MIND AND BODY

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This paper was written in 1967, while the author was a visitor at M.I.T., and was circulated in duplicated form. It has been given little attention in the aboveground linguistic literature [its conclusions are cited in McCawley (1968a)], although the underground edition appears to have been fairly widely read, and it may have indirectly influenced some subsequent studies (such as Lawler, 1971, and Borkin, 1973) that have been concerned with pinning down exactly what the different occurrences of a "human" NP refer to (whether to the person, to his body, to his ideas, or to his influence as manifested through the actions of those to whom he gives orders). The version published here is that which was circulated in 1967, with some minor deletions and stylistic improvements, supplemented by annotations prepared by the author in 1974.

I. PHYSICAL AND MENTAL PREDICATES[a]

John weighs 150 pounds.

John is 6 feet tall.

John's temperatures is 98°

What do we mean by such sentences?[1] What is the object the weight, size, and temperature of which is being estimated?

The answer is obvious: John's body. Clearly, the word *John* serves in the above sentences as an abbreviation for the expression *John's body*.

John washed himself - John washed his body.

John saw himself in the mirror - John saw (the reflection of) his body in the mirror.

John lay on the floor - John caused his body to begin to lie on the floor.

To be sure, this abbreviation may be obligatory. But just as in the case of other obligatory transformations (e.g., deletions) the obligatoriness of the transformation does not prevent us from establishing a hypothetical deep structure different from the surface structure, so too the obligatory character of the abbreviation

John's (living) body ⇒ *John*

should not be allowed to obscure the real underlying structure. We do not use such sentences as

John's body lay on the table.

if John is alive. Nevertheless, the sentence is obviously about some relation between two material objects - a table and John's body.

Consider now some other sentences:

John loves Mary.

John has revolutionary ideas.

John believes that story.

Can we paraphrase these sentences by substituting for the word *John* the expression *John's body?* Evidently not. The conclusion is clear: the meaning, or rather the use, of the word *John* differs in the two series of sentences. In the first series, *John* refers to a certain physical object (John's body); in the second series, to a certain human individual, conceived of as a nonphysical entity.[b] To repeat, a nonphysical, i.e., neither a physical, nor a mixed psycho-physical entity. The expression *John's body* contains clear proof of this, for if John has a body, John can be neither a body nor a combination of a body and anything else.

The objection might be raised: but do we not say that John has a mind (*John's mind*)? Does this mean that in sentences concerning John's desires, beliefs, likes, and dislikes, the word *John* is again an abbreviation, this time an abbreviation for *John's mind*? Certainly not. "My attitude towards him is an attitude towards a soul. I am not of the

opinion that he has a soul" (Wittgenstein, 1953, p. 178).

> *John has a soul;*
> *Upon the whole*
> *The tombstone lies that says: hic jacet.*
> *But if John really has a soul,*
> *Who in the world is John who has it?*[2]

We cannot consider the expression *this man* as an abbreviation for *this man's mind* (or *soul*), because if we did, we would be compelled to admit that this man's mind means this man's mind's mind, and so on, ad infinitum. The word *mind* is not necessary in the postulated vocabulary of primitive semantic units; it can perfectly well be dispensed with.[c]

> *John's mind is an inquisitive one*
> = *John is inquisitive*
> = *John is disposed to ask questions*
>
> *John's heart is a sympathetic one*
> = *John is sympathetic*
> = *John usually feels sympathy for other people.*

One of the most controversial questions in philosophy is, can we ascribe states of consciousness - thoughts, feelings, memories, intentions, etc. - to the same entities to which we ascribe corporeal characteristics - height, spatial position, weight, etc.? From the semantic point of view it seems clear that we cannot. For in sentences about height, weight, spatial position, etc., the subject can be paraphrased according to the scheme *John* ⇒ *John's body,* whereas in sentences about thoughts and desires this is not possible. Such a radical difference in the range of possible paraphrases must reflect a radical difference in meaning. Therefore, the subjects of *John is dirty* and *John is kind* are different. "...It is certain that I (that is, my mind, by which I am what I am) is entirely and truly distinct from my body" (Descartes, "Meditation VI").

I disagree, for example, with the Katzian type of analysis, according to which the semantic counterpart of the word *man* is always a combination of the markers "human" and "physical object" (Katz 1966, p. 155). For in some sentences the word *man* refers only to a physical object (*The man was dirty*), while in others, it does not refer to any physical object at all (*The man believed the story*).

This same objection could be made to Strawson's view, according to which the notion of "person" is primitive, "person" being a peculiar primitive semantic unit to which both physical and mental predicates can be applied.[3] However, it is only in the surface structure of the sentences that both physical and

mental predicates apply to the same subject (*John is dirty - John is smart*); in the deep structure, physical and mental predicates are never coapplicable. The notion of person cannot be treated as primitive, since it is dissoluble into two elements, which can be spoken about separately and which are not mutually substitutable:[d] *John hates himself* cannot be rendered as *John hates his body*, nor *John hates his body* as **John's body hates John*.

II. SELECTIONAL RESTRICTIONS

"There are some predicates that can take only animate subjects (objects); there are some others that can take only inanimate concrete subjects (objects); there are still others that take only abstract subjects (objects)." Statements of this kind constitute the basis of a theory of selectional restrictions, advocated by, among others, Noam Chomsky. The verb *frighten*, for instance, is said to be allowed to take abstract subjects and animate objects, but not conversely. Combinability with animate subjects (objects) is claimed to be one of the important characteristics of verbs "in the base" by George Lakoff.

I disagree. I do not think that "selectional restrictions" of the kind exemplified above are a separate property of verbs that should be stated "in the base". The phenomenon of selectional restrictions in natural language is of an importance that can hardly be overemphasised, but in my opinion, this phenomenon has very little to do with *the boy's frightening sincerity*.

*John's hair is blond - *John's eyes are blond.*

*John's eyes are hazel - *John's hair is hazel.*

Here is a genuine example of a selectional restriction: *blond* means 'fair', 'light in color', but its use is restricted to hair (and recently, furniture); *hazel* means 'light reddish brown', but its use is restricted almost exclusively to eyes.

