

## Four verbal categories and their relation to *begin*

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### Introduction

In a verbal phrase such as

“He began to dig the garden.”

we have a verb predication *dig the garden* and the aspectual verb *begin* which selects the inchoative part of the action represented by the predication. In this example the effect of applying the verb *begin* to the verb predication seems fairly simple, however, this is not always the case. In the following I intend to discuss the different forms of interaction we can encounter between the verb *begin* and a given verb predication. To that end it appears to be necessary to distinguish between at least four groups of verbal actions (or verb predications). These groups are similar but not identical to Vendler's classification, cf. Vendler (1967). The differences come about because I am not just interested in the temporal form of the action but also in the dynamic concept that underlies the verbal phrase. It is therefore a general assumption in this work that any verbal phrase evokes a dynamic con-

ception which I will represent in the form of a dynamic schema. This is in fact a generalization of the force dynamic schemata presented in Talmy (1985) in the sense that the verbal predications, whose dynamic form follows Talmy's schemata, are a subset of group II below.

The dynamic schemata presented below are fairly abstract, however, they are motivated from the different effects that can be observed from applying the aspectualizer *begin* to various verbal phrases. The first group of predications, which is treated, consists of the verbs that evoke an instrumental action. In this case the verb foregrounds the action itself whereas the irreversible change in the spatio-temporal world is backgrounded. The agent interacts with the world in a more or less expected fashion and the meaning of *begin* is primarily temporal as in *he began to dig the garden*. In the second group we have the predications that conceive the scenario as if there is a conflict between antagonistic forces. The verb, e.g. *persuade*, will foreground the change of state rather than the action itself. For that reason *begin* emphasizes the dynamic aspect of the transition instead of the temporal one as in *he began to be convinced about...* In the third group we have a dynamic conflict between external pressure and internal control. *Begin* will mark the unexpected disappearance of the internal resistance as for instance in *he suddenly began to shout*. In this case the verb will foreground the action as in the first group but there is no irreversible change of the spatio-temporal world as a result of the action. The last group consists of the cognitive verbs which emphasize the change. *Begin* will foreground a conflict between an external pressure and an internal inertness as in *he began to understand what John meant*.

In short, for the first group *begin* evokes a temporal meaning only, whereas for the other verb predications it supports different force dynamic meanings depending on the schematic structure of the conceptualization of which the sentence is an expression. Since the classification in four groups is motivated from the use of *begin*, the considerations concerning the classifica-

tion of verbs and the remarks concerning the meaning of *begin* are intertwined in the following.

### The closure of an action

The idea in the following is to give a "natural" categorization of verbs which refer to an action that takes place in time (an occurrence). That is, I omit verbs which do not have a temporal process as a part of their semantics. The categorization is done by means of what can be considered as the temporal and dynamic schema of the verb, irrespective of the substantive content of the process, for example, irrespective of whether it is a physical process or some abstract process. Once more, however, we must emphasize that it is a categorization of verb predications rather than of verbs in the sense that some verbs might appear in different categories depending on the context.

In the traditional theory on aspect one makes the distinction between unbounded and bounded processes or between processes (activities) and events (performances). For example: A process can be something like *he pushed the cart*, which is unbounded, whereas an event is something like *the sun went down*, which is bounded and extended in time or *the cable snapped*, which is bounded and punctual.<sup>1</sup> This has been done, for example, in Mourelatos (1981), Vendler (1967) and Kenny (1963).

In the verbal schemata we are presenting here, we will not quite follow this way of categorizing verbs. Instead, we will say that the verb predication refers to an action and that the schemata represent the *temporal and dynamic form* of this action, irrespective of the linguistic representation.<sup>2</sup> For example: *He*

<sup>1</sup> The examples are from Mourelatos (1981).

<sup>2</sup> The same verb can appear in verb predications that refer to different types of action (from a temporal and dynamic point of view), and therefore the same verb can underlie different schematic structures. On the other hand, different linguistic forms might refer to the same type of action and therefore fall under the same schematic structure.

*pushed the cart* is essentially unbounded, however, we are talking about an action which is not carried out, or at least only in rare cases, unless there is a goal. Even in *He pushed the cart for hours* we expect some goal to be present. Whether this goal is achieved or not is irrelevant for the dynamic interpretation of the action (but not necessarily for the temporal). That is, in the dynamic representation a virtual goal might be present even in the unbounded linguistic version and therefore these actions can in some canonical way be given a linguistic form in which the endpoint of the process is emphasized. For example: *He pushed the cart* makes us expect a linguistic form of the following type: *He pushed the cart to his home*. Furthermore, for some types of action it is possible to represent the termination by a temporal marker, for example: *He was digging in the garden* can be given a terminal point in the following form: *He was digging in the garden until two o'clock*. From these general remarks I will now make the following distinction concerning the form of an action:

Suppose we have a verb predicate that represents an action (occurrence). Suppose that the action is of such a form that it has an intrinsic goal attached to it and that the termination of the action can be located at a fixed point in time. Suppose we can make a linguistic representation of the action that emphasizes the terminative point. We will then say that this linguistic form represents the *closure* of the action.

### Preliminary presentation of the four categories

I now intend to make a preliminary presentation of the categories. The main distinction between category I and the other categories is that in the first case the predication refers to an action that can be closed whereas this is not otherwise the case.

1) In the first category we therefore find the verb predications which have one or both of the following two properties:

1) It is an activity that can be subjected to the operation of closure, as defined above.

2) The (closed) action is intrinsically repeatable, a consideration to which I will return later because this is a criterion that in most cases can be checked by the operation *begin*.

