its belonging class (what the
general term refers to) and that between sub-class and its belonging class], to be explained
below.

Third, as far as the semantic (referential) sensitivity is concerned, one theoretic feature
of classical logical theory is this: the classical logical theory is not referentially sensitive to,
and thus has no room for, particular attributes as specific-part aspects of what the subject
referring term (in an identity-predication statement) refers to; that is, it is not referen-
tially sensitive to the double-reference feature of real-life identity-predication statements
HISTORY AND PHILOSOPHY OF LOGIC

in people’s basic employment of language, to be explained below. In this way, both absolute
identity theory and the Geach-style standard relative-identity theory formulated in terms
of classical logical resources are not sensitive to, and fail to recognize, the double-reference
feature of real-life identity-predication statements in people’s basic employment of lan-
guage. Without due referential sensitivity, an account of identity cannot really answer the
question of how an identity-predication statement is possible, because, as I will explain, the
dual-track feature of an identity-predication statement starts from the double reference of
the subject referring term in the identity-predication statement.

The bottom-up explanatory direction of the suggested dual-track account of relative
identity, which is intended to capture the identity relation as revealed in real-life identity-
predication statements, distinguishes itself from the top-down explanatory direction in
the foregoing three connections. At this point, it is important to note that, in the dual-
track-enhanced account of relative identity to be explained below, the traditional absolute-
identity approach is not totally discarded; rather, absolute identity is treated as one special
case of relative identity; furthermore, the relative identity case that is covered by the Geach-
style standard account of relative identity is treated as one type (i.e. the aforementioned
equal-status case with its manifest level of identity simplex), instead of the exclusive one.

2. A Preliminary Examination of Real-Life Relative Identity Statements

In this section, I present two typical cases of real-life relative identity statement of subject-
predicate structure that are explicitly shown in peoples’ basic employment of language
given an object, something is said of the object) in ordinary discourses of natural lan-
guage, giving a preliminary examination of their structures and contents. This preliminary
examination of real-life relative identity is not intended to be exhaustive to the extent that
it focuses on the explicitly given identity statements in people’s basic employment of lan-
guage, instead of also examining some implicitly given identity statements which appear
to be non-identity-predication statements in a grammatical sense but somehow share the
same or similar semantic-syntactic structure of identity-predication statements, which is
shown by the second type of explicitly-given identity statements, to be explained below.

Several notes are due at this point. First, by the phrase ‘real-life relative identity’ I mean
what is shown in distinct types of identity statements of subject-predicate structure that
are explicitly shown in peoples’ basic employment of language (given an object, something
is said of the object) in ordinary discourses of natural language.

Second, unless indicated otherwise, by the phrase ‘an object’ I primarily mean a variety
of first-order material objects that are generated or produced and exist in space and time
in this natural world of which humans are parts, either generated naturally or produced
in an artifact way; they have their natural life spans; each of them typically has its distinct
multiple attributes. They distinguish themselves from second-order objects that are created
by human minds as thoughts which are timeless and whose identities can be stipulated
with their definite attributes only. A second-order object can be absolutely identical with

6 It is arguably the case that the addressed second type of real-life relative identity is also implicitly in the general subject-
predicate statements of people’s basic employment of language, which I will explain in another writing rather than here
for two considerations. On the one hand, the explanation of this case deserves a separate writing in view of its significance;
on the other hand, the central features of the enhanced characterization of relative identity, which are focused on in this
writing, can be sufficiently shown by the two explicit types as explanans.
itself as all of its attributes are permanent without change (such an object is identical with itself being relative to all the attributes possessed by it).

Third, in this preliminary examination, I use such plain words as ‘same’/ ‘identical’, ‘different’, ‘collection’ in their pre-theoretic literal senses or based on people’s pre-theoretic understandings with no theoretic burdens that are sometimes imposed upon them.

Fourth, though in plain words, the following preliminary analyses of distinct cases of the identity-predication statements are intended to identify and specify certain structures and contents, which are shared but manifested by token cases of the addressed two types of identity statements at a deep semantic-syntactic level, rather than given at a mere grammatical level; these preliminary analyses thus do not necessarily use some colloquial natural-language expressions with usual grammatic labels but might use more accurate natural-language expressions: for example, in one sample identity statement of case type (B), I use a phrase like ‘is identical to the human being’ as part of this preliminary analysis, instead of simply using ‘is a human being’, because the former is more accurate to capture part of the structure and content of this case type of identity statements.

Fifth, the cited example above involves the well-known grammatical distinction between what are respectively labeled ‘is’ of identity and ‘is’ of predication; in my preliminary analysis in this section, I will show how they partially share the same identity semantic structure; in my further theoretic explanation in the next section, I will explain how they are respectively the cases of identity simplex and of identity complex.

In each of the following sample identity-predication statements of the two types, the ‘regarding…’ part is the semantic completion of what is incomplete when its natural language utterances are made without this part explicitly given.\(^7\)

Case type (A):

\((A.1)\) Biden is identical with (the same as) Trump regarding (being relative to) their shared attribute of) being a USA President.

[Or: they are the same as each other regarding (being relative to their shared attribute of) being a USA President.]

Preliminary analysis:

In this identity-predication statement, Biden as a whole person is talked about (designated) while at the same time his specific attribute of being a USA President is pointed to and focused on, and then the sentential-predicate comment (the identity-predicate explicitly given) ‘is identical with Trump regarding (relative to) the addressed general attribute of being a USA President’ is made on Biden via (being relative to) his specific attribute of being a USA President that is generalized as (or manifests) the addressed general attribute (expressed by the general term ‘a USA President’) which is shared by Trump.

\((A.1)\)^\(^*\) Biden is not identical with Trump regarding (relative to) the attribute of being a former USA Senator that is possessed by Biden but not possessed by Trump.

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\(^7\) As those in the relative-identity track would typically agree that such identity statements of the form ‘a is identical with [to] or the same as b’ is ‘incomplete’ (including something implicit) and need to complete what is incomplete (or make explicit what is implicit). However, such sayings concerning what is incomplete or what is implicit can be ambiguous and vague. Following Grice 1975 and Bach 1994, we can label ‘implicature’ (Grice 1975) such implicit meanings in statements/utterances: one says and communicates one things and thereby communicates something else in addition (though the latter is closely related to the former); in contrast, we label ‘impliciture’ such implicit meanings in statements/utterances: ‘part of what is communicated is only implicit in what explicitly expressed, either because the utterance is semantically underdeterminate and completing is required or because what is being communicated is an [pragmatically] expanded version of the proposition expressed’ (Bach 1994, 324). In the current logical context, by default, the addressed ‘incompleteness’ is semantic underdetermination, neither conversation implicature nor pragmatic expansion.
[Or: they are different from each other regarding (being relative to) Biden’s specific attribute of being a former USA Senator which is not possessed by Trump.]