The restricted use of *blond* and *hazel* cannot be predicted on the basis of their meaning; therefore, it must be considered a separate property (superficial, not deep) of these words. Not so in the case of *frighten*. The restricted range of applicability of the word *frighten* can be predicted on the basis of its meaning.

To frighten means to cause someone to be afraid. Only an event can constitute the cause of something. Therefore, the word *frighten* opens in the sentence a slot for the specification of an event. This does not mean that an event (e.g., "someone's being sincere") is the deep subject of

frighten. It is not, because *frighten* is not a predicate. A genuine predicate is contained in the meaning of *frighten* (namely: 'to be afraid'). "Being afraid" is a mental predicate, therefore it may be applied only to human subjects (and to man-like animals, cf. Wittgenstein's revealing remarks). Since the verb *frighten* combines in its meaning a predicate, whose subject is stated separately (in the form of the surface object), and the concept of causality, it opens, as we have said, a slot for an event expression, i.e., for the combination of a subject with a predicate. By a very general transformation (which I will discuss below in Section VII) the sentence that indicates the cause of some event can be reduced to the bare subject or to the bare predicate. There is nothing more to it than that. So far, so good, it might be objected, but is it not necessary to give a list of predicates that take only human subjects anyway?

The point is that this list can be limited to a few simple elements ('to believe', 'to want', and a few others). The huge majority of mental predicates can be shown to be mere combinations of elementary mental predicates. Of course, combinations of mental predicates are also applicable only to human arguments - but that sort of selectional restriction is again predictable on the basis of the meaning. Here are some examples:

to hope	*to order*
to force	*to interest (in something)*
to convince	

All these verbs are applicable only to human (animate) objects. And indeed, how could they possibly be applied to anything else if their meaning contains an element of belief or desire?[e]

John hopes that X = *John expects and wants X*

John ordered Bill to do X = *John said to Bill that he (John) wants Bill to do X even if Bill does not want to do X in order to cause Bill to do X*

John forced Bill to do X = *Bill did not want to do X but he did do X because of something that John did in order to cause Bill to do X*

John interested Bill in X = *Bill began to want to know about X because of something that John did in order to cause Bill to want to know about X.*

John convinced Bill of X = Bill began to believe X because of something that John did in order to make Bill believe X

Consider also the following sentences:

John smiled at Mary.

John winked at Mary.

John was talking to Mary.

John wrote Mary a letter.

John nodded to Mary.

The word *Mary* cannot be replaced in the above sentences by an inaminate object. A selectional restriction? Yes, if one choses to call it so. But one fully predictable on the basis of the meaning.[4]

John smiled at Mary = John smiled in order that Mary might think that John...

John winked at Mary = John winked in order that Mary might think that John...

John was talking to Mary = John was talking in order that Mary might think that John...

The prepositions (*at, to*) function in the sentences under consideration as abbreviations for rather complex semantic structures, structures that contain the elements 'want' and 'think' and that therefore can only be applied to human subjects.[f]

Thus there are accidental, language-particular selectional restrictions and there are semantically motivated selectional restrictions. The two types of phenomena have nothing in common and should be most carefully distinguished.

A basic type of semantically motivated selectional restriction is those pertaining to predicates. The most important point here is that there are physical predicates and mental predicates; there are subjects to which physical predicates are ascribable and there are subjects to which mental predicates are ascribable. Tertium non datur.[g]

III. STATEMENTS ABOUT PERCEPTION

John saw a fox.

Who saw a fox - $John_1$ (John's body) or $John_2$ (the genuine

"John")? Is this a sentence about the man John or about a material thing, John's body (about "the inner John" or about "the outer John", as Augustine would say)? In a slightly different formulation, this same question has engaged philosophers for centuries.

> Denying sense to the attempt to think of feelings, sensations, emotions, etc. apart from a living organism may seem to be practically the same as denying disembodied mind altogether. Such a denial does not follow, nor has it historically always been held to follow. Aquinas, for example, believed that there were wholly disembodied intelligencies, but that they were not liable to any such experiences as seeing and hearing and feeling afraid and having a pain: the evil spirits in hell are tormented not by aches but by the frustration of their wicked wills... . Sensuous experiences are possible only in connection with a living organism... . Only since Descartes has the main problem become: "How is cogitatio related to bodily processes?" ("cogitatio" covering, for him, everything "in the mind", from a toothache to a meta-physical meditation); the old problem was rather: "How can a being that thinks and judges and decides also have sensuous experiences?" It was "intellectual" acts like judgment, not just anything that would now be called "consciousness", which seemed to Aquinas to be wholly incommensurable with events in the physical world; for him, "the unbridgeable gulf" was in a different place. (Geach 1957, p. 269)

This is one of the many philosophical problems that seem to stem from a lack of semantic analysis, in particular from confusion of the surface structure of sentences with their deep structure.

In my opinion, sentences about perception are compound sentences; in the deep structure (in Wittgenstein's sense) they contain a sentence about a man, another sentence about this man's body, and a third element (the exact nature of which constitutes a problem apart) that indicates the causal relation between the facts described by those first two sentences; i.e.,

John saw a fox = (1) *John had an image of a fox*

(3) *because*

(2) *John's eyes came into (indirect) contact with a fox*[5]

This is no more than a provisional formulation of the three semantic components involved.[h]

In light of this interpretation, the apparently contrary views of Aquinas and Descartes turn out to be fully compatible. We must agree with Aquinas, since the idea of a disembodied intelligence that senses and perceives is self-contradictory, and we must at the same time agree with Descartes, for since the notions of seeing and perceiving involve mental images, they cannot be wholly reduced to bodily processes. As Augustine says, "Homo interior cognovit haec per exterioris ministerium; ego interior cognovi haec, ego animus per sensus corporis mei".[6]

Of course, if the meaning of the verbs of perception includes the element of contact of the human body with some physical object, then we cannot "perceive" (in the basic sense of this word) any nonexistent states of affairs. Sentences like:[7]

I see that Jones is not here.