Examples:

- (1) "He travelled towards Hamburg." →  
"He travelled *to* Hamburg."
- (2) "He lowered the bucket down into the well." →  
"He lowered the bucket down *to* the bottom of the well."

Most of the examples that Vendler classifies as accomplishments are situated in this group (for example, *run a mile*, *paint a picture*, etc.) along with some of the examples that he classifies as activities (for example, *push a cart*, as mentioned above, but not *run around*, because it lacks any intrinsically determined goal). On the other hand, some of Vendler's accomplishments will not fall in this group, for example, *recover from illness*, because it does not signify an activity but rather a change of state.

This reorganization of the categories comes about because we are not only looking at the verb predication from the point of view of the temporal schema (is it unbounded or bounded, and if bounded, is it punctual or extended? etc.), we are also taking the dynamics underlying the temporal form into consideration. For example, those of Vendler's accomplishments that are not represented in Group I are exactly those that have a virtual force-dynamic schema consisting of two antagonistic forces, as is the case with *recover from illness*, for example. This is also the reason why there is no intrinsic repeatability in these cases.

Similarly, we want to differentiate between *He cried* and *He pushed the cart*, for example. Although from a temporal point of view they seem to have the same formal properties (we shall see later that even this is not quite true), the dynamics involved are different.

We will represent the closed form of the actions belonging to Group I schematically in the following way:



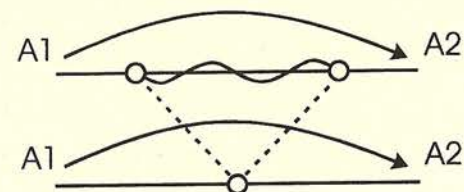
Suppose the verb predication does not refer to an action that can be represented in a closed form. We can then distinguish between whether the verb predication entails a change of state in the scenario referred to or whether the situation is conceptualized as if no change takes place.

II) The second category consists of verbal actions that entail the former. Moreover, the situation is conceptualized as if there are antagonistic forces in a conflict with no intrinsically determined temporal boundaries and which leads to a change of state in the represented scenario. The significance of this is that the meaning of the verb predication can be *identified with the transformation and not with the action itself*. The verb acts as a shifter between two states.

Examples:

- (1) "The lecture *lowered* the audience *into* boredom."
- (2) "The Norwegians began to *create* a Norwegian literature."
- (3) "He *resumed* drinking."
- (4) "He *found* his lost wallet."
- (5) "He *persuaded* her to come."

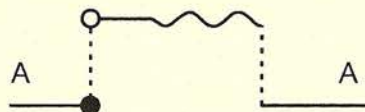
In all of these cases, the verb refers to a transformation which has no intrinsic temporal boundaries. The temporal schema for these verbs is therefore the following:



where the schema suggests that the process can degenerate to a point, for example in the case of (4).

In any case, the verb acts as a shifter between two states. Many, but not all, of the verbs that Vendler classifies as achievements will fall in Group I. *Reach the summit*, for example, belongs to Group I because it is intrinsically repeatable, which can be seen from *He began to reach the summit*, meaning: *He was engaged in a series of climbings and in the last of those he reached the summit*.

III) The verb predications that belong to Group III are those referring to an action that cannot be closed, and in which the original state of the scenario is restored after the action. As in I), we therefore get verb predications whose meaning is the action. Since we cannot close the action, however, we have no external time-structure, i.e., it is not a process that "takes its time." This corresponds to the verb predications involving the verbs which, according to Brandt (1994), have a normative form: *cry, laugh, worry, grind the teeth*, etc. It is characteristic of these verbs that we have the same state A before and after the process which the verb refers to and its reference is therefore a discontinuity in the continuum represented by A. We represent these verbs schematically in the following way:



Most of the examples from Group III, probably all of them, will fall in Vendler's *activities* category, but the reverse is not the case, as already mentioned.

IV) In this group, we will place verbs like *understand*, for example. In the linguistic tradition, it is assumed that this verb refers to a state. This is the case in Vendler (1967), but Vendler also recognizes that sometimes it can have the meaning of an achievement, as in *Suddenly, he understood*.

In the representation we are giving here, we will say that the verb predications in Group IV are those that refer to an *event* in which the state resulting from the event and the event itself cannot be easily separated. For example, if I suddenly understand the solution of a problem, then I understand the solution thereafter. That is, we have the same linguistic representation of the event and the state. This is in fact what differentiates the verbs in IV from those in II, where the resulting state is not itself described by the verb signifying the transformation.

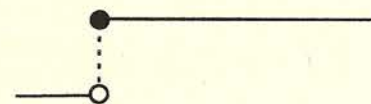
In this group (IV) we will also find a certain meaning of the verb *see*, namely the meaning we refer to when we use *see* as a metaphor for *understand*, for example in *Do you see what I mean?* This metaphor is not accidental, but is probably, on some deep level, relying on the temporal form of *seeing*. As noted by Vendler, the normal conception of *seeing* is that it is a punctual occurrence. However, the event of seeing puts the actant in an irreversible state; it is not possible to undo the seeing. If I witness a scene, a crime, for example, I am in a state in which I can evoke the seeing and, in certain extreme cases, I cannot stop seeing the event.<sup>3</sup> This is a state which we cannot semantically

<sup>3</sup> This outcome of seeing is connected with the concept of repression. For example, in his analyses of the *Wolf Man*, Freud reconstructs an original scene

distinguish from the event itself in the sense that every reference to the state appears in the form of "I saw ... ."