Preliminary analysis:

In this identity-predication statement, Biden as a whole person is talked about (designated) while at the same time his specific attribute of being a former USA Senator is pointed to and focused on, and then the sentential-predicate comment (the identity-predicate explicitly given) ‘is not identical with (or different from) Trump regarding (relative to) the addressed general attribute of being a former USA Senator’ is made on Biden via (being relative to) his specific attribute of being a former USA Senator that is generalized as (or manifests) the addressed general attribute (expressed by the general term ‘a former USA Senator’) which is shared by Trump.

One special case (sub-type) of this general type of the relative-identity statement, when both sides of the identity indicator ‘is’ (‘is’ of identity) or ‘is identical with’ designate the same individual object, is one significant paradigm case that is addressed by the law of identity, whose token case can be given as follows:

(A.1.1) Biden is identical with himself regarding (being relative to) one (or more than one) of his unchanging attributes.

Preliminary analysis:

In this identity statement, Biden as a whole person is talked about (designated) while at the same time one (or more than one) of his specific attributes that are unchanging throughout his life (whatever they are) is(are) pointed to and focused on, and then the sentential-predicate comment ‘is identical with himself regarding (relative to) his addressed unchanging attribute(s)’ is made on Biden via (being relative to) his addressed specific attribute(s) that is(are) generalized as the addressed general attribute(s) which is(are) possessed by Biden himself.

It is important to note that the foregoing preliminary analysis renders the addressed object’s own specific attribute general once it is expressed in the sentential predicate, whether the individual object that is rendered identical with is this object itself (say, Biden) designated by the subject referring term or some object else (say, Trump) somehow addressed in the sentential predicate. This is because of the general character of predication: in reference, one’s specific attribute is pointed to and focused on (though in a descriptive way); in contrast, in the predication that is addressed through a sentential predicate, one’s specific attribute addressed in reference is generalized as (or manifests) a general attribute (whether nominally or conceptually or ontologically).

(A.1.1)* Biden [today] is not identical with himself [yesterday] regarding (being relative to) one (or more than one) of his changing attributes.

Preliminary analysis:

In this identity statement, Biden as a whole person is talked about (designated) while at the same time one (or more than one) of his specific attribute that is (are) possessed by him at a certain time [today] during his life (whatever they are) is(are) pointed to and focused on, and then the sentential-predicate comment ‘is not identical with himself regarding (relative to) the addressed general attitude(s)’ is made on Biden via (being relative to) his specific attribute(s)

8 The examination here is ontologically neutral regarding the debate over the nature of universals in treating the problem of universals in metaphysics.
that is (are) generalized as the addressed general attribute(s) which is not possessed by Biden at another time [yesterday].

(A.2) The brown cat [the class collection of individual brown cats]\(^9\) is identical with the grey cat regarding (being relative to) their shared attribute of being a cat.

Preliminary analysis:

In this identity statement, the class collection of individual brown cats as a whole is talked about (designated) while at the same time their [i.e. those individual brown-cat members’] collectively shared and individually possessed specific attribute of being a cat is pointed to and focused on, and then the sentential-predicate comment (the identity-predicate explicitly given) ‘is identical with the grey cat (i.e. the class collection of individual grey cats) regarding (relative to) the addressed general attribute of being a cat’ is made on the collection of individual brown cats via (being relative to) their specific attribute of being a cat that is generalized as (or manifests) the addressed general attribute (expressed by the general term such as ‘cat’ or the description ‘anything that are cats’) which is shared by the collection of individual grey cats [by the individual-grey-cat members of the grey-cat class].

(A.2)\(^\ast\) The brown cat is not identical to the grey cat regarding (being relative to) the attribute of having brown color that is possessed by any member of the former but not by any member of the latter.

Preliminary analysis:

In this identity statement, the collection of individual brown cats as a whole is talked about (designated) while at the same time their collectively shared and individually possessed specific attribute of having brown color is pointed to and focused on, and then the sentential-predicate comment (the identity-predicate explicitly given) ‘is not identical with the grey cat (i.e. the collection of individual grey cats) regarding (relative to) their specific attribute of having brown color’ is made on the collection of individual brown cats via (being relative to) their specific attribute of having brown color that is generalized as (or manifests) the addressed general attribute (expressed by the general term such as ‘the brown thing’ or the description ‘any things that are brown’) which is not shared by any member of the collection of individual grey cats.

Furthermore, it is important to note that the identity as sameness (a certain same attribute shared between addressed things) is not narrowly restricted to the equal-status symmetric case concerning individual objects or classes at the same level as shown in the equivalence-identity statements (i.e. the equal-status identity case) but also occurs in the unequal-status asymmetric case as show in the category-assimilating-identity statements (i.e. the category-assimilating-identity case), both of which are holistically covered by real-life identity-predication statements, and both of which are unified by the shared semantic core content of real-life relative identity. That is, the identity statements are not limited to the equal status case in which the objects that are referred to respectively the terms besides the ‘is identical with’ have the same reference status: either both are individual objects (such as Biden and Trump) or both are collections which are not each other’s sub-class (such as the brown cat and the grey cat).

\(^9\) Such phrases [the definite article ‘the’ + a common noun] as ‘the brown cat’ and ‘the cat’ used in this context does not mean one specific or unique individual object (such as one specific cat) but the collection of all individual objects in the addressed class. It is noted that this usage in English is grammatical: the definite article ‘the’ plus a common noun can be used to express a collection of all individual objects that possess the (general) attribute given by (the descriptive content of) the common noun.
Case type (B):

(B.1) John is [is identical to and thus belongs to] a college instructor [the class collection of college instructors] regarding (relative to) the shared attribute of being a college instructor.