I see that they are going to have tea in the garden.

are clearly abbreviations:

Because of what I see I believe that Jones is here.

Because of what I see I believe that they are going to have tea in the garden.

As Bertrand Russell (1965, p. 70) says: "Suppose you are told: there is butter in the larder, but no cheese. Although they seem equally based upon sensuous experience in the larder, the two statements *there is butter* and *there is no cheese* are really on a very different level. There was a definite occurrence which was seeing butter, and which might have put the word *butter* into your mind even if you had not been thinking of butter. But there was no occurrence which could be described as 'not seeing the cheese' or as 'seeing the absence of the cheese'. You must have looked at everything in the larder, and judged, in each case, 'this is not the cheese'. You judged this, you did not see it; you saw what each thing was, not what it was not."

One last point I would like to raise here is the ambiguity of the word *I* in statements of perception. G. E. Moore (1959, p. 303) reports a valuable comment of Wittgenstein's on this question. "He was quite definite that the word "I" or 'any other word which denotes a subject' is used in 'two utterly different ways', one in which it is 'on a level with other people' and one in which it is not. This difference, he said, was a different in 'the grammar of our ordinary language'. As an instance of one of those two uses, he gave 'I've got a match-box' and 'I've got a bad tooth', which he

said were on a level with 'Skinner has a match-box' and 'Skinner has a bad tooth'. He said that in these two cases 'I have...' and 'Skinner has...' really were values of the same propositional function, and that 'I' and 'Skinner' were both 'possessors'. But in the cases of 'I have toothache' or 'I see a red patch' he held that the use of 'I' is utterly different."

Perhaps one amendment might be added to Wittgenstein's analysis. In the deep structure of the sentence *I have a toothache*, the word *I* occurs twice - in each of its two different senses.

I have a toothache = *I am in pain* (where *I* cannot be assigned any separate element of meaning, and is just a part of a complex expression of pain, a part of the "secondary pain behavior")[i]

because

something is wrong with my tooth

(*my tooth* meaning here *a tooth of mine = a part of this body)*

Therefore, strictly speaking, we should say that the word *I* has three, or even four different uses (to avoid the word "meanings"):

(1) In such sentences as *I am in pain, I believe..., I want..., It seems to me..., I imagine..., I* has no separate meaning by itself.

(2) In such sentences as *I believe in God, I am ambitious, I like Jim, I* means *this person*.

(3) In such sentences as *I am heavy, I am dirty, I am short, I* means *this body*.

(4) In such sentences as *I see..., I am walking,* etc. *I* is a shorthand abbreviation covering various combinations of the three previous senses (or rather covering various parts of sentences with the word *I* in its previously singled out senses)

IV. IDENTIFICATION OF PARTICULARS

I have been claiming that the subjects of *John is heavy* and *John is kind* are different. However, the function of the subject of a sentence consists in identifying the object to which a given predicate is ascribed. The way in which the word *John* fulfills its identifying function when used in referring to a living body rests upon demonstrative identification: we identify material bodies on the basis of their spatiotemporal relationship to our own bodies (cf., in this connection, the interesting analysis by Strawson). But how can a word identify anything (i.e., be the real subject in the deep structure) in cases when it does not refer to a physical body? Strawson (1959, p. 10) suggests the following answer: "Perhaps not all particulars are in both time and space. But it is at least plausible to assume that every particular which is not, is uniquely related in some way to one which is."

There can be no doubt that the only material (spatio-temporal) particular that can claim the role of a sign by means of which a human person can be identified is the human body. If for each person in the world there is exactly one body that stands in a special, unique relation to that person, the identification of the person can rest upon the identification of the body.[8]

This explains perhaps the oddness of the expression *John's body* in reference to a living human body. We learn the meaning of the word *John* (that man) by means of our having learned the meaning of the abbreviation *John* (that body). *That man* means for us the man whose body is that object there. For this reason, our ability to use the expression *that man* is often dependent on our ability to identify "that body". We would feel uneasy about saying *this man's body is heavy* instead of *this man is heavy*: the word *this* somehow already implies the body, because *this (person)* may be meant as *the person whose body is this*.

V. OWNERSHIP

The problem I want to deal with is basically not ontological, but semantic. What is meant by *John's body, this man's body? Man* (in the sense 'homo') is apparently a primitive; a "body" is some kind of "thing" (*thing* being a primitive). But what is the relation between a man and his body? What do we mean by saying that this is his body? The naive answer (yet one that has been given by many philosophers) runs as follows: *John's body* means that John has this body, that he owns this body. But what does *to have* or *to own*

mean? V. Rosenveig, in his semantic analysis of the vocabulary of possession, takes the meaning *to own* as indefinable (primitive). The same position was taken recently by E. H. Bendix (1966), in his comprehensive analysis of different uses of the verb *have*. Is this solution inevitable? The primitiveness of the notion of ownership seems to me dubious. I would suggest the following as a possible line of analysis:

X owns Y = *X has the right to do with X what he wants to*

Y belongs to X = *people (the society) want X to be able to do with Y what he wants to.*

John has a car = *there is a car that John "is free" to do what he wants with*

= *there is a car that people (the society) want to depend on John's will*

= *there is a car that people (the society) want to have happen to it whatever John wants to happen to it.*

If this analysis is essentially correct, the notion of "ownership" cannot be applied exactly to the relation between a man and his body. First, because the dependency of the human body on the will of the human person is not due to any social contract. Second, because the sentence *There is a body that John owns* would be nonsensical (in Wittgenstein's sense of a sentence being nonsensical) just as the sentences *John was born, John was the son of his mother* are nonsensical.

