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A NOTE ON THE SEMANTICS OF BODY PART MOVEMENTS

In global locomotory movements (*John sat down, John ran*) the subjects of the verbs *run, walk, sit, get up* etc. 'can be viewed as affected by the verb activities' and therefore in many languages such verbs are shaped in the reflexive form (Saksena 1980.822).¹ Pauliny holds that in these sentences the agent, being affected by his action, is also the patient of the action.²

As opposed to global locomotory movements, body part movements do not encompass the whole body, but only its part(s): *He moved his hand*. In the light of the above facts, the body part, taking the position of the object in this sentence, appears as the patient affected by the agent's (person's) action.

Given the situation that the subject (*He*) and the object (*his hand*) are coreferential (cf., e.g., Fox 1981), the question arises whether body part movements are instances of actions whose effects pass over (are 'transferred') from the agent (the person) to the patient (the body part). In other words, the following question is posed: in what way can a dynamic transition from the person to his/her body parts in body part movements be specified?

I will take into consideration only those grammatical constructions in which the position of the subject is taken up by the person and the position of the object by his/her body part(s) (*He moved his hand*), and those in which the subject position is taken up by the body part(s) (*His hand moved*). I will not take into consideration such constructions as denote physical contact with any other object in the outer world (*He put his legs on the table, He turned the stone with his left hand*).

Unless convenient, I will not work with the dichotomy 'intentional movement' versus 'unintentional movement', since the attribute 'intentional' (or 'volitional') allows only of its opposite concept, i.e. 'unintentional' ('nonvolitional'); the mere bipolarity does not cover body part movements adequately. Instead, I will work with the concept of an impulse mentally processed to varying degrees. By 'impulse' I understand the initiation of an action by giv-

1 On this see also Fox (1981.331-2) and Longacre's 'reflexive case-frames' (Longacre 1976.81-4).

2 Cf. the sentence *Her dress swung as she moved her body*.

ing a nervous (i.e. in neurophysiological terms) command. The impulse instigating body part movements can be specified as mentally processed to a varying degree; or it does not have to be processed at all (cf. Kudrnáčová 1996).

I

Transition is implied in both the concept of transitivity and of causativity (Lyons 1978.511). Transitivity is traditionally defined as a property of the type of verbal action in which the activity 'passes' from the agent to the patient. Also the notion of causativity is associated with 'motion from a source to a goal' (Lyons 1978.511).

Miller and Johnson-Laird (1976.475) define causative verbs as those that 'express a relation between two events, the first of which is something that an agent does, the second an event that his action causes'. Thus *raise* in *He raised the car* is a causative verb, whereas *rise* in *The car rose* is a noncausative verb, even though the sentence *The car rose* 'can be used to describe the same event'. According to Chafe, the sentence *Harriet broke the dish* represents 'action' + 'process'. 'As a process it involves a change in the condition of a noun, its patient. As an action it expresses what someone, its agent, does' (Chafe 1970.100). Thus we can ask: "What did Harriet do?" - She broke the dish. "What happened to the dish?" - Harriet broke it.

In the light of what has been said so far let us now have a look at the semantic roles of the person and his/her body parts in sentences expressing body part movements (*He raised his hand*). Let us assume that the person can be assigned the semantic role 'agent'. Then we can ask "What did he do?"

We are now faced with the problem of defining the semantic role of the body part. If we were to define it as 'patient', we would encounter problems. The question "What happened to/with the hands?" is not appropriate. The reason lies in the fact that it is in the hand that the contraction of muscles is carried out; in other words, it is the hand that accomplishes the movement. In this sense the body part is not 'affected'.

Still, the question "What did his hands do?" is not appropriate either. It must be borne in mind that the contraction of muscles can be carried out only due to the organic character of the relation 'person - his/her body part(s)': '[...] a motor act must be organized and instigated at a nonperipheral, purely central level' (Kimble and Perlmutter 1970.370). Also Vernon (1977.113) states that '[...] nerve impulses promptly proceed from the brain to the muscles, causing them to adjust the head, body and limbs [...]'. In the light of this fact the body part is always 'affected', irrespective of the degree of mental processing of the impulse instigating the body part movement. In other words, 'all conscious movements (usually called voluntary) [...] are reflex in the strictest sense of the word' (Kimble and Perlmutter 1970.364).

Let us come back to the semantic role of the person. In movements instigated by the impulse that is mentally processed to a relatively low degree (for exam-

ple in impulsive or reflex movements, as may be the case in *His hand went up*, *His eyes closed*), the semantic role 'experiencer' is, naturally, foregrounded. We can then ask "What happened to him?" (It must be noted, however, that even for these sentence constructions the question "What did he do?" is not inappropriate because the person is involved in the movement in that he or she is the bearer of the impulse mentally processed to a certain degree. Thus the sentence construction with the body part in the subject position does not necessarily determine a low degree of mental processing of the impulse.)