Preliminary analysis:

In this statement that grammatically uses ‘is’ of predication, the relative-identity predication is also implicitly but substantially made at its base level concerning individual objects that are addressed explicitly on the left-hand side of ‘is’ or implicitly on the right-hand side of ‘is’. John as an individual whole person is talked about (designated) while at the same time his specific ‘college-instructor’ attribute is pointed to and focused on, and then, at the manifest level, John is classified as a member of the college-instructor class via the sentential-predicate comment ‘is a college instructor’ or ‘is identical with a member of the college-instructor class, based on (or presupposing) the implicitly addressed relative-identity predication: at the base level which gives a class-membership criterion or basis on which John can be classified as one member of the college-instructor class, the predication made via the sentential-predicate comment ‘is a college instructor’ has its base layer of relative-identity: the relative-identity predication ‘is identical to the class collection of college instructors regarding (relative to) the addressed general college-instructor attribute’ is made on John via (being relative to) his specific college-instructor attribute that is generalized as (or manifests) the addressed general attribute (expressed by the general term ‘the college instructor’) which is shared by John and by any member of the class collection of college instructors.

(B.1)* John is not [is not identical to and thus does not belong to] a college instructor [the class collection of college instructors] regarding (relative to) John’s specific attribute of being graduated from Smith High School.

Preliminary analysis:

In this statement that grammatically uses ‘is’ of predication, the relative-identity predication is also implicitly but substantially made at its base level concerning individual objects that are addressed explicitly on the left-hand side of ‘is’ or implicitly on the right-hand side of ‘is’. John as an individual whole person is talked about (designated) while at the same time his specific attribute of being graduated from Smith High School is pointed to and focused on, and then, at the manifest level, John is not classified as a member of the college-instructor class via the sentential-predicate comment ‘is not a college instructor’ or ‘does not belong to the college-instructor class, based on (or presupposing) the implicitly addressed relative-identity predication: at the base level which gives a class-membership criterion or basis on which John is not classified as one member of the college-instructor class, the relative-identity predication ‘is not identical to the class collection of college instructors regarding (relative to) the addressed general attribute of being graduated from Smith High School’ is made on John via (being relative to) his specific attribute of being graduated from Smith High School, which is generalized as (or manifests) the addressed general attribute (expressed by the general term ‘the graduate of Smith High School’) which is possessed by John but not by any member of the class collection of college instructors.

(B.2) The brown cat [the class collection of brown cats] is [is identical to and thus belongs in] the cat [the class collection of cats] regarding (being relative to) their shared attribute of being a cat.

Preliminary analysis:

In this statement that grammatically uses ‘is’ of predication, the relative-identity predication is also implicitly but substantially made at its base level concerning individual objects that are addressed indirectly (via class) on both left-hand and right-hand sides of ‘is’. The
class collection of brown cats as a collection whole is talked about (designated) while at the same time their [i.e. those individual brown-cat members'] collectively shared and individually possessed specific attribute of being a cat, which is possessed by each of individual brown cats is also pointed to and focused on, and then, at the manifest level, the class collection of brown cats is rendered included as a sub-class in the class collection of individual cats via the sentential-predicate comment 'is the cat', based on (or presupposing) the implicitly addressed relative-identity predication: at the base level of this predication which gives a class-inclusion criterion and basis on which the class-inclusion predication is positively or negatively made (in this case, the class of brown cats is positively rendered included as a subclass in the class of individual cats), the relative-identity predication 'is identical to the class collection of individual cats regarding (being relative to) the addressed general cat-ness attribute' is made about the individual brown cats via (being relative to) each’s specific attribute of being a cat that is generalized as (or manifests) the addressed general attribute (expressed by the general term 'the cat') which is jointly shared by any member of the subclass of individual brown cats and by any member of the class of individual cats.

(B.2)* The brown cat [the class collection of brown cats] is not [is not identical to and thus does not belong in] the cat [the class collection of cats] regarding (being relative to) their attribute of having brown color.

Preliminary analysis:

In this statement that grammatically uses 'is' of predication, the relative-identity predication is also implicitly but substantially made at its base level concerning individual objects that are addressed indirectly (via class) on both left-hand and right-hand sides of 'is'. The class collection of brown cats as a collection whole is talked about (designated) while at the same time their [i.e. those individual brown-cat members'] collectively shared and individually possessed specific attribute of having brown color, which is possessed by each of individual brown cats is also pointed to and focused on, and then, at the manifest level, the class collection of brown cats is rendered not included as a sub-class in the class collection of individual cats via the sentential-predicate comment 'is not the cat', based on (or presupposing) the implicitly addressed relative-identity predication: at the base level of this predication which gives a class-inclusion criterion and basis on which the class-inclusion predication is positively or negatively made (in this case, the class of brown cats is negatively rendered not included as a subclass in the class of individual cats), the relative-identity predication 'is not identical to the class collection of individual cats regarding (being relative to) the addressed general attribute of having brown color' is made about the individual brown cats via (being relative to) each’s specific attribute of having brown color that is generalized as (or manifests) the addressed general attribute (expressed by the general term 'having brown color') which is possessed by any member of the class of individual brown cats but not by any [all] member of the class of individual cats (because some of individual cats are not white).

There are three significant observations regarding the structure and content of the foregoing real-life identity-predication-involved statements. First, it is already well known that identity predication is relative in nature: the predicative ‘is identical with (to)’/‘is the same as’ [or ‘is not identical with (to)’/‘is different from’] is relative to a certain general attribute that are shared by both [or possessed by the former (by any individual members of the former) but not by the latter (or not by any individual members of the latter)].

Second, we notice that not only explicitly given identity-predication statements but also the category-assimilating predication statements (of class-membership predication and class-inclusion predication) intrinsically involve relative identity and thus constitute two typical cases of real-life relative-identity-predication statements; what is usually grammatically distinguished by ‘is’ of identity and ‘is’ of predication share the same relative-identity
core which is either explicitly shown in the manifestly symmetric case or implicitly presupposed in the manifestly asymmetric case. In the next section, I will give a further theoretic explanation of how it is possible for two distinct cases of relative identity to intrinsically share the same semantic relative-identity structure in terms of the distinction between relative-identity simplex and relative-identity complex.

Third, we also notice that, semantically and logically not only prior to making the identity predication but also prior to addressing the general attribute relative to which both are said to be identical or not identical, a certain specific attribute of the subject referent is denoted by the subject referring term at the same time when it designates the subject referent as a whole. This significant phenomenon shared in all these cases is the addressed double-reference phenomenon of people’s basic employment of language that deserves a more examination, to be carried out in the next section.

3. An Enhanced Dual-Track Characterization of Relative Identity: From Double-Reference Starting Point to Dual-Track Feature

In the preceding preliminary examination of the two distinct typical cases of real-life relative identity, we have realized that all these cases share one phenomenon (which becomes prominent especially when one sameness case is compared with and contrasted to its difference case), i.e. the addressed double-reference phenomenon of people’s basic employment of language. It provides one basis on which to understand the structure and content of real-life relative identity and the due starting point at which real-life identity-predication statements move into a dual track of relative-identity-setting process.