We learn to single out a particular man, we learn to be able to speak of him at all by virtue of his having a body. Therefore we cannot predicate of him that "he has a body". The relation that holds between a man and his body is not suited to be a predicate. Nonetheless, the relation holding between a man and his body does resemble somewhat that of ownership: this ownership rests on dependency, on the permanent possibility of causal relationships between someone's will and some changes affecting the owned object. Now, the dependency of states of the human body on the human will is crucial for the relation "that man - that man's body" (cf. Plato's idea,

admirably expressed in "Alcibiades", of this man = the user of this body). "My body" is the body (thing) which "is at my disposal" (= with which I do what I want).j

VI. MIND-BODY INFLUENCE

Let us examine some linguistic facts.

John enlarged the hole in the wall with the knife.

What is the deep structure of this sentence? When we look at it more closely we find several underlying sentences.[9]

The hole in the wall began to be larger than it had been before

because[10]

the knife... (came into contact with) the wall

because

John (John's body)... (did something with) the knife

because

John wanted it

Thus we are presented here with a whole series of causally connected events: John's will causes (a part of) his body to move, the movement of John's body causes the knife to come into contact with the wall, the contact of the knife with the wall causes the hole in the wall to become larger.

John opened the door with the hammer

= the door opened (= began to be open)

because

the hammer... (came into contact with) the door

because

the hammer moved (= changed its place = began to be in a different (= not the same) position from what it had been before).

because

John's body moved

because

John wanted (his body to move)

because

John wanted the door to be open

The instrumental adverbial always conceals in itself the subject of a separate sentence, with a specified or unspecified predicate (*John broke the window with a hammer* versus *John broke the window with a blow of a hammer*) and an exponent of causal relationship (*because*).[11] In almost all sentences that contain a verb of activity, there is a syntactic position[12] (open slot) for the instrument of the action; an instrumental adverbial can be inserted.

John killed the rabbit (with a knife).

John wrote a letter (with a pen).

John moved the pillow (with his foot).

The one exception to this pattern are sentences of the type:

*John stretched himself out on the carpet *with...*

*John sat down *with...*

*John got up *by means of...*

*John walked *by means of...*

With what? By means of what? Of nothing. Directly - by his will.

It is scarcely necessary to argue that verbs like *sit down, get up, walk,* etc. are semantically not less "transitive" than *seat, raise, carry, send,* etc. (Incidentally, *seat* does not mean, as is often said, *cause to sit;* if we were to define *sitting down,* after Webster, by means of "to rest upon the haunches", then the difference between *sitting* and *seating* should rather be stated as *to sit* = 'to cause one's own body to rest upon the haunches', *to seat* = 'to cause someone else's body to rest upon the haunches'.) Verbs like *sit down,* simply contain their object in their own meaning, this object being uniquely specified: one's own body. (We say "object", but what is actually contained in the meaning of these verbs is the subject of another underlying sentence, i.e., the sentence that describes the fact caused by the will of the person whose name constitutes the subject of the first underlying sentence.)[13]

Now when the object of volitional causation (the subject of the caused event) is one's own body, the sentence describing such an event cannot contain any instrumental syntactic position; the human body is the only thing (physical object) in the world the states of which can be caused directly by the will of the person who "owns" that body. It is this absence of any instrumental position in sentences about states of the body caused by the will that indicates that we are touching here the very heart of all philosophy:

"the meeting place between mind and matter".[14] "Imperat animus ut moveatur manus, et tanta est facilitas ut vix a servitio discernatur imperium: et animus animus est, manus autem corpus est" (Augustine, Book 8, Chapter IX).

Let us consider briefly the related question of whether anybody's mind can be directly influenced by some other mind.

John informed Bill of it (by a letter).

John convinced Bill of it (by means of a diagram).

John interested Bill in it (by means of a book).

However:

*John decided to do it (*by means of...)*

*John adopted Bill's view (*by means of...)*

*John rejected Bill's view (*by means of...)*

The only person in the world whose states (beliefs, intentions, etc.) you can influence directly is yourself. When the object of volitional causation (the subject of the caused event) is oneself (the person who causes anything by his will) the sentence describing such an event can not contain any instrumental syntactic position.[k]

VII. BODY-MIND INFLUENCE

John kissed the wall.

John kissed the ground.

John kissed the rock.

are perfectly good sentneces. However:

**John kissed the house.*

**John kissed the room.*

**John kissed the island.*

are bad sentences. To kiss something means (contains in its meaning) to press one's lips to something. If you are pressing your lips to a wall, to the ground or to a rock, you are only making contact with a part of the given wall or rock; nevertheless, a part of a rock, a wall or the ground is still called *wall*, *rock*, and *ground*; therefore, you can be said to be kissing a wall, a rock, or the ground. But a part of a room is not a room, nor a part of a house a house; therefore, you can not be said to kiss them. Probably, the size of the object in question is also relevant; if you kiss a reasonably small object, your lips can be considered to come into contact

with almost the whole of the object in question. So far so good. But consider the following sentences:

John kissed Mary's hand. *John kissed Mary.*

John patted Mary's shoulder. *John patted Mary.*

A part of Mary is not Mary; you cannot kiss (press your lips to) Mary's body (as a whole), you can only kiss a part of Mary's body. So we would rather expect the sentence *John kissed Mary* would be just as unacceptable as **John kissed the house*. But it is not. Notice also the difference:

John gave Mary a kiss (a pat, a stroke, etc.)

but

**John gave the table a kiss (a pat, a stroke, etc.)*

Consider other facts.

John kissed Mary's hand. *John kissed Mary on the hand.*

John patted Mary's shoulder. *John patted Mary on the shoulder.*

However:

John kissed the top of the table. **John kissed the table on the top.*

John patted the leg of the chair. **John patted the chair on the leg.*

How can we account for this difference?

One more curious little fact. Imagine John's father is dead, and his body is lying in an open coffin.

John came to the coffin and kissed the cold hand of his father.

This is acceptable. But:

*John came to the coffin and *kissed his father on the hand.*

The construction *to kiss* (*pat*, *hit*, *lick*, etc.) *on the hand* (*cheek*, etc.) is evidently only possible when referring to living persons. Why?

