

- d. Constructions with the AUX *werden*, *sein* and a nominalized verb (e.g. German *wird geschlagen*, *ist geschlagen*).

Both TAM distinctions (a,b,c) and passivization (d) correlate with a given degree of transitivity (see above I, 3). Such periphrastic constructions are less grammaticalized than the corresponding nonperiphrastic ones and they show an increase in predicativity--more information about the relation between participle and participants is given.

A further domain appertaining to the dimension of PARTICIPATION is that of complement and subordinate clauses: in so-called subject and object clauses as well as adverbial (viz. final, causal, consecutive, concessive) clauses a participant is represented by a sentence.

Faced with such a diversity we must repeat the question asked at the beginning of the paper (see Introduction): what is the connection, the common denominator of all these phenomena? how do these particular aspects belong together, forming a unity? And again: what is the share that each viewpoint or perspective (conceptual, semantic, syntactic, morphologic, pragmatic) has got in the linguistic phenomena surveyed?

2. A sketch of the connexion

In the dimension of participation we have to do (in a first approximation) with the linguistic representation of a *Sachverhalt* (state of

affairs, situation, proposition).¹ But we must clarify the relation between *Sachverhalt* and linguistic representation.

A *Sachverhalt* is for us the conceptualisation of something perceived, e.g. the collision of two cars. The collision as such takes place in time and in three-dimensional space; both simultaneity and successive characterize a complex situation. But its conceptualization produces a selective ordering: some aspects, though somehow perceived, are excluded (e.g. that a swan is just swimming along on the lake by the street)--other aspects and/or participants are highlighted, thus forming the nucleus or focus of the conceptualisation.

Now the linguistic representation of the *Sachverhalt* (i.e. of the above sketched conceptualisation) involves a more radical selection which is determined by the following lawlike language-intrinsic restrictions:

- A. The linguistic representation of a *Sachverhalt* is necessarily linear (exactly like the sounds themselves); thus even what is "really" simultaneous must be brought into a linear order.
- B. The linguistic representation of a *Sachverhalt* is controlled by two functional

¹ We prefer to maintain the German word *Sachverhalt* along the discussion, both because of the older philosophical usage (e.g. in Wittgenstein's *Tractatus*) and for a certain appropriateness: *Sachverhalt* (earlier *Sachverhältnis*) is a compound meaning 'things (*Sach-*) in relation (*-verhalt*, *-verhältnis*) to each other'. The word thus possesses the degree of abstraction needed here, which its usual English counterparts do not. [T]

principles. On the one hand we must refer to objects, on the other hand we must say, i.e. predicate, something about them. INDICATION (reference) and PREDICATION are two principles which effectively interact upon each other and in relation to each other.

- C. The linguistic representation of a *Sachverhalt* is subject to a certain typification or standardization: each and every *Sachverhalt* is represented as consisting of the participants and something which they participate in (the participee). In the simple sentence the participee corresponds syntactically to the predicate (verb) and the participants to its arguments or actants. Nonetheless there is no one-to-one relation here: PARTICIPATION also exists outside of syntactic predication--e.g. in modification, cf. *the destruction of Carthago by the Romans*--and syntactic predication is not restricted to PARTICIPATION--cf. copula clauses like *God is love* where higher predicates are involved, such as APPLIES in APPLIES (*God, love*); see also below section 3.31.

The general question boils down to this: How is the linguistic representation of the RELATION between participee and participants (or participative relation for short) brought about?

A crucial heuristics to accept the very idea that there exists a participative relation is that we have again and again been forced to postulate the existence of degrees of closeness in the relation between participee and participants. The techniques which enable us to configurate the relation in a thousand different ways admit of a certain ordering--on the

strength of their varying structural complexity, i.e. of the amount of structural means given for each technique. The more "machinery" is introduced, the more is said about the relation. In other words: the techniques are precisely ordered within a dimension characterized by an increase of structural complexity and thus of predicativity.

The one pole of such a dimension is the maximum inherence of the participative relation. The relation is here so to speak interior to the participee, i.e. indicated by the very relationality inherent in the verb. No morphosyntactic analysis can illuminate the situation any further. That is why we call this the indicativity pole.

Inherent relationality means that a given term is prepared for the relation to another term (or to several other terms). Such words are called *relational*; all other words, viz. such as are not conceptually and semantically prepared for relationality, are called *absolute*. Not only verbs (one-, two- or three-place verbs, like *sleep, hit* or *give*) but also nouns (such as *father* or *arm*) may be relational. In the latter case, however, we have not a participative relation. Or again: the maximum inherence of the participative relation is most clearly manifest in pure verbality.

Now, nominal and verbal relationality can be distinguished as two different linguistic phenomena only if we can distinguish nouns and verbs as two different linguistic categories.

That is why the distinction between noun and verb must have a clearly defined position within the dimension of PARTICIPATION.

This leads us to two further problems:

- A. Is the noun-verb distinction the beginning - the one pole of the dimension?
- B. If this is not so: what is the boundary, what is at the beginning of this dimension? (see below section 3.1).

At the other pole, at the end of the dimension the participative relation is not inherent, but has to be established by saying (predicating) something about it. Here the principle of predicativity is maximally active. That is why we call it the predicativity pole. We have here the demarcation problem, too: when do we reach the maximum predicativity, i.e. where is the upper limit of the dimension?

3. The sequence of techniques (programs) and the procedures within the techniques (subprograms, subroutines)

3.1 Indication and predication

The principles constituting the dimension (indicativity and predicativity) are both present in each technique, albeit in different quantities: maximum indicativity implies minimum predicativity, and there is some degree of indicativity even if predicativity is at its maximum.

The lower limit of the dimension--so to speak the basis upon which the whole dimension rests--is the point where indicativity and predicativity are both present but nothing is specified at all about PARTICIPATION. This is the case of the so-called logical predicates (Seiler 1977:256f.), for instance:

- (2) a. APPLIES in APPLIES (*I, musician*), i.e. *I am a musician*
b. APPLIES in APPLIES (*this, harpoon*), i.e. *This is a harpoon*
- (3) IDENT(ical) in IDENT (*Morning Star, Evening Star*), i.e. *The Morning Star is the Evening Star*
- (4) (NOT) TRUE in (NOT) TRUE (*it*), i.e. *It is (not) true*
- (5) EXISTS in EXISTS (*God*), i.e. *God is, God exists, There is a God*

The logical predicates are partially modelled by the operators of formal logic. These do not suffice to apprehend the relation between indication and predication present in the examples given in (2)-(5), or indeed in any similar sentences of other natural languages. We therefore prefer to use an abstract representation by means of logical predicates (or LOG PREDs for short). In many languages they have no morphological exponency, in other languages they are partially represented by the copula or a predicate like IS TRUE or EXISTS.

What distinguishes LOG PREDs from the usual predicates which we call semantic predicates (or