3.1. Two Distinct Types of Identity Predication: Identity Simplex and Identity Complex

As shown in the preliminary analysis of real-life identity-predication statements, not only explicitly given identity-predication statements but also the category-assimilating predication statements (of class-membership predication and class-inclusion predication) intrinsically involve relative identity and thus constitute two typical cases of real-life relative-identity-predication statements. In this sub-section, I give a further theoretic explanation of how it is possible for two distinct cases of relative identity to intrinsically share the same semantic relative-identity structure in terms of the distinction between relative-identity simplex and relative-identity complex. In other words, I explain how the above addressed manifest grammatical distinction between ‘is’ of identity and ‘is’ of predication partially share the same relative-identity semantic structure in their distinct manifest ways.

I make the distinction between the relative-identity simplex and the relative-identity complex involved in the addressed two types of real-life identity predication statements. The relative-identity simplex is the relative-identity predication made on relation between individual objects (in logical terms, individual variables or constants at the first-order base level in the domain of quantification as specified in a semantics interpretation of a predicate-logic account) regarding (being relative to) a certain attribute that the addressed objects share or jointly possess; the identity simplex thus has the reflexivity, symmetry, and transitivity of the relative identity relation between the addressed individual objects. It is noted that symmetry here is more semantic (via a semantic interpretation) than syntactic:
it does not imply the syntactic conflation between the subject and the predicate; rather, such symmetry is in the context of the subject-predicate semantic-syntactic structure of the identity predication statements: ‘x’ on the left-hand side of the identity sign ‘\( \equiv \)’ is still the subject term (its referent is what is talked about in making identity predication via a sentential predicate like ‘is b’), while ‘y’ on the right-hand side of the identity sign ‘\( \equiv \)’ is still part of the identity predicate. In this way, the semantic symmetry character is compatible with a general asymmetric formal presentation, either ‘\( \alpha \rightarrow \beta \)’ in the Geach-style standard account, or ‘\( \alpha \left[ F \right] \rightarrow \beta \)’ in the suggested dual-track account, to be explained below.

The identity complex is a multiple-layer predication that is a combination of its implicit base layer of identity simplex concerning individual-objects of the addressed class(es) with its manifest layer of class-membership predication or of class-inclusion predication. A natural question one might ask is this: how it is possible for the class-membership/class-inclusion predication statements to have the identity simplex as its base layer of predication. This question is intrinsically related to the question of why an object is classified as one member of a class and why a class is classified as one subclass included in its belonging class. The reason is quite straightforward. In the case of class-membership predication, because the individual-object members of the class are supposed to share something same or identical, the same membership, in least-metaphysically-loaded terms\(^{10}\); that is, they are identical with each other regarding their shared identical membership. By the same token, in the case of class-inclusion predication, because any individual-object members in the subject class are also individual-object members of the predicate class, and the former individual-object members and the latter individual-object members are supposed to share something same or identical, the same membership, in least-metaphysically-loaded terms; that is, they are identical with each other regarding their shared identical membership.

It is noted that the identity complex as a whole can be viewed from distinct perspectives and thus characterized in distinct primary terms. From the perspective of its routine use in people’s natural language use or of the manifest grammatical level, it is primarily a class-membership/class-inclusion predication; people usually use such predication statements in a linguistic-convention way in their natural languages without necessarily thinking about the justification foundation on which the addressed class-membership/class-inclusion predication is based. However, from the perspective of its deep semantic-syntactic structure concerning the foundation on which class-membership/class-inclusion predication is based, it is primarily an identity-involved predication statements in the following sense. An identity-complex predication statement combines or associates its manifest class-membership/class-inclusion predication with its base layer of identity simplex that underlies its manifest layer; it thus points to the metaphysical foundation for establishing the addressed class-membership/class-inclusion predication through the semantic-syntactic structure of such a predication statement in a way as explained in the previous passage.

The foregoing analysis can provide an explanation for how the grammatical distinction between ‘is’ of identity and ‘is’ of predication essentially share the same deep semantic-syntactic basis (i.e. the identity simplex) and why the addressed grammatical distinction is presented through or associated with ‘is’, instead of some other term. Take an example for the identity complex with its manifest layer of class-membership predication. Consider the statement ‘A brown cat is a cat’, whose complete presentation can be this: ‘An individual

\(^{10}\) It might be labeled ‘universal’ or ‘unifying force’,
brown cat is a member of the collection/class of cats with their identical relation regarding
(being relative to) their shared general attribute of having cat-ness: <1> the addressed
individual brown cat is identical with other individual-cat members of the cat class regard-
ing their shared general attribute of being a cat (the cat membership), <2> the addressed
individual brown cat is thus a member of the cat class, and <3> the class of brown cats
is thus a sub-class of the class of cats. [It is noted that, although class membership is not
a transitive relation (an individual object is a member of a class but is not necessarily a
member of a larger class that has the former class as a subclass), the relation of class inclu-
sion is transitive. It is also noted that, although the class-inclusion predication as a whole
is asymmetric, the identity simplex layer of the class-membership predication is reflexive,
symmetric and transitive.]

In this way, although its identity-simplex layer is symmetric, the identity complex as a
whole is asymmetric because its manifest layer of class-membership/class-inclusion pred-
ication is asymmetric. This explains why in the foregoing two cases of identity complex are
asymmetric. Given that ‘A brown cat is a cat’, this statement as a whole cannot be rephrased
as ‘A cat is a brown cat’: although its implicit layer of identity simplex concerning the indi-
vidual object, cat, designated by the singular referring term ‘a cat’ at the subject position
and any individual object as a member of the class of cats denoted by the general term ‘a
cat’ in the sentential predicate is indeed symmetric, its manifest layer of class-membership
predication is asymmetric, and thus the statement as one token of ‘identity’ complex is
asymmetric. By the same token, given that ‘The brown cat [the collection of brown cats]
is the cat [the collection of cats]’, this statement as a whole cannot be rephrased as ‘The
cat is the brown cat’: although its implicit layer of identity simplex concerning the individual
object (a brown cat) as a member of the subclass of brown cats denoted by the general
referring term ‘the brown cat’ (or ‘the class of brown cats’) at the subject position and any
individual object as a member of the class of cats denoted by the general term ‘the cat’
(or ‘the class of cats’) in the sentential predicate is indeed symmetric, its manifest layer of
class-inclusion predication is asymmetric, and thus the statement as one token of identity
complex is asymmetric.