Another puzzle. *To kiss* means (or in any case contains in its meaning) 'to press one's lips to'.

John kissed the wall = *John pressed his lips to the wall.*

John kissed Mary's hand = *John pressed his lips to Mary's hand.*

But:

*John kissed Mary = *John pressed his lips to Mary.*

To stroke something means (or contains in its meaning) 'to move gently one's hand on something'.

John stroked the book = John gently moved his hand on the book.

John stroked Mary's shoulder = John gently moved his hand on Mary's shoulder.

But:

*John stroked Mary = *John gently moved his hand on Mary.*

What is the matter? It is obvious that there exists a whole complex of peculiarities restricted to sentences concerning the human body. Essentially the same peculiarities hold for Polish, Russian, French, and several other languages. Are these features universal? And if so, are they semantically determined, i.e., are they determined by some semantically motivated peculiarities of the deep structures of sentences referring to the human body? I would argue that such is the case.

In *John kissed Mary* the word *Mary* does not alternate with other objects of kissing such as *the book, the wall,* etc. (*John kissed the book, the wall,* etc.). In the sentence *John kissed Mary,* the position of object[15] is unoccupied; hence, an object can be inserted: *John kissed Mary - on the cheek*. The object position is occupied in the latter sentence by *on the cheek* and not by *Mary*. The fact that an expression such as *on the cover* cannot be inserted into the sentence *John kissed the book* is connected with the fact that in this sentence the object has been specified already (*the book*). Despite their formal differences, the functionally parallel elements are *on the cheek* and *the book,* not *Mary* and *the book*.

John kissed (Mary) on the cheek.

John kissed the book.

Notice that **John kissed the cheek* would be a deviant sentence. It is another interesting fact, which we cannot go into now, that we never speak about living human bodies without reference to the "owners" of these bodies. What is important here is that we should postulate for the deep structure of the sentence some indication of the "owner".

John kissed (Mary) on the cheek = *John kissed (Mary) on Mary's cheek*

= *John kissed Mary's cheek.*

The above considerations lead us to a rather unexpected conclusion that in the two sentences

John kissed Mary on the cheek.

John kissed Mary's cheek.

the role of the word *Mary* is different. In the second sentence *Mary* is a modifier, indicating the "owner". But what is it in the first sentence? I would argue that it is the subject of another sentence, the predicate of which is unspecified, connected with the sentence about John's kissing by a causal conjunction (*because*):

John kissed (hit, patted...) Mary on the cheek

= *John kissed (hit, patted...) Mary's cheek, and consequently, Mary...*

Thus, language reflects the common belief to the effect that whatever happens to the human body ("happens" in the sense of "physicially happens", "affects", the latter expression referring first of all to the contact of the human body with any other physical object) can be the cause of some new state for the human person. Again, the human body is the only physical object in the world the states of which can directly cause something for the human person.

The state of a dead human body cannot cause any state in the human person (the owner of that body). This fact could perhaps even serve as a definition of the notion of death; this explains why the sentence:

**John kissed his dead father on the hand.*

is deviant.

But to explain all the facts, the analysis must be taken a little further. Consider again:

John kissed Mary's hand - *John kissed Mary on the hand.*

John pressed his lips to Mary's hand - **John pressed his lips to Mary on the hand.*

In order to account for the above facts we have to establish which part of the sentence is responsible for the semantic element of causality. Perhaps it is the verb itself that serves as the bearer of this element?

to kiss $\underline{X}$ = *to press one's lips to* $\underline{X}$ *(causing by that...)*

to stroke $\underline{X}$ = *to gently move one's hand on* $\underline{X}$ *(causing by that...)*

The part of the meaning indicated in brackets is realized only on condition that some being is indicated who may be the subject of the state of affairs that is brought about by the action. Nothing like that (... causing by that something for *X* ...) is included in the meaning of such expressions as *to press one's lips to, to gently move one's hand over,* etc.[16,1]

In support of this possibly bizarre-sounding analysis, one might cite further examples from the huge range of unspecified predicate phenomena in language, especially where the immediate context contains the semantic element of causality. When the content to be conveyed has the structure:

S_1P_1 *(at* t_1*)* *because* S_2P_2 *(at* t_2*)*

(some subject S_1 has at the time t_1 the property P_1 because some other subject S_2 has had at the time t_2 the property P_2), then one of the predicates (P_1 or P_2) very often becomes unspecified, and at the same time the semantic element *because* gets "hidden" in the verb that serves as the formal exponent of the other predicate. A few examples may help to clarify this point.

John surprised Bill = *Bill was surprised because John did something (had some property* $\underline{X}$*)*

John was mad at Bill = *John was mad because Bill did something (had some property* $\underline{X}$*)*

John killed Bill = *Bill died because John did something*

John was frightened by Bill = *John was frightened because Bill...*

And in general:

S_1P_1 *because* S_2P_2

= S_1P_1 *because of* S_2P_2

= S_1P_1 *because of* S_2

= S_2P_2 *caused* S_1P_1

= S_2 *caused* S_1P_1

John was surprised because Bill had escaped

= *John was surprised because of Bill's having escaped*

= *John was surprised because of Bill*

= *Bill's escape surprised John*

= *Bill surprised John*.

To refute this analysis, another interpretation must be proposed that would account for the facts in an equally simple or simpler way. One such alternative proposal might be: *To kiss X* does not mean simply 'to press one's lips to X' but 'to press one's lips to X because of certain feelings toward X'; *to stroke X* does not mean 'to move one's hand gently on X', but 'to move one's hand gently upon X because of the feelings toward X'. Indeed, when in the course of some technical activity the worker has to press his lips to some part of some mechanical device or to gently move his hand about that device, we would hardly call that *kissing* or *stroking*. Accordingly, it might be argued, *to kiss Mary on the cheek* must mean 'to press one's lips to Mary's cheek because of one's feelings toward Mary', *to stroke the child on the head* must mean 'gently move one's hand on the head of the child because of one's feelings toward the child' and *to kiss the Bible* (or the *ground*) must mean 'to press one's lips to the Bible (or to the ground) because of one's feelings toward the Bible (or the ground)'. Thus, the presence of an additional argument (the name of the human person, besides that of the human body) in the sentence *John kissed Mary on the cheek* is accounted for and there is no further need to postulate a separate sentence of the type *something happened to Mary* in the deep structure.