Of course, it is clear, as noted by Mourelatos, that there are other meanings of see. For example, if I say: *I began to see him in the morning*, then we have a non-random, repetitive meaning of *seeing* and therefore a verb predication which is placed in Group I.

The temporal schema for the verb predications in Group IV has the following form:



Now let us look more closely at the different classes of verbs in their relation to the aspectualizer *begin*.

### Specification of the categories. Interaction with *begin*

#### Group I: The action represents a trajectory

In the first class of verbs, the events referred to are characterized by the property of having an *external time structure*. By that we mean the following:

- a) the temporal process described by the linguistic representation of the action requires a determinable and limited *period* of time and this period is, in some sense, part of the semantics of the verb.<sup>4</sup>

has been "witnessed" by the Wolf Man, and then subsequently repressed. The "seeing" can not be undone, however, and therefore reappears in symptomatic form.

<sup>4</sup> There is a difference between bounded and limited. *He ran towards the house*, for example, is unbounded, but we do expect the action to take place in a limited period of time, which, moreover, is determinable.

- b) It gives meaning to emphasize by linguistic means a *starting point* and an *end point* of the action, if they are not already included in the verbal schema.<sup>5</sup>
- c) In a case where the linguistic form of the temporal process is emphasizing a determinable endpoint, we can often represent it with a trajectory in space-time, possibly an abstract one, for example "He ate his *way through* a pile of pancakes." The process therefore has a locally (temporally speaking) irreversible effect on the situation the verb is referring to.
- d) The meaning (or reference) of the verb predication *is* this trajectory.

By b) we get a difference from the verbs in III. For example, if we say *He laughed*, it gives meaning to measure the process by adding *for five minutes*, but it does not *a priori* give meaning to emphasize the limitpoints of the process, for instance by adding *until two o'clock*. However, if we say *He dug in the garden*, we still have an unbounded process, but in this case it gives meaning to bound it by emphasizing the temporal limit of the process, as already mentioned in the preliminary representation, *He dug in the garden until two o'clock*. The characteristic of an unbounded event is that any part of the event has the same meaning as the whole. *Laugh* and *dig in the garden* share this structural property, but they nevertheless have a different temporal structure because in the last case the process can be fixed by referring to an *external time-parameter*. The classification we are making now therefore cuts through the group of unbounded processes.

The actions in the first class can be represented in one of the following ways, but not necessarily in all of them.

<sup>5</sup> We distinguish between process and action. In *He ran towards the house*, we have a process, but in this process there is an action that is carried out, a running, which has a termination.

- a) The action can be represented as an unbounded process. We represent this in the following way:



which is to be considered as a temporal schema of the process. Example: "He travelled towards Hamburg."

- b) The action can be represented as a bounded process in which there is no emphasis on the endpoints. This we will represent schematically by



Example: "He dug the garden."

- c) The action is represented as a bounded process and there is emphasis on the endpoint. Schematically, we will represent it by



In the preliminary representation this is what we called the closure of the action. Example: "He travelled to Hamburg."

Note that the stressing of the endpoint of the temporal process is not necessarily a temporal marker; it can be a location emphasizing that the process has finished or an adverb: *He dug the garden completely*, etc.

We see that *to travel* is a process which can appear only with difficulty in a form corresponding to b). Any bounding of this process will almost necessarily end up in c).

Similarly, we can have verbs whose schematics *a priori* contain c), for example, the verb *to finish*. This verb refers to the

termination of an activity in which the actant is engaged. The semantics of the verb already contain the passing of the endpoint, and therefore it cannot in any generic way take the meaning of a), although it can do so in a non-generic way: for example, *He was trying to finish his work*.

In certain cases c) degenerates intrinsically to just one point, for example, *buy* and similarly for the other verbs named symbolic in Brandt (1994), that is, *give*, *promise*, etc.

As mentioned earlier, the verb predications in the first class are those referring to an action which can be extended to the form of c), as shown by the examples above. If we aspectualize by means of *begin*, however, we get different results in the three cases, of course:

In a) we get a contraction of the process; that is, the meaning of the sentence remains essentially the same: *He ran towards the house* vs. *He began to run towards the house*, for example. These two sentences have the same meaning; the second one is just a contraction of the first.

In b) the result of the operation *begin* is a fragmentation of the process. For example, *He dug the garden* vs. *He began to dig the garden*, that is, the full event in the first sentence is transformed into only a fragment giving an unfinished version. In b) the result of *begin* is to focus on the beginning of the event leaving the rest unfinished.

This has bearing on the working of the same operation on c). Suppose that the event represented by c) is repeatable. The operation *begin* selects the first part of the event, leaving the rest aside, but the linguistic representation already focuses on the termination of the event. This gives a logical contradiction: We cannot represent the beginning of the event, leaving the endpoint aside and at the same time focus on the endpoint.

The only *cognitive solution* to this problem, therefore, is that *begin* no longer refers to the event itself but to an iterative series

of the same type of event.<sup>6</sup> *He has begun to travel to Hamburg*, for example, means that he is now travelling to Hamburg regularly. However, this is the only meaning the sentence can have.