It is important to note that the point of the foregoing analysis is neither to theoret-
ically reduce all the predication statements to the identity-predication-only statements
nor to practically persuade people to change their ordinary-language-use habits to some
ideal way of complete presentations for revealing their identity structure. As explained
above, on the one hand, the two cases for identity complex are still class-membership/class-
inclusion predication at the manifest layer, instead of identity-predication only; on the
other hand, in various types of identity-predication statements, the symmetric identity
simplex concerning the relative identity between individual objects is either presented in
a straightforward and manifest way (in the equal-status case) or lies implicitly in the base
layer of the multiple-layer identity complex concerning individual-objects of the addressed
class(es) that are explicitly treated in its manifest layer of class-membership/class-inclusion
predication.

Rather, the point is to detect, recognize and adequately characterize the key features of
relative identity as revealed in the deep and refined semantic-syntactic structure of various
types of real-life relative-identity-predication statements in people’s basic employment of
language and, through this bottom-up explanatory direction as explicated in the prece-
ding section, to enhance our understanding and treatment of the structure and content of
(the concept of) relative identity as one issue in logical theory and philosophy of logic and to accurately present them via enriched modern logic resources.

### 3.2. Double-Reference Feature of People’s Basic Employment of Language: Due Starting Point for Relative Identity

In the above, the double-reference feature is identified and traced up in a detour way from the predication all way down to the reference where the subject referring term designates the object as a whole and at the same time points to some specific attribute of it; in the following, to have a better understanding of the due starting point of real-life relative identity statements, I examine the double-reference feature of people’s employment of language in a straightforward way by analyzing how reference is possible in people’s basic employment of language.

It is known that one basic employment of language is this: when referring to an object (a physical object in space and time, a number in math, or a fictional figure in a story, etc.) via a referring name in linguistic activities (such as doing communication via ordinary language, doing math via math language, etc.), typically and generally speaking, a speaker intends to say something (and she can say different things or different speakers can say different things) of the (same) object as a referent, or, in a more semantically-oriented way (treating those pragmatic elements like a speaker’s intention as the presupposed background elements), something is said of a referent. In the following, first, I illustrate the double-reference character of the foregoing basic employment of language via two typical groups of sentences in our folk linguistic practice, which says something about what a referring name refers to, respectively concerning two typical kinds of referring names [i.e. a proper name such as ‘(Joe) Biden’ that refers to an individual object (the current US President), and a descriptive referring name such as ‘the white horse’ that refers to either (a typical case) one collection of individual objects that fit the description or one distinctive (or even unique) individual object that fits the description]. Second, I highlight a number of pre-theoretic characterizations of our ordinary double-reference linguistic practice that are intrinsically related to the dual-track feature of relative identity. It is noted that the previously addressed basic employment of language has both its semantic dimension and its pragmatic dimension, which can be linguistically or conceptually distinguished, though they are entangled with each other and cannot be totally metaphysically separated or cannot exist without each other; all the following linguistic observations that are given in pragmatic terms can be presented in non-pragmatic terms when the focus is on the semantic dimension of the addressed linguistic phenomenon.

11 In the latter case, a descriptive name is sometimes labeled ‘a definite description’ in its technical sense.

12 There is the need for clarifying what I mean by the ‘semantic’ dimension. Given the identities of the semantic and the pragmatic, two presuppositions can be made concerning the legitimacy of the semantic examination of the basic employment of language: (1) we can presuppose pragmatic contributing elements and give a non-pragmatic semantic examination focusing on the semantic dimension of the basic employment of language; (2) in the foregoing non-pragmatic semantic examination, sentences are used to linguistically express manifestations (tokens) of the pre-sentential basic employment of language (type). Several notes are due. First, one implication of presupposition (1) is that, as a matter of fact, the semantic dimension and the pragmatic dimension of the double-reference character of the basic employment of language are not absolutely separated from each other but are distinct and somehow complementary dimensions. Second, when the semantic dimension is focused on in one’s semantic examination, it does not automatically imply that those relevant pragmatic elements (or those elements in the pragmatic dimension of the issue of how reference is possible concerning the basic employment of language) are ignored or dismissed; rather, they can be legitimately presupposed, although they
Let me start with the first sample group of sentences, giving a preliminary *double-aboutness* analysis in terms of *double-reference* semantic paraphrase for each of them:

(1.1) Biden was born on 20th November 1942.

A preliminary *double-aboutness* analysis in terms of *double-reference* semantic paraphrase: in this sentential context, 'Biden' refers to Biden as a whole and *at the same time* points to his specific *birth* part (talking about his *birth* part as well as Biden as a whole person); the sentential predicate *further comments* on Biden as a whole in view of this specific-part referent.\(^{13}\) [He is the same as the collection of the people who were born on 20th November 1942 regarding (or relative to) the general attribute of being born on 20th November 1942]

(1.2) Biden had a headache on 20th May 2022.

A preliminary *double-aboutness* analysis in terms of *double-reference* semantic paraphrase: given that it is true, in this sentential context, 'Biden' refers to Biden as a whole and *at the same time* points to his specific *head* part (talking about his *head* part as well as Biden as a whole person); the sentential predicate *further comments* on Biden as a whole in view of this specific-part referent. [He is the same as the collection of the people who had a headache on 20th May 2022 regarding (or relative to) the general attribute of having a headache on that date.]

(1.3) Biden is the US President.

A preliminary *double-aboutness* analysis in terms of *double-reference* semantic paraphrase: in this sentential context, 'Biden' refers to Biden as a whole and *at the same time* points to his specific *US- Presidency* part (talking specifically about his previous *US- Presidency* part as well as Biden as a whole person); the sentential predicate *further comments* on Biden as a whole in view of this specific-part referent. [He is the same as the collection of the people who assume the US Presidency [or the collection of the US Presidents (or relative to) the general attribute of being the US Presidency]]

(1.4) Biden today is not the same as Biden yesterday.

A preliminary *double-aboutness* analysis in terms of *double-reference* semantic paraphrase: in this sentential context, 'Biden' refers to Biden as a whole and *at the same time* points to his current specific *today* part (talking specifically about Biden’s current *today* part as well as Biden as a whole person); the sentential predicate *further comments* on Biden as a whole in view of this specific-part referent.