Perhaps the verbs *kiss* and *stroke* do contain a semantic component 'because of feelings toward'. But all the same, the presence of such a component is not the genuine reason for the "human argument" (*Mary*) to appear in the sentences under consideration. Here is the proof or what seems to me to be a proof:

Mary hit herself on the forehead.

Mary happened to scratch herself on the forehead.

The two syntactical positions of physical object (the human body) and human person are also present in sentences where the semantic element of "because of feelings" is out of the question. My scheme of semantic analysis - to come into contact with a human body causing by that something for the human person, "the owner" of that body - seems to provide an explanation for

all the observed facts.[m]

NOTES

[1]The semantic conception underlying this paper stems from Andrzej Bogusławski (see Bogusławski, 1966). The other people whose influence I am most conscious of are Igor Mel'čuk, Holger Sørensen, Uriel Weinreich, and Aleksandr Žolkovskij.

[2]This verse is borrowed from Anscombe and Geach (1963), p. 39.

[3]See Strawson (1959), Chapter 3 ("Persons").

[4]See in this connection the analysis of the notions "meaning", "sign", "signify" in Bogusławski (1966), p. 12.

[5]Strictly speaking, the sentence *John saw a fox* means that John had the mental image of (the appearance of) a fox, because John's eyes came into contact with reflected light, the cause of the given characteristics of the light being, in turn, its contact with a fox. Similarly, *John smelled the roses* means 'John had the mental image of a smell such as that produced by roses, because John's nose came into contact with some odorous substances in the air, the cause of which was roses'. *John heard the barking dogs* means 'John had the mental image of such sounds as those produced by barking dogs because John's ears came into contact with vibrating air, the cause of which was the contact of that air with the barking dogs', etc.

A different use of the verbs of perception is involved when they convey only the first semantic component, that of the mental image alone ("to see in a dream", "in imagination", "with one's mind's eye", etc.).

[6]Augustine, "Confessions" Book 10, Chapter VI.

[7]I take these sentences from Warnock (1965, p. 61-62), who cites them in support of his rather surprising view that it is not only visible objects that can be literally seen.

[8]For an argument in favor of this view, see Ayer (1965).

[9]The dissolution of the meaning of verbs of activity into three components - the person's will, the causal relation, and some change in the world - *(John lay down on the floor = John's body began to be lying on the floor because John wanted it)* has been advocated by Andrzej Bogusławski. But the majority of linguists and philosophers regard "activity" as a primitive semantic element. As a counterpart for "activity" another "elementary" semantic element particularly in vogue in recent linguistic publications in America is that of "stativity". In my view, "stativity" is a fictitious notion. If we are prepared to call the combination of anything with its cause (or causation of anything by the will) "activity", then everything that does not fit into this scheme can be called a "stative" if we so desire, but all that this proves is that a special concept of "stativity" is completely superfluous and, more than that, misleading.

[10]I disagree with those who, like Lakoff and Ross, consider the semantic element of "cause" to be a predicate and consequently, an element constituting a separate sentence in the deep structure.

First of all, the relation between two events is, semantically, never a predicate. A predicate is always a property of an (a group of) object(s), not of an event. This point is of great importance, and I will therefore dwell on it a little longer.

In *I beat my wife in the yard* (Lakoff's example) *in the yard* is not a predicate ascribed to the event "I beat my wife". To say that it is the event that takes place in the yard is only an abbreviation for saying that the people involved in the event are in the yard when the event takes place.

I beat my wife in the yard = When I beat my wife, we/me and my wife/ are in the yard.

Furthermore, *being in the yard*, no matter to what it is ascribed, is not a predicate at all:

I am in the yard = I, the yard - are in contact (touch one another),

only the *being in contact* constitutes a genuine predicate.

I am aware that in claiming that an event cannot constitute the subject of any sentence and that, consequently, a relation between two events cannot be conceived of as a predicate, I am taking a position that was expressly attacked by, for example, Reichenbach (1966, p. 301-317). However, I feel it is necessary to reject Reichenbach's famous "higher

functions calculus" in its application to natural language. It seems to me that in postulating it, Reichenbach, the pioneer of deep structure analysis, let himself be led astray by surface structure.

Reichenbach is no doubt right when he argues that in the sentence *John drives slowly* the world *slowly* cannot be considered an independent function (a predicate) of the argument *John*. But this does not necessarily entail that the adverb is here the predicate either of the property (driving) or of the fact (John's driving). We would be compelled to accept Reichenbach's alternative (the adverb is either a modifier of the predicate or a modifier of the sentence) only if we adopted his tacit assumption that semantic concepts (subjects, predicates) correspond to the words in linguistic expressions. Very few linguists would be willing nowadays to adopt such an assumption.

I propose the following semantic analysis (considerably simplified in respects that are not relevant here) for the sentence *John drives slowly:*

John drives (cars) slowly = When John causes a car (or whatever he may drive) to change its location [to be in successive moments in different (not the same) places], the time intervals between the car's being in successive places are long (longer than in the majority of cases of other people's driving cars).

If the above line of analysis is correct (I would stake a good deal less on the details), one immediate consequence is that the adverb *slowly* is not a predicate at all, but simply some sort of time adverbial. And neither Reichenbach nor I would be willing to consider a time adverbial as a predicate.

Another example analyzed by Reichenbach in support of his higher functions calculus is *Annette dances beautifully*. I cannot go very far here into the analysis of that sentence; perhaps it will suffice to indicate the line of interpretation along which Reichenbach's conception can be refuted. The real subject of *beautiful* is "me" (the speaker), *X is beautiful* meaning roughly 'I approve of X', 'X is as I want it to be'. (Wierzbicka, 1975b)

One type of adverb has been shown by Lakoff, (1968a) to form predicates of particulars (*The tailor fitted me carefully = the tailor was careful in fitting me; John sharpened knives cautiously = John was cautious in sharpening knives*).