In movements instigated by the impulse that is not mentally processed (movements uncontrollable by the person's will, as in *His hands trembled*), the person is the 'experiencer'. We can thus ask "What happened to him?"

It must be borne in mind, however, that on perceptual grounds the person is always 'affected' by the body part movement, irrespective of the degree of mental processing of the impulse. Armstrong (1962.33) states that 'By bodily sense we perceive that our legs are moving, that our head is turned [...].' 'The sort of thing I am aware of in bodily perception is the motion and position of limbs, the position relative to the earth of the whole body, the pressure of one part of the body to another, the stretching of tissue' (Armstrong 1962.37).

A unique (because organic) character of the relation 'person - movement of his/her body part(s)' clearly stands out in the light of the analysis of causative predicates in which the formulations of the type "x" makes it happen that "p" or "x" brings it about that "p" (or some other variants) are resorted to.

Such paraphrases pose problems when it comes to the sentences that should replace 'p'. Davidson (1966a.87) states that the sentence *Cass walked to the store* cannot be given as 'Cass brought it about that Cass is at the store', since this paraphrase drops the idea of walking. Hence the sentence that replaces 'p' should describe an event.³

Davidson is critical of the attempt to offer the paraphrase 'Jones made it happen that Jones's arm went up' as an analysis of the sentence *Jones raised his arm* 'because although the second of these sentences does perhaps entail the first, the first does not entail the second' (Davidson 1966a.87). Davidson has not made himself explicit on this point but his wording suggests that he considers the sentence *Jones's arm went up* as a description of an unintentional movement. He then admits that even if we wanted to find a way out of the difficulties by paraphrasing the sentence *Jones batted an eyelash* in the form 'Jones made it happen that Jones batted an eyelash', we would make no progress (ibid., p.87). Davidson comes to the conclusion that 'bring it about that' is a verb of

3 Cf. Jackendoff (1983), who holds that the second argument of CAUSE is an event, not a state. He presents two alternative analyses of *Amy put the flowers in the vase*: 'Amy made it happen that the flowers went into the vase' or 'Amy made it be the case that the flowers were in the vase'. He then decides in favour of the former analysis since the latter is 'somewhat odd-sounding: what Amy really did was bring about an event whose end-state is the situation in question' (Jackendoff 1983.177).

action 'and imputes agency, but it is neutral with respect to the question whether the action was intentional as described' (ibid., p.94). He offers his solution in this form: 'It was intentional of "x" that "p"' where "'x" names the agent, and "p" is a sentence that says the agent did something' (ibid., p.95). At this point he does not comment on the sentences *Jones raised his arm* and *Jones's arm went up*, nor does he specify the sentence that should replace 'p'.

Let us now consider the possible paraphrases of *Jones raised his arm* using the formulation 'it was intentional of "x" that "p"': 'It was intentional of Jones that he raised his arm' and 'It was intentional of Jones that his arm went up'. Both the paraphrases are plausible as descriptions of an intentional movement since not only *Jones raised his arm* but also *His arm went up* can express intentional movements.⁴ In other words, the grammatical construction itself (the construction with the person in the subject position or the construction with the body part in the subject position) does not have to carry explicit information about the (un)intentionality of the movement. It is the context, i.e. the position of the respective movement within the causative chain that determines the (un)intentional character of the movement of the body part, or more precisely, the degree of mental processing of the impulse instigating the movement. (The causative chain can be seen as an axis with its starting point taken up by a cause of the body part movement, its intermediary position by the body part movement, and its final position by the effect intended to be produced.)

Attempts to analyse body part movements by means of paraphrases with the verb 'cause' do not shed light on body part movements either. 'He caused himself to raise his hand' is tautological and 'He caused his arm to go up' disregards the functional (organic) identity of the person and his/her body parts, as discussed above. Danto felicitously remarks: '[...] I am not in my body the way a pilot is in a ship' (Danto 1963.443).⁵

Let us now come back to the question posed at the beginning of this article, namely in what way, in body part movements, a transition from the person to his/her body parts can be specified.

In the light of the preceding discussion it can be claimed that the relation 'person - movement of his/her body part(s)' is of a unique, because organic character. The person and his/her parts of the body form a functional unity. From this kind of perspective, a dynamic transition can only be understood in

4 Davidson (1966b) himself does not exclude the possibility of the sentence *Jones's arm went up* functioning as a description of an intentional movement. It would mean, he holds, that the event in 'Jones made it happen that his arm went up' is the same event as in 'Jones's arm went up' (Davidson 1966b.120).

5 Danto distinguishes basic actions and nonbasic actions. The movement as described in 'a's right arm rises at t' (t = time) is 'a basic action only if a raised his arm without causing it to rise, and a nonbasic action only if a caused his arm to rise by performing a basic action distinct from it, e.g., by pushing it up with his other arm' (Danto 1963.437).

neurophysiological terms, since body part movements are, as has been mentioned above, organized and instigated at a central, nonperipheral level.