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\(^{13}\) A separate writing by this author presents a double-reference-related account of predication, labeled 'subjective-perspective' account, which gives a detailed explanation of how the semantic-whole referent in view of the specific-part referent (in perspective focus) is *further commented* on via the sentential predicate. With consideration of the major purpose here, I will not elaborate the predication part of such preliminary *double-aboutness* analyses in this writing. Nevertheless, a brief explanation of it will be given in the third pre-theoretic observations on the *double-aboutness* character below in terms of the *double-reference* analysis below.
In so saying, we are not using the same name to refer to four different persons but the same one person, Joe Biden. So we can simply say:

(1) Biden was born on 20th November 1942, had a headache on 20th May 2022, is the US President, and (today) is not the same as Biden yesterday.

The second sample group of sentences, which go with descriptive referring names as their subject names are given as follows:

(2.1) The brown cat [the class collection of brown cats] is [identical to] the cat [the class collection of cats] regarding (being relative to) some attribute that they share.

A preliminary double-aboutness analysis in terms of double-reference semantic paraphrase: in this sentential context, the referring term 'the brown cat' refers to the collection of brown cats as a whole and at the same time points to those individual brown-cat members' collectively shared and individually possessed specific attribute of being a cat (talking specifically about the jointly shared specific attribute of being a cat as well as the whole collection of brown cats); the sentential predicate further comments on the collection of brown cats as a whole in view of this specific part.

(2.2) The brown cat [the class collection of brown cats] is not [identical to] the cat [the class collection of cats] regarding (being relative to) some distinct attribute which is possessed by any brown cats but not by all cats.

A preliminary double-aboutness analysis in terms of double-reference semantic paraphrase: in this sentential context, the referring term 'the brown cat' refers to the collection of brown cats as a whole and at the same time points to those individual brown-cat members' collectively shared and individually possessed specific attribute of having brown color (talking specifically about the jointly shared specific attribute of having brown color as well as the whole collection of brown cats), which is possessed by any brown cats but not by all members of the cat collection; the sentential predicate further comments on the collection of brown cats as a whole in view of this specific part: the class collection of brown cats is not [identical to] the class collection of cats regarding (being relative to) some distinct attribute which is possessed by any brown cats but not by all cats.

In so saying, we are not using the same name to refer to two different collections of things but the same one collection, that of brown cats. So we can simply say:

(2) The brown cat is identical to the cat regarding some shared attribute and is not identical to the cat regarding some distinct attribute that is possessed by any brown cats but not by all cats.

Now I address and highlight several pre-theoretic but reflective observations of the double-aboutness character of consciousness in semantic-ascent terms of the double-reference character of the basic employment of language (i.e. saying something about an object) as illustrated by the above two paradigm cases.

First, in people's linguistic practice, people use the proper name '(Joe) Biden' to designate Joe Biden as a whole [with his various attributes and in his various relations (to some other objects)]\(^{14}\) so that we can talk about him (rather than someone else) while pointing respectively to certain attributes (in perspective focuses) and make various further comments that can be directly or indirectly paraphrased into distinct types of

\(^{14}\) It is presupposed, instead of being further explained, that 'Biden' here designates Joe Biden via various relevant pragmatic contributing elements to the communication link between the use of the name and Joe Biden as the current USA President.
identity-predication statements on him. In this way, the name ‘Biden’ designates the same object (in this actual world, instead of another (possible) world, Joe Biden, who himself is an object as a whole that unifies his various (diachronic and synchronic) specific (attribute) parts into one collection. No matter which specific part of Biden is focused on in a given sentential context (as one specific-part referent), the same object (Biden with all his rich attributes) as the semantic-whole referent is talked about or thought about.

Second, in each of these declarative sentences or statements, when the object as a whole (the semantic-whole referent) that is said of or designated (say, Biden as a whole person), a certain specific part of it, or a certain specific-part referent, is also at the same time referred or pointed to, whose identity is to be sensitive to the focus as shown or revealed in the given sentential context, which is taken to be possessed by Biden, and which is up to some further comment via a certain linguistic predicate expression in the sentence. In other words, there are two levels of what is about here: first, about Biden as a whole; second, about some specific part in perspective focus. Given that, in people’s basic employment of language (something being said of an object), what is referred to is essentially what a sentential context is about, the addressed basic linguistic fact thus has its fundamental double-reference character.

Third, the specific-part referent has its dual status: on the one hand, as explained above, it is part of what is said about in the sentential context and thus it has its reference status; on the other hand, in the given sentential context, it is pointed to in focus and thus specified as a certain specific part of the designated referent whole and as part of what is said about the semantic-whole referent, although, generally speaking, the sentential predicate further says something or further comments on the object as a whole in view of this specific-part referent that is referentially and logically prior to what the sentential predicate literally expresses. In this sense, and to this extent, the predication in the basic employment of language right starts at the specific-part reference, although, generally speaking, the latter (or the predicative content of the subject referring name via its specific-part reference) does not exhaust the former in the following sense: the predication in the basic employment of language (in most cases) does not stop at what the (explicit or implicit) descriptive or predicative content of the subject referring name in the sentential context gives; rather, it is further completed and complemented by what the sentential predicate expresses (via its further comment on the designated object as a whole in view of the specific-part referent).

Fourth, the speaker can change his/her focus from one aspect of an object, which the subject expression designates, to another aspect of it which she already knows (whether or not she would fully know the object regarding all its aspects); he/she can make, say, the statements (1.1)–(1.4) on different occasions for distinct purposes and with distinct perspective focuses. What makes such a focus shift possible lies in this (though seemingly trivial): the speaker presupposes and believes that the same object possesses those specific-part aspects, whether or not she purposely focuses on a certain aspect, among others, in his/her current statement.

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15 Or more than one specific attribute part. For the sake of simplicity of discussion, I focus on the one-part case.
16 Although the word ‘comment’ might bring about an impression of being theoretically-loaded, one consideration for using the word here is that it seems to be user-friendly in capturing what really happens in the addressed people’s basic employment of language in this connection.
17 This linguistic observation shows that we actually render the object richer (or thicker in metaphoric terms) than what the above second linguistic observation shows us (i.e., explicitly addressing only one aspect or certain finite aspects in focus) and thus further strengthens the point of the first linguistic observation.
Fifth, it is a sound pre-theoretic understanding (upon some folk reflection) that a person can successfully designate an object as a whole through a kind of communication link between that object and his/her current use of the referring name of the object, with his/her understanding that it is an object with its multiple attributes, even though he/she does not actually know (or psychologically imagine) exactly what (all of) its attributes are.