The conflict between the endpoint-emphasis and the aspectualization with *begin* transforms the meaning of the operation. *Begin* becomes an operator which represents the plural form of the event. For example: *The light flashed*  $\emptyset$  *The light began to flash* (pluralization). That is to say, *begin* is, in fact, a syntactic way to express repetition in cases where the cognitive representation of the event includes the termination of the process. Stated in the following form, this is probably a universal fact: *If a linguistic representation of an event includes the termination, then aspectualization of the beginning of the event either gives no sense (in a case where the event is not repeatable) or it transforms the event into a series of the same type of events.*

Examples:

- (1) "He got out of bed"  $\rightarrow$  "He began to get out of bed" (fragmentation of the process).
- (2) "He got up at six o'clock"  $\rightarrow$  "He began to get up at six o'clock" (iteration). In the last case we get iteration, because the temporal fixation of the process implies its termination.
- (3) "He began to finish his work earlier." "Finish" already includes the termination of the process, and therefore we get the iterative meaning.
- (4) "He began to buy a book (now and then)." Normally, it gives no meaning to say *He began to buy* because *buy* is not a process that can be fragmented, except in cases where we

<sup>6</sup> By cognitive solution we mean that this transformation is not inherent in the meaning of the linguistic terms, but it is the result of a cognitive dynamic.

have a special framing of the situation, as, for example, in the Danish expression *de begyndte at købslå* (they began to bargain). However, in cases where it does give meaning to use an expression like *begin to buy*, it obviously refers to an iteration. The same goes for the other symbolic verbs (see Brandt, 1994).

We can carry this a bit further: Besides closing the event by emphasizing the endpoint, sometimes the event can be singularized as well, for example *He travelled to Hamburg last Monday*. This is a singular event which is not repeatable; the application of the verb *begin* has the effect:

- a) of giving an iterative meaning as above, and,
- b) of selecting the singular event as the first in the iterative series, for example: *He began to travel to Hamburg last Monday*, which means that he is now travelling to Hamburg regularly, starting last Monday.

The effect of applying the operation Beg on the verbs from class I can be summarized by the following diagram:

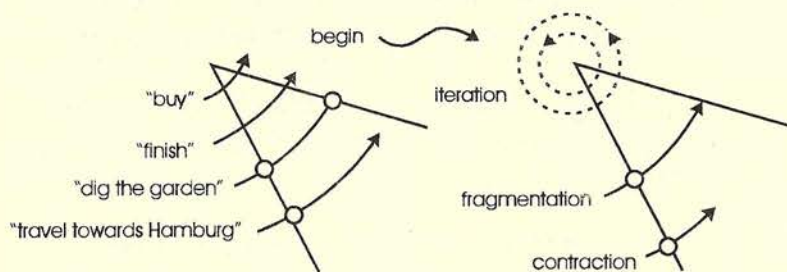


Fig 1

The application of *begin* for this class is purely formal, that is, it does not modify or interfere with the force-dynamic structure of the verb. It simply denotes, in the generic cases, the inchoation of a doing, i.e., the working of a force. The fact that by closing the event we can get an *iterative* effect shows what sort of doing we are talking about in the prototypical examples. We are dealing with purely *instrumental* doings, where the only resistance against the working of the actant is the inert resistance of the matter against which the force of the actant is directed. This means that the actant can always return and repeat the process. For example, in *digging the garden* we only have the *natural* resistance coming from the properties of the garden, but there is *no fatal, intentional resistance* and therefore the actant is free to repeat the doing at any time.

The aspectual verb *begin* gives us a means to determine which verb predications belong to Group I: *If the application of "begin" to a verb predication produces an iterative effect, then this verb predication belongs to Group I.* In the prototypical case we are dealing with a transformation of space in which only one intentional force is activated. However, to this force we can possibly add the force of the instruments applied, for example, the actant is acting "with the help of," "by means of," "by using." In other words, we have a causative form of the transformation, where in the generic cases an actant is causing a transformation using the force of an instrument. In a force-dynamic context we can represent this in the following way:

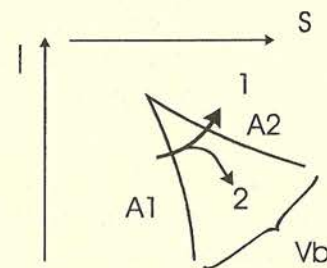


Fig. 2.



Where S is the force exerted by the actant, I is the condition, for example, the force of the instruments, under which the actant is acting, and the verbal process is identified by the cusped form. Along trajectory 1, the doing of the actant is strengthened through the improvement of the instrument: "He hammered the nail in with a *big* hammer." Along 2, the project of the actant fails because the strength of the instrument disappears: "He tried to hammer the nail in, but the hammer broke." One can, of course, give more detailed analyses of this dynamic field by looking at the possible trajectories that can be drawn in this field.

#### Group II: The action as a transformation of state

The verbs in the first group can, in most cases, refer both to a normative state of the actant (he is a digger) and to a transitive doing (he is digging the garden) and therefore their temporal structure requires *two thresholds* (see Brandt, 1994). The verbs in the second group, however, do not refer to a normative state of the actant. They cause a transformation of the situation from one state to another and that is their only meaning. That is:

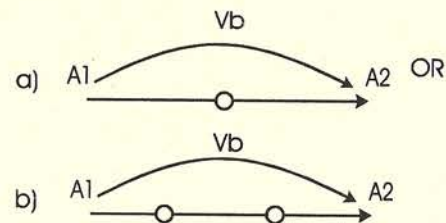
a) As the verb predications belonging to Group II do not represent actions which can be linguistically "closed" in a natural way, they do not, as those in I, have an external time-structure. This is the same as saying that in the generic cases it is not possible to give a fixed temporal boundary to the represented action. Sometimes it has a fractal form, i.e. the event is conceptualized as having a point-like temporal extent.

b) A consequence of a) is that the reference of the verb is not the temporal process being implied by the semantics of the verb, but the difference between the two states. In fact, the verb acts as a "shifter" between the two states.

c) As a consequence of b), the verb does not refer to a state in which the actant can stay. On the verbal level, this means that we have no (or only rarely) a nominalization of the verb.

d) The verb refers to a locally irreversible process.