Let us return to our initial problem of causality. Reichenbach is consistent in calling causality a "fact function" (predicate of facts). But since in the deep structure of sentences no fact functions exist, the causality cannot be a predicate either. The semantic element "because", which connects two sentences, does not form a part of either of them. Not being a predicate, it cannot constitute the basis of a third sentence either (if we agree to reserve the term "sentence" for a modally characterized combination of a subject and a predicate). Once more traditional grammar appears to have been right, this time in treating the element "because" on a level with other conjunctions - "and", "but", "so", etc. - which are not predicates at all.

[11]In cases when the verb *use* can be substituted for the instrumental adverbial, this complement conveys not only a causal content, but also the notion of purpose.

John opened the door by means of a knife

= *the door opened*

because

the knife came into contact with the door

because John's body came into some contact with the knife

because John wanted it

because

John wanted the door to open.

In general:

John used the knife to open the door

= *John did something with the knife (caused something to happen to the knife and the door) because he wanted the door to open.*

The analysis of the concept of purpose into someone's will plus causal relationship (*in order to = because he wanted to*) has been proposed by A. Bogusławski (1966). George Lakoff advanced the same idea during classes at Harvard in 1966.

[12]For the notion of syntactic position, see Karolak (1966).

[13]Semantically, the notion of the "object" is senseless (or at least superfluous); the object of an action is simply

the subject of some state of affairs that (the state of affairs) is caused by some other state of affairs. But of course there is no semantic common denominator for the object in this sense and the objects of other so-called transitive verbs. Semantically, there are subjects (sometimes compound subjects, e.g., ordered pairs, as in the case *A is to the right of B*), and there are properties - predicates. Elements that are suitable as subjects of sentences are not suitable as predicates, and vice versa.

[14]This expression has been borrowed from Viscount Samuel.

[15]Again, I am using here the term "object", "object position" only for the sake of brevity and in accordance with the common usage. The actual situation is that the meaning of such verbs as *kiss, lick, hit, tap,* etc. contains the predicate of *touching* (being in immediate physical contact). The property of being in contact can be ascribed only to a pair (a group) of objects; the subject of this property cannot be one single entity. Hence, if a sentence the content of which contains the element of *touching* refers explicitly to only one entity, another entity must always be implicitly given (contextually reconstructable).

[16]On the other hand, when such unusual expressions as *to press one's hand on someone*, do occur, they seem to imply immediately some kind of hidden effect for the touched person; recall biblical narrative, with its frequent references to "Jesus laying his hands upon people".

1974 COMMENTS

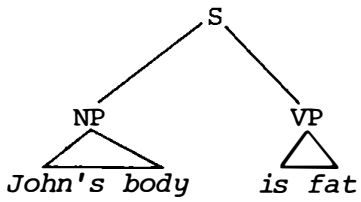
[a]In the course of the eight years that have passed since this paper was written, my views on many points discussed here have changed. Nonetheless, I am still in substantial agreement with its main tenets; I believe it asks the right type of questions, and I still adhere to the framework within which questions of this type can be asked. This framework is briefly described below; for a fuller discussion, see Wierzbicka (1972).

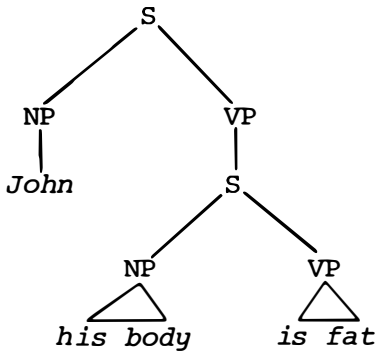
Every natural language contains a subdomain that can be used as the language of semantic representation for the natural language in question. This subdomain reflects in an isomorphic way the universal and nonarbitrary lingua mentalis - the language of human thought; sets of indefinable expressions to be found

in every natural language correspond to universal semantic primitives that can be thought of as lexical items of the mental language, or "atoms of thought". Proper semantic representation consists in paraphrase into these indefinable expressions drawn from natural language; no artificial symbols, "features", "markers", "abstract elements", labels, or indices are acceptable.

At the time of writing "Mind and Body", I had a few candidate primitives vaguely in mind, but I had not prepared even a tentative set. Since then, I have established what I believe to be the universal set (*I*, *you*, *this*, *something*, *someone*, *world*, *past*, *become*, *want*, *don't want*, *think*, *say*, and *imagine*), and I have found that some of my 1967 candidates are not among them. However, the main point of the paper - the argument in favor of distinguishing between "someone" and "something" as irreducible semantic units - seems to me valid. I also remain in agreement with the claims concerning the syntax of semantic representation, in particular with the thesis of the notion of "object" is irrelevant to deep syntax, and that the only categories that are relevant are those of subject and predicate. (For further discussion, see Wierzbicka, (1975a, 1975b).)

[b]It seems clear that speaking about a person is not the same as speaking about a person's body. A human body may be six feet long, weigh fifteen stone, have this or that shape, color, temperature, or smell even after the death of its "owner". Nonetheless, it seems to me now equally clear that when we speak of the body of a living person, we usually do intend to say something about the person as well. When we say, for instance, *John is fat* we are saying something about John's body, but at the same time we are also saying something about John. The sentence *John's body is fat* appears to be semantically included in, rather than identical with the sentence *John is fat*. We indirectly characterize the person by saying something about his body. Schematically:



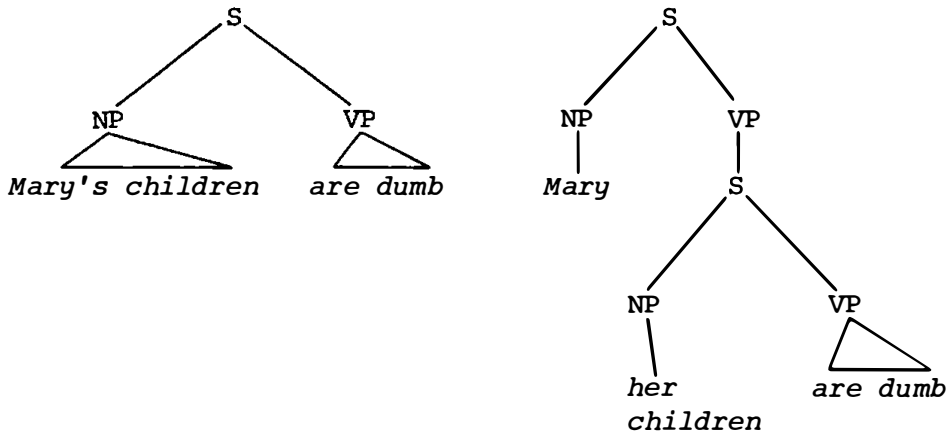


Similarly, two sentences of the type

Mary's children are brilliant (dumb).

Mary has brilliant (dumb) children.

are not synonymous, the second, but not the first, being a sentence about Mary.



This sort of mediated predication is faithfully reflected by surface structures that contain so-called "dislocated noun phrases", e.g., *Rudolf, women just can't resist him.* I believe that the supposed transformation of "dislocation" cannot be claimed to both exist and be meaning preserving. (See Wierzbicka, 1969.)

[c] I do not think that this paraphrase is exact (or for that matter that any other paraphrase given in this paper is exact), but that seems to be irrelevant from the point of view of the arguments involved.

[d] I should have said that the notion of person (better, "someone") is indeed primitive, but not Strawson's "person" to which both physical and mental predicates can be applied. Only mental predicates can apply to persons; physical predicates are restricted to those person's bodies.

[e] For a fuller discussion of the meaning of words for emotions and words for different speech acts see the chapter entitled "Acts of Speech" in Wierzbicka (1972).

[f] Clearly, the analysis of the meaning of the prepositions in *smile at, wink at,* or *say to* proposed here is not quite

satisfactory. I tried to improve on it in Wierzbicka (1972), where I argued for the presence of the element "you" somewhere in the meaning of all communication expressions. But I still do not have what I would consider a fully satisfactory formula to express this intuition. (For further discussion of this point see Wierzbicka (1974).

[g]Today, I am inclinded to think that the "tertium non datur" claim was in fact too strong. Perhaps there are objects to which both physical and some mental predicates can be ascribed. In particular, I tend to believe that in the deep structure of sentences about perception, "saying" is ascribed to objects like eyes, ears, nose, etc. (*My eyes tell me that...* versus *My eyes are shut*). (See Wierzbicka, to appear.)

[h]In more recent work (Wierzbicka, to appear), I have suggested a different analysis for words of perception, based on the idea that in perception various parts of the body "tell us" something, e.g.,

I see that there is no cheese left

= *because of what my eyes say, I say that there is no cheese left.*

[i]For a different analysis of bodily sensations, see Wierzbicka (to appear).

[j]In Wierzbicka (1975a), I have argued for a different semantic interpretation of the concept of "body", based on the idea that a person's body is a material sign of this person. In particular, I have proposed the following way of accounting for the relationship between "body" and "soul":

John's body = *the something that is a part of the world and that can be thought of as John.*

John's soul = *the something that is not a part of the world and that can be thought of as John.*

[k]For further discussion of action sentences see Wierzbicka (1975a).

[l]The concept of "unspecified predicate" seems to me now unsatisfactory. I have attempted to replace it with an explicit semantic representation in Wierzbicka (to appear).

[m]An interesting objection to my interpretation of these facts has been raised by Apresjan (1971). If sentences like *John kissed Mary on the hand* and nonsentences like **John kissed the book on the cover* point to an implicit assumption about the interaction between mind and body, then what of sentences (perhaps not very common but certainly acceptable) like the following:

Voz'mi kreslo za spinku, a ja voz'mu za nožki.

'You take the chair by its backrest and I'll take it by the legs.'

The answer to this question probably lies concealed in the difference in acceptability between Apresjan's sentences about inanimate objects and those discussed by me. Why can we say *voz'mi kreslo za nožki* but not *poceluj kreslo v spinku* 'kiss the chair on the back'? Apparently, by moving the chair's back one causes something to happen to the chair as a whole, whereas by kissing the chair's back one does not - at least in the view of ordinary speakers, as manifested by ordinary language. Evidently, ordinary speakers treat it as quite possible for someone to do something (to cause something to happen) to an object by doing something (causing something to happen) to a part of this object; but they do not believe that every time when one does something to a part of an object one causes something to happen to the object as a whole - far from it. The deviancy of a sentence like **John kissed the chair on the back* shows that from the point of view of an ordinary speaker, one does not cause anything to happen to a chair by kissing a part of it. Apparently, the same applies to human bodies, as shown by

**John kissed the child's body on the forehead.*

But with respect to persons, the situation is different. From the point of view of ordinary speakers, by kissing a part of someone's body one does do something to this person:

John kissed the child on the forehead.

Sentences about animals, also pointed out by Apresjan, do present a problem. It seems clear, however, that in a sentence like

He stroked the beetle on the back.

the speaker treats the beetle in question in a somewhat anthropomorphic way; the person stroking the beetle's back is thought of as doing something to the beetle, i.e., to a creature that has a body rather than is a body. Can a beetle be called "someone" rather than "something"? I think not; in ordinary language, people do not use the word "someone" referring to animals. Nonetheless, when we speak of an animal's sensations, feelings, or volitions we do seem to mentally compare it to a sensing, feeling, or wanting person. Semantically, the problem is really how to relate the concept of "animal" to those of both "something" and "someone", without reducing it to either. Limitations of space, as well as of my understanding, prevent me from pursuing this problem here any further. For further discussion see the chapter entitled "On semantics of sentences about animals" in Wierzbicka (1971).