If we accepted the idea of a dynamic transition as a feature of the relation 'person - movement of his/her body part(s)', we would have to specify the semantic role of the body part as the patient being affected by what the agent (the person) does. This would invariably mean that, to enable such a transition, we would have to deprive the concept 'person' of the concept 'his/her body part(s)'.⁶

We may say, then, that (a) body parts are functionally incorporated in the concept of person; (b) body parts can be seen as 'affected' participants in that the movement does not encompass the whole body (as is the case in global locomotory movements), but only its parts.

II

The functional (organic) incorporation of body parts in the concept of person manifests itself on the level of the linguistic presentation of body part movements in the following ways:

a) The grammatical constructions with the subject position occupied by the person (*He moved his hand*) and by the body part (*His hand moved*) can both be used for either 'intentional' or 'unintentional' movement.⁷ (The interpretation of the degree of mental processing of the impulse depends on the position of the movement in the causative chain.)

The two types of construction are not, of course, synonymous. The construction with the person (as the bearer of the impulse instigating the movement) in the subject position is, by its character, predisposed to render movements instigated by impulses that are mentally processed to a relatively high degree (e.g. *He waved his hands*). The construction whose subject position is occupied by the body part is predisposed to render movements instigated by impulses that are mentally processed to a relatively low degree (e.g. *His eyes closed in fatigue*) or are not mentally processed at all (*His lips twitched*).⁸

6 Wittgenstein (1963.472) says: '[...] wenn 'ich meinen Arm hebe', hebt sich mein Arm. Und das Problem entsteht: was ist das, was übrigbleibt, wenn ich von der Tatsache, daß ich meinen Arm hebe, die abziehe, daß mein Arm sich hebt?'

7 The construction with the body part in the subject position is very often resorted to for stylistic reasons: it offers a bare description of the movement due to the fact that the movement of the body part is freed from its ties with the impulse instigating the movement.

8 Needless to say, certain verbs can enter into only one of the constructions discussed (*He put his head on one side* - **His head put on one side*; *His hand flew to his mouth*. - **He flew his hand to his mouth*).

b) Body parts, being incorporated in the concept of person, are not real-world 'objects' in the true sense of the word. Their unique status reveals itself in the following diagnostic test:

- | | |
|----------------------------|---|
| <i>He raised his head.</i> | ?? What did he raise?
? What did he do with his head?
What did he do? |
| <i>He waved his hands.</i> | ?? What did he wave?
? What did he do with his hands?
What did he do? |
| <i>He closed his eyes.</i> | ?? What did he close?
? What did he do with his eyes?
What did he do?
What happened to him? |
| <i>His hand went up.</i> | ?? What did his hand do?
? What happened to his hand?
What happened to him?
What did he do? |
| <i>His head bent.</i> | ?? What did his head do?
?? What happened to his head?
What happened to him?
What did he do? |
| <i>His eyes closed.</i> | ?? What did his eyes do?
?? What happened to his eyes?
What happened to him?
What did he do? |

As can be seen, natural-sounding questions do not ask about the body parts. They ask about what the person did or what happened to her/him. The question "What did he do?" is appropriate in a context implicative of a high degree of mental processing of the impulse instigating the movement. The question "What happened to him/her?" is appropriate in a context implicative of a low degree of mental processing of the impulse. (Questions of the type "What did he do with his hands?" point to the sentences *He turned the stone with his hands*, i.e. to sentences expressing the person's manipulation of objects from the outer world. Questions of the type "What happened to his eyes?" point to the injury the body parts suffered rather than to their movement.)

One must not overlook the fact that for global locomotory movements as well (*He ran/sat down/stretched himself on the floor/fell down/stumbled*) we also form questions in the form "What did he do?/What happened to him?" Seen from this kind of perspective, we may say that sentences expressing body part movements denote the physical scope of the movement of the person's body in that the movement concerns only part of the body. (As is well known, certain

verbs expressing body part movements have the object, i.e. the body part, incorporated in their meaning, e.g. *to pout, to point, to hand, to nod.*)

c) As is well known, due to the coreferential relation between the person and his/her body parts, it is impossible to form passive sentences of the kind **His head was raised by him.*

It is interesting to note, however, that it is possible to form passive constructions with a person's psychosomatic state being incorporated in the syntactic structure of the sentence: *His head was thrown back by disgust/by pain.* This indicates that the person's internal (psychosomatic) state operates as a causative factor.

Needless to say, it is possible to form passive constructions with an external causative factor: *His hand was raised by her, His head was thrown back by the impact of the bullet.*

To sum up, it has been shown that the relation 'person - movement of his/her body part(s)' is not based on transitivity: body part movements are not instances of actions whose effects pass from the agent to the patient. Body parts may be seen as 'affected' participants in that the movement does not encompass the whole body, but only its part(s). The functional incorporation of the concept 'body parts' in the concept 'person' manifests itself in the linguistic presentation of body part movements.

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