Let me give some examples of verbs which might occur in a linguistic expression referring to an event of type II: *resume*, *drive (forward)*, *invade*, *overthrow*, *persuade*, *give in*, *make*, *let*, etc. We see that they all have the properties a), b), and d) above and most of them have the property c).<sup>7</sup> By that they differ significantly from the verbs in Group I. The temporal schemata for these verbs may be something like:



Where (b) is used in the case where the temporal process is extended in time.

If the transition performed by the verb takes place in a fractal moment, as in a) above, then, for structural reasons, it is not possible to aspectualize with *begin*. To do so requires some sort of interval. However, for verbs in Group II, it is possible, by means of adverbs, to "unfold" the point, thereby emphasizing that we are, in fact, dealing with a process in which two antagonistic forces are acting.

For example, if a person has been ill it is possible to say *He began gradually to resume his work*. Here the adverb has the

<sup>7</sup> The only exceptions are *drive* and *invade*, which can be nominalized as *driver* and *invader*. However, in most cases it will give no meaning to apply these nominalized versions; for example, one can say that *Jesus drove the merchants out of the temple* without, for that reason, being a *driver*.

effect of placing the transition from “non-working” (A1) to “working” (A2) in a force dynamic field where a force (*he*) is supporting A2, and another force (*the illness*) is supporting A1, and thereby extending the process of “resuming” in time.

Furthermore, the aspectualization of this extended process by means of *begin* now transfers a tentative meaning to the doing of the actant. The actant *tries* to work normally. However, this effect is general and can be deduced from the schema (b) above. The verb (*resume* in the example) has already placed the situation of the scenario in A2, but the inchoation with *begin* places the situation in the intermission between A1 and A2.

We therefore, logically, get a conflict between the aspectualization and the verb-meaning, of course being just a reflection of antagonistic forces working in the situation. The aspectualization therefore is stressing the force-dynamic aspect of the situation. Moreover, if the verb refers to the doing of a subject, then the aspectualization acquires the meaning that this doing is not accomplished.

In the example above, the actant has not fully resumed his work. As the verb in its semantics implies the accomplishment of the doing of the actant, it signifies that the counterforce, as mentioned above, is delaying this doing. In contrast to this counterforce, the doing of the actant appears as a *trying*.

We can conclude that the application of *begin* stresses a conflict in which *the two states are supported by conflictual forces*. Therefore, in contrast to class I, the inchoation of the verbs in class II is not neutral with respect to the force-dynamic structure. The aspectualization creates an unstable situation in the scenario in which the outcome of the doing is not yet determined.

In this case, we can say that the effect of applying *begin* is the unfolding of the temporally indeterminable transformations represented in schemata a) and b). For example, *He drove the goats out* does not say anything about the temporal form of the

event; to do so we need adverbial and aspectual modifications. The modification often has two effects:

First, we get a temporal boundary, a time-limit, being internal to the process and giving a deadline for the carrying out of the transformation. This means that there is a (qualitative) deadline for the process, although it gives no meaning to fix the event (quantitatively) between conventional external time limits. For example, in *He began to drive the goats out*, the external time limit of the process is not an immanent part of the verbal meaning.

Second, it creates a counter-acting force, as mentioned above, that is, the conflict resulting from the difference in the schematization of *begin* and the verb is represented by two antagonistic forces, two actants, so to speak, where one of the actants is supporting the meaning of the verb and the other gives rise to a delay and, therefore, to the aspectualization by *begin*. The deadline gives the temporal boundary in which the conflict takes place. This exfoliation of the two properties mentioned here can be represented in the following way:

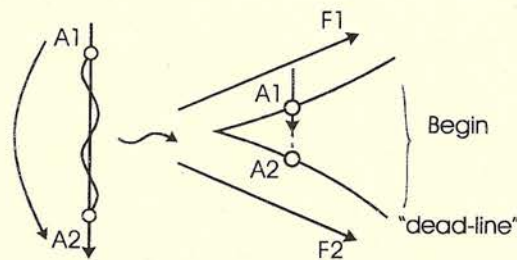


Fig. 3.

F2 is a force supporting A2, *he* in *He drove the goats out*, and in *He gradually resumed his work*, whereas F1 is a reactive force: “the goats” in the first case, and “the illness” in the second.

This reactive force might cause an aspectualization of the transformation, that is, an opening out of the underlying dynamic structure. However, this opening out is a necessary consequence of the conflict between the schematic structure of the verb, on the one hand, and the schematic meaning of *begin* on the other.

*Fall* is a generic verb in category II satisfying a), b), c), and d) above. Suppose the actant is a human subject: Then the verb does not refer to a state in which the subject is to be found; on the contrary, its significance lies in the change of the position of the body of the actant, and, finally, it does not give any meaning to represent linguistically the temporal limits of the process of falling. In the following I am using the verb *fall* to present some characteristics that pertain to the verbs in group II but which also have some general bearings on the relations and differences between group I and II.