The preceding pre-theoretic observations are made without further giving a systematic elaboration via a theory of reference. The subsequent discussion is based on the foregoing observations, to which (it is hoped) the reader can agree with minimal reflection without relying on any systematic theoretic account of the double-reference character of people’s basic employment of language.

### 3.3. A Dual-Track Characterization of Relative Identity

In the preceding two sub-sections of this section, I respectively give a further explanation: <1> the shared relative-identity core of the two types of real-life relative-identity involved predication statements, via a theoretic account of identity simplex and identity complex, and <2> the double-reference phenomenon of people’s basic employment of language that constitutes the due starting point for real-life identity-predication statements and brings about the dual-track feature of relative-identity predication. With this further explanation, in this sub-section, I give an enhanced dual-track characterization of relative identity (sameness and difference), using the previous sample statements in section 2 for illustration.

**Case (A)**

(A.1) Biden is identical with (the same as) Trump regarding (being relative to) their shared attribute of being a USA President.

**Paraphrase into its dual-track presentation of relative-identity predication:**

Biden, via (being initially relative to) his specific-attribute aspect of being a USA President, is the same [being a USA President] as (identical with) Trump regarding (being further relative to) their shared general attribute of being a USA President that is manifested by Biden’s specific-part attribute of being a human.

**Its symbolized dual-track presentation:**

\[ \alpha [f] = [F] \beta \]

where \( \alpha \) and \( \beta \) are (singular) terms either as an individual < individual-object-identifying > constant [like ‘Biden’, ‘Smith’, …] < referring an individual object > or a definite description \( \iota \ast x \phi \) which refers to a unique object with \( x \) being an individual variable, \( f \) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \( \alpha \)), \( F \) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >. \(^{18}\)

\(^{18}\) In this and subsequent symbolizations via a predicate logic account, primitive vocabulary of its syntax is standard with the exception of definite description symbol \( \iota \); it is an expansion on the standard \( \iota \) operator that is semantically defined in a modified way: the semantics for the symbol ‘\( \iota \ast \)’ is different from but an enhanced expansion of the standard one for ‘\( \iota \)’ (signifying the uniqueness of the single one object as the referent of a definite description) so as to have it (in the predicate logic) more adequately capture how definite descriptions (descriptive noun phrases with unique referents) are used in our linguistic practice (in natural languages): a definite description as a noun phrase denotes either <1> an unique object or <2> a unique set of objects that meet(s) the description of the noun phrase.
Biden is not identical with Trump regarding (relative to) the attribute of being a former USA Senator that is possessed by Biden but not possessed by Trump.

[Or: they are different from each other regarding (being relative to) Biden’s specific attribute of being a former USA Senator which is not possessed by Trump.]

Paraphrase into its dual-track presentation of relative-identity predication:

Biden, via (being initially relative to) his specific-attribute aspect of being a former USA Senator, is not the same [being a USA Senator] as (identical with) Trump regarding (being further relative to) the general attribute of being a USA Senator.

Its symbolized dual-track presentation:

\[ \alpha_{[g]} \neq [G] \beta \]

where \( \alpha \) and \( \beta \) are (singular) terms either as an individual < individual-object-identifying > constant [like 'Biden', 'Smith', …] < referring an individual object > or a definite description \( \iota \star x \varphi \) which refers to a unique object with \( x \) being an individual variable, \( g \) (\( g \neq f \), given \( f \) above) is a term as a particular ATTRIBUTE-IDENTIFYING constant (referring to some specific-attribute aspect of \( \alpha \)), \( G \) (\( G \neq F \), given \( F \) above) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >.

The brown cat [the class collection of individual brown cats] is identical with the grey cat regarding (being relative to) their shared attribute of being a cat.

Paraphrase into its dual-track presentation of relative-identity predication:

The brown cat (the class collection of individual brown cats), via (being initially relative to) its individual brown cats’ collectively shared and individually possessed specific-attribute aspect of being a cat, is the same [having cat-ness] as (identical with) the grey cat (the class collection of individual grey cats) regarding (being further relative to their respective individual members’ shared general attribute of being a cat.

Its symbolized dual-track presentation:

\[ \alpha_{[f]} = [F] \beta \]

where \( \alpha \) and \( \beta \) are terms, each one as a definite description \( \iota \star x \varphi \) which refers to a < unique > subset < sort > with \( x \) being a sortal variable, \( f \) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \( \alpha \)), \( F \) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >.

The brown cat is not identical to the grey cat regarding (being relative to) the attribute of having brown color that is possessed by any member of the former but not by any member of the latter.

Paraphrase into its dual-track presentation of relative-identity predication:

The brown cat (the class collection of individual brown cats), via (being initially relative to) its individual brown cats’ collectively shared and individually possessed specific-attribute aspect of having brown color, is not the same [having brown color] as (identical with) the grey cat (the class collection of individual grey cats) regarding (being further relative to) the general attribute of having brown color, which are shared by any individual brown cats but not by any individual brown cats.

Its symbolized dual-track presentation:

\[ \alpha_{[g]} \neq [G] \beta \]

\(^{19}\) See footnote 9.
where \( \alpha \) and \( \beta \) are terms, each one as a definite description \( \iota x \phi \) which refers to a < unique > subset < sort > with \( x \) being a sortal variable, \( g \) (\( g \neq f \); given \( f \) above) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \( \alpha \)), \( G \) (\( G \neq F \), given \( F \) above) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >.

Case type (B):

(B.1) John is [is identical to and thus belongs to] a college instructor [the class collection of college instructors] regarding (relative to) the shared attribute of being a college instructor.

*Paraphrase into its dual-track presentation of relative-identity predication with its relative-identity simplex as the base layer of its relative-identity complex: < 1 > (at its implicit base layer of relative-identity simplex) John, via (being initially relative to) his specific-attribute aspect of being a college instructor, is the same [being a college instructor] as (identical with) any individual members of the class collection of college instructors regarding (being further relative to) their shared general attribute of being a college instructor that is manifested by John’s specific-part attribute of being a college instructor; and thus (< 1 > is based on or presupposed by) < 2 > (at its manifest layer of class-membership predication) John belongs to the class collection of individual college instructors.