#### 1) The schematic structure of the verb predication

What is required to understand the basic meaning of the sentence *He began to fall*? First, the speaker has to have a mental representation of two different (image) schemata for the position of the body and a transition between them; something like a schema of the following type:

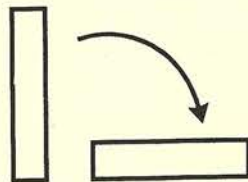


Fig. 4

Second, the transition in Fig.4 has to be understood dynamically, that is, the speaker has a schematic representation of two

antagonistic forces, one supporting the vertical and the other the horizontal position, and of the form which this conflict can take. *He began to fall* (he was staggering) obviously refers to a state of disequilibrium in which we find two conflicting forces, for example, gravity and the force of the subject trying to regain an upright position. That is, the sentence refers to the unfolding of a conflict whose form is represented by Fig. 3. Generally for Group II, Fig. 3 can be considered as a schema for the dynamical part of the verbal meaning.

Two types of schemata are therefore required to understand verbal meaning. A *force-dynamic schema*, which is presupposed by the *image-schematic* transformation. The force schema is itself not perceptible, but it is required to place the perceived phenomenon in a verbal category. The force-dynamic schemata are entrenched through social and physical experience, but they have no iconic content and are for that reason formal. The formal schemata represent the general dynamic conditions for verbal *categorization* and the single formal schema collects a class of verb predications in some enlarged mega-category, whereas the image-schematic content defines the particularity of the single verb.

Thus, the verb predications which have an underlying force-dynamic structure that can be represented by means of Fig.3 constitute a mega-category. The different image schemata then define *subclasses* inside this mega-category. For example, it can be a conflict between in/out or up/down, etc.

These schemata can again be differentiated, for instance, according to what sort of schema the *in* is referring to. Suppose it is the body as a container having been occupied by some evil force: Then a verb predication might include verbs like *drive out*, *expel*, etc., as in: *The poison was expelled from the body*. However, *in/out*, *drive out*, *expel*, etc., do not necessarily refer to a physical container. It can also be in/out of a given location. In phrases like: *He recovered his health* and *He was recovered from death to life* the "he" can be viewed as an entity

that under normal circumstances is placed in a location called "health"/"life."

This entity, however, can be subjected to a force which forces it into a complementary location: "disease"/"death." The schematic content of the above phrases therefore consists of an entity moving from a disphoric location into its normal position, while at the same time resisting an opposing force as the "he" *regains* his old territory. These considerations show that in a phrase like *He recovered himself after a perilous stumble*, the "self" is viewed as a location that is regained.<sup>8</sup>

In this way we can understand verbal meaning as depending on successive embeddings of schematic structure which at least will include:

- 1) spatial determination (e.g. what type of container)
- 2) spatial relationship (in/out, up/down, etc.)
- 3) the dynamic form of the verbal process.

The type of embedding will determine the verbal schema, and if we feed the embedding dynamics with figurative content *goats, poison, disease, etc.*, we get the verbal phrase.

## 2) The dynamic form

A structural property can be added to the form of the transformation to which the verbs in category II refer. One of the states is determined by a lack of something, a lack which is not present in the other (state), that is, the actant is losing something when going from A1 to A2, or conversely, gaining something when going from A2 to A1. We can therefore generally represent A2  $\emptyset$  as compared to A1.

<sup>8</sup> The self represented through a container scheme is a metaphor which has been examined by Lakoff (in Lakoff, 1996).

For example, in *He began to fall*, "he" is about to lose his balance; the realization of this loss implies the realization of the verbal program. The specification of a verb belonging to Group II is determined by a specification of the loss (or gain) in question *and* the dynamic form determining the loss (or gain). For example: If we compare *John sent Peter out of the room* with *John persuaded Peter to leave the room*, then the underlying conflict and the resulting state is the same in the two cases, that is, the "loss" of Peter is the same; the only difference is the dynamic form leading to the realized state. In the first example, John is solely exerting a force upon Peter, whereas in the second example, in addition, Peter is decreasing his resistance as a result of John's exertion.

This difference can be represented by different trajectories in the dynamic field represented by Fig. 3. However, the cognitive representation of the loss (or gain) determining the transformation is inherent in the image-schematic form of the verb predication (in/out, etc.), whereas the cognitive representation of the dynamic form of the transformation is inherent in the formal-schematic content of the verbal phrase (as a certain dynamic trajectory in the space representing the dynamic conflict between the two actants).

## 3) The semantics of the verb

In most cases, the conflict exfoliated by the operation *begin* is already inherent in the semantics of the verb, for example in *fall*. However, this is not always the case and that is why we have not included the force-dynamic property as one of the inherent characteristics of this category (II).

We are examining the effect of aspectualizing by means of *begin* and it turns out that, for some verbs, one of the effects is the opening out of a force-dynamic scenario, although the force-dynamic aspect is not an inherent part of the meaning of the verb, for example, for the verb *form*: *They began to form their*

own literature, i.e., they were trying to create their own literature (a tentative meaning). The force-dynamic effect can be obtained through means other than applying the operation *begin*, for example, through adverbs, as we have seen: *He had not yet resumed his work* or *He was about to fall*.

In the first case the adverb shows that the action *resume* has already been placed in a dynamic field with an attracting and a repulsing force. This again is different from the case of digging, where the force-dynamic represented by the adverb is prior to, or placed outside the verbal process, cf. the section on adverbial modifications below.

Obviously, one could make a subdivision of category II by distinguishing those verbs that have the dynamic field inherent in the semantics and those that do not.

#### 4) Transitions between group I and II

Of course, there is no clear borderline between the verbs in group I and those in group II. Although a verb, by virtue of its basic meaning, belongs to one of the groups, a change of the scenario might change the meaning of the verb so that, in this specific scenario, the verb has a schematism corresponding to the other group. This will often be the case when we distinguish between a basic and a metaphoric use of the verb.

Take, for example, the following two sentences: *He lowered the bucket into the well* and *His lecture lowered the audience into boredom*. In the first case, the reference of the sentence is the physical process described by the verb. We therefore have a physical trajectory which can be terminated, for example, as in *He lowered the bucket down to the bottom of the well*. As the event described by the sentence belongs to category I (the reference is the trajectory), we get an iterative meaning if we apply the operation *begin*.

In the second case, however, the meaning of the verb is not the process but the transformation of the audience. Therefore, the metaphoric use of the verb places it in category II; we cannot "close" the process by adding a terminative point and we cannot get an iterative meaning by using *begin*. Instead, we get a force-dynamic meaning. This is probably a very general phenomenon and it shows that when we use the verbs metaphorically, we, in fact, change the schematic structure of the verb.

One can suggest as a general rule that when a verb from Group I is used metaphorically in Group II it is the image-schematic structure which is preserved (this is what motivates the metaphoric use), whereas the formal schematic form of the verb is changed. That is, the force-dynamic form of the verb is changed because this form reflects the ontology of the situation to which the metaphor is applied.

#### Group III: The action as an expression of emotion

These are essentially the verb predications which Brandt calls mono-catastrophic (see Brandt, 1994), that is, they describe some sort of state in which the actant can be, for example, the state of singing, and therefore there is only one threshold to pass.

The typical examples are *become worried*, *scream*, *cry*, *sing*, *run around*, etc. That is, the typical examples are body expressions or the bodily uneasiness whose cause is not necessarily determined in the situation. We will therefore give the following criteria for the verb predication to belong to the mono-catastrophic class:

- a) The verb designates a state of the actant,<sup>9</sup>
- b) The state is *totally reversible*,

<sup>9</sup> We could also label it as an activity, as in Vendler. However, the category defined here is much more restricted than in Vendler. In the prototypical examples, the verb refers to an external expression of an internal state.

c) No temporal endpoint can be assigned to the process, that is to say, in its generic form, the significance of the process does not depend on an external time-structure. For example, the significance of crying does not depend on measuring the period of crying.

d) In the case of a human actant, the significance of the event is neither to be found in the temporal extension of the process as in Group I, because this extension is fractal, indeterminable, nor is it found in the transformation, as in Group II, because no transformation takes place; the event is reversible. Cognitively speaking, the meaning of the verb comes from the type of *discontinuity* in the perceptual field which inchoates the state of the actant. From these four observations we can give the following rudimentary temporal schema for the verbs in class III:

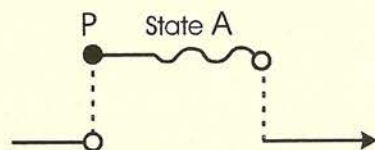


Fig. 5.

Formally speaking, there is an ambiguity connected to the discontinuity point P.

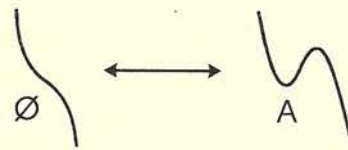
a) We can conceptualize the situation as if P “belongs” to the state A. In that case we have a determinable point in time which informs about the temporal process described by A. If we then aspectualize with *begin* we get the neutral or ordinary meaning of the process, for example, *The choir began to sing at six o'clock*. In this case, there is an external control of the somatic discontinuity which is informing about the state A and the inchoative schema has the ordinary form of:



b) Conceptually speaking, P can “belong” to the situation previous to the state A. In this case, there is nothing in the situation which informs about the doing of the actant. The state A has an open end to the left. This accounts for a special effect that can be observed when aspectualizing the verbs in Group III with *begin*, namely that the inchoation of the state A is unexpected; it is an unforeseeable doing of the actant that has its sources outside the social situation in which it appears. The inchoation is outside of social control, something like the meaning of “bursting into,” for example, *She began to cry*, meaning *She burst into tears*, or *They began to sing*, meaning *They burst into song*. In this case the meaning of *begin* is to foreground the discontinuity of the somatic expression.

The non-appearance of the point P in the temporal process of the state reflects the fact that it is often a random circumstance external to the social situation that gives rise to a somatic expression, that is, the random circumstance awakens the affective values of the actant then being expressed bodily. This leads us to a force-dynamic description of the schema above.

In all circumstances, whether the inchoation is random or controlled, we are dealing with a state which can be absent  $\emptyset$ , or present A. In a mono-catastrophic setting, we can represent this in the following way:



The transformation between  $\emptyset$  and A is depending on a variable which we then can interpret as controllable or non-controllable. That is to say, the verbs in Group III are located in a force-dynamic field consisting of an external social force, – “keeping up appearances”, “holde masken” in Danish, are ex-

pressions that refer to this force—and an internal affective force: “lose control”, “lose his head” are effects of the latter. These forces are in conflict, if the first one is striving for the maintenance of  $\emptyset$ , the other might accidentally activate A (bursting into), and when the first one is instigating the actant to maintain A, the affects of the actant might cause him to fail to do so. The force-dynamic conflict between the social forces and the affective forces of the actant is the cognitive requirement for understanding the aspectualization of the verbs in Group III as a discontinuity resulting from the eruption of some hidden force.