The symbolized dual-track presentation of its base layer of relative-identity simplex:

\[ \alpha [f] \equiv [F] \beta \]

where \( \alpha \) and \( \beta \) are (singular) term either as an individual < individual-object-identifying > constant [like ‘Biden’, ‘Smith’, …] < referring an individual object > or a definite description \( \iota x \phi \) which refers to a unique object with \( x \) being an individual variable, \( f \) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \( \alpha \)), \( F \) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >.

(B.1)* John is not [is not identical to and thus does not belong to] a college instructor [the class collection of college instructors] regarding (relative to) John’s specific attribute of being graduated from Smith High School.

*Paraphrase into its dual-track presentation of relative-identity predication with its relative-identity simplex as the base layer of its relative-identity complex: < 1 > (at its implicit base layer of relative-identity simplex) John, via (being initially relative to) his specific-attribute aspect of being graduated from Smith High School, is not the same [being graduated from Smith High School as (not identical to) the class collection of college instructors regarding (being further relative to) the addressed general attribute of being graduated from Smith High School which is possessed by John (manifested by John’s specific-part attribute of being graduated from Smith High School) but not by any member of the class collection of college instructors, and thus (< 1 > is based on or presupposed by) < 2 > (at its manifest layer of class-membership predication) John does not belong to the class collection of individual college instructors.

The symbolized dual-track presentation of its base layer of relative-identity simplex:

\[ \alpha [g] \neq [G] \beta \]

where \( \alpha \) and \( \beta \) are (singular) terms either as an individual < individual-object-identifying > constant [like ‘Biden’, ‘Smith’, …] < referring an individual object > or a definite description \( \iota x \phi \) which refers to a unique object with \( x \) being an individual variable, \( g \) (\( g \neq f \); given \( f \) above) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \( \alpha \)), \( G \) (\( G \neq F \), given \( F \) above) is a term as a universal-attribute-identifying constant < referring to a general or universal attribute >.
(B.2) The brown cat [the class collection of brown cats] is [is identical to and thus belongs in] the cat [the class collection of cats] regarding (being relative to) their shared attribute of being a cat.

Paraphrase into its dual-track presentation of relative-identity predication with its relative-identity simplex as the base layer of its relative-identity complex:

\(<1>\) (at its implicit base layer of relative-identity simplex) The brown cat (the class collection of individual brown cats), via (being initially relative to) its individual brown cats’ collectively shared and individually possessed specific-attribute aspect of being a cat, is the same [being a cat] as (identical to) the cat (the class collection of individual brown cats) regarding (being further relative to) their respective individual members’ shared general attribute of being a cat, and thus \(<1>\) is based on or presupposed by \(<2>\) (at its manifest layer of class-inclusion predication) the sub-class collection of individual brown cats belongs to the class collection of individual cats.

The symbolized dual-track presentation of its base layer of relative-identity simplex:

\[\alpha_{[f]} = [F] \beta\]

where \(\alpha\) and \(\beta\) are terms, each one as a definite description \(\iota x \varphi\) which refers to a \(<\text{unique}>\) subset \(<\text{sort}>\) with \(x\) being a sortal variable, \(f\) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \(\alpha\)), \(F\) is a term as a universal-attribute-identifying constant \(<\text{referring to a general or universal attribute}>\).

(B.2)* The brown cat [the class collection of individual brown cats] is not [is not identical to and thus does not belong in] the cat [the class collection of individual cats] regarding (being relative to) the general attribute of having brown color which is possessed by any members of the former but not by any members of the latter.

Paraphrase into its dual-track presentation of relative-identity predication with its relative-identity simplex as the base layer of its relative-identity complex:

\(<1>\) (at its implicit base layer of relative-identity simplex) The brown cat (the class collection of individual brown cats), via (being initially relative to) its individual brown cats’ collectively shared and individually possessed specific-attribute aspect of having brown color, is not the same [having brown color] as (identical to) the cat (the class collection of individual cats) regarding (being further relative to) their respective individual members’ shared general attribute of having brown color, and thus \(<1>\) is based on or presupposed by \(<2>\) (at its manifest layer of class-inclusion predication) the sub-class collection of individual brown cats does not belong to the class collection of individual cats regarding (being relative to) the general attribute of having brown color which is possessed by any members of the former but not by any [all] members of the latter (because some of individual cats are not white).

The symbolized dual-track presentation of its base layer of relative-identity simplex:

\[\alpha_{[g]} \neq [G] \beta\]

where \(\alpha\) and \(\beta\) are terms, each one as a definite description \(\iota x \varphi\) which refers to a \(<\text{unique}>\) subset \(<\text{sort}>\) with \(x\) being a sortal variable, \(g\) \((g \neq f, \text{given } f \text{ above})\) is a term as a particular-attribute-identifying constant (referring to some specific-attribute aspect of \(\alpha\)), \(G\) \((G \neq F, \text{given } F \text{ above})\) is a term as a universal-attribute-identifying constant \(<\text{referring to a general or universal attribute}>\).

* * *

In sum, this essay has given a holistic re-examination of the semantic content and syntactic structure of the concept of relative identity through suggesting and explaining a dual-track-enhanced characterization of relative identity. This article has suggested and
explained an expanded and enhanced dual-track characterization of relative identity. It is expanded because its due coverage is not narrowly restricted to the equal-status case of identity statements (the symmetric case for identity simplex) but also includes the category-assimilating case (the asymmetric case for identity complex) both of which are unified by the shared semantic core content of relative identity. It is enhanced because it is intended to give a more refined characterization of relative identity for the sake of enhancing our understanding of the structure and content of real-life relative-identity statements in people’s basic employment of language in view of the relation between thought, language, and the world. It captures the characteristic dual-track feature of real-life relative identity: given an identity statement (either type), the subject referring term designates its semantic-whole referent while at the same time pointing to a certain specific aspect of it (thus being vertically relative to this specific-part referent), and then the designated subject referent is treated as being identical to (or with) another object regarding (being horizontally relative to) their shared general attribute. Based on the enhanced characterization of relative identity, this paper has examined two distinct types of identity-predication statements, one of which are not covered by the standard notion of relative identity: though with distinct syntactic structures, they are unified by the shared semantic core content of relative identity. The explanatory potency of the dual-track-enhanced characterization of relative identity is also examined: among others, it presents a distinct relative-identity-capturing perspective in looking at the deep semantic-syntactic structure of (a variety of) the general subject-predicate statements which demonstrate people’s basic employment of language. The paper also gives a modern-logic presentation of the dual-track-enhanced relative identity in distinct types of identity statements, which can be incorporated into the syntax and semantics of an expanded identity statements.

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