The graphic representation of this force-dynamic schema is not easy to achieve because of the intricate relation between the two parameters. Suppose, in a metaphoric sense, that the affective force is “neutral” then it must be possible through external control to realize both A and  $\emptyset$ ; “to laugh affectedly” or “to cry crocodile tears” are realizations, through physical control, of states which are normally associated with affective irruptions. On the other hand, if the value of the external social control remains “constant”, then an increase in the affective value might realize the state A, e.g. crying. The following figure is a visual representation of these formal requirements:

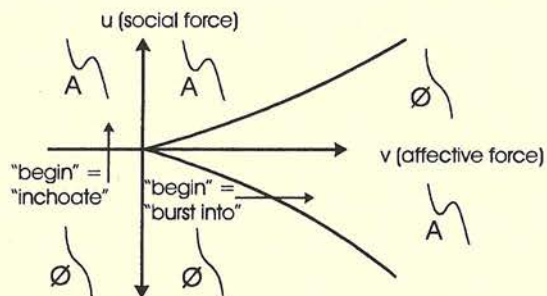


Fig. 6.

Fig. 6 does not seem to take the reversibility of the process into account. However, this schema is something that operates only locally. For example, the affective force cannot increase

indefinitely, nor can it stay on a high level indefinitely. If it does so, it changes from being an affective expression to become a permanent predicate for the subject. For example, as an expression of an affective investment, in some cases, one can say *He began to become nervous*, but this is not possible for a nervous man.

Fig. 6 is a metaphor that relies on the distinction external/internal. The idea is simply that the same somatic expression can appear due to the social circumstances and also as an effect of an internal state without any external reasons. For instance, laughter is often a social phenomenon related to social settings, but one can also laugh in situations where one ought to abstain from doing so. In that case there is a “bursting” into laughter.

#### Group IV: The act as a cognitive process

In this group we have verbal events with the following properties:

- a) the verb refers to a discontinuity in the state of the actant. In that respect these verbs share formal properties with the verbs from Group III. However, there are two important differences. One of them is that it is not a discontinuity in the appearance of the actant. The second one is,
- b) these transformations are *globally irreversible*. The prototypical events in II (and I) are irreversible too, but only locally (temporally speaking). If you are falling, for example, it is possible to restore the original state of the scenario. This is not possible in IV. In their generic form, therefore, these verbs have the same formal properties as the cognitive verbs. If you are seeing something, it is not possible to “unsee” it, as mentioned above. Similarly, if you are recognizing something it is not possible to undo the recognition, etc.

c) The temporal form of the transformation is that of a punctual moment, that is, the temporal form of the verb has no reference to the external social time.<sup>10</sup>

d) There is, however, an inherent paradox in the semantics of these verbs. Although the transformation has a punctual form, it gives meaning to aspectualize immediately with *begin*, for example, *He began to understand the truth*. From that we conclude the following: *The actant that is performing the action and the actant that resists the action is the same one.*

Proof: Normally, for those verbs which Vendler classifies as *achievement*, it is not possible to aspectualize by means of *begin*, for example, it does not make good sense to say *He began to resume his work*. One obvious reason is that the event these verbs are referring to have a punctual form. It is possible to extend the event in time, but that requires an opposition to the transformation which has to be represented linguistically in the verb predication. In *He gradually resumed the work*, for example, the adverb produces a temporal extension of the event by indicating a conflict in the act of resuming. Only in that case, we can aspectualize by means of *begin*. Conversely, we can conclude that because it is possible to say *He began to understand the question*, the opposition to the "understanding" is already part of the semantics of the verb; that is, we do not need extra linguistic representation of the conflict inherent in the process. But this opposition cannot be any external actant: It has to be the actant who "understands."

If we take d) together with b), we find that it is necessary to represent the reactive force of the actant in such a way that it

<sup>10</sup> Sometimes it is possible to locate the event in time. For example: *At what time did you see him?* c) means that time does not intervene as an immanent determination of the verb predication, in contrast to *travel to Hamburg* or *dig the garden*, etc.

cannot undo the transformation. If we say that the transformation is due to some external destinator, this forces us to represent the unfolded dynamic structure in a way that differs considerably from those of I and II:

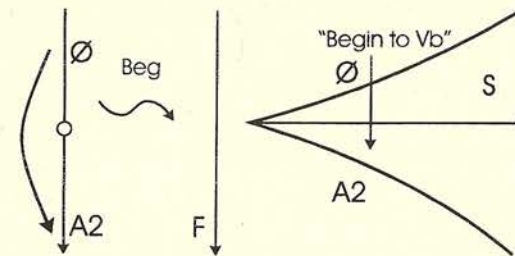


Fig. 7.

In this schema, F is a force responsible for the transformation, a destinator, for example. In the unfolded version *He began (gradually) to understand*, we get a dynamic version but, in this case, we get no antagonistic force. The dynamic of the situation comes from an inertia or an internal resistance of the subject which, in the schematism of Fig. 7, is represented by the force S.

If the initial state of the situation is the position Ø, then the force S can postpone the realization of the state A2 indefinitely, that is, S can defer the working of the force F. If state A2 is realized, however, then the force S cannot reestablish the original state Ø. This reflects, in fact, the second formal property of the verbs in Group IV: namely, that the effect of F is globally irreversible once it is realized.

Fig. 7 shows the schema for the cognitive representation of processes like *teaching*, *manipulating*, *seducing*, etc., in general, the initiating of the subject S. F is the force of a destinator initiating S to the state A2. The only force preventing this is the inertia of S. From the figure we can see that if the inertia is great then the transformation passes through the conflictual area, i.e. the transformation is catastrophic and the less it goes unnoticed. On the other hand, if the resistance of S is small then the trans-



formation does not cut the conflictual area and in that case it goes unnoticed.

This is the dilemma hidden in the cognitive verbs: To have any effect, they require resistance from the subject, but if the resistance is too great, there will be no effect.

#### *Adverbial modifications*

Let me finish by briefly mention some interesting differences between the groups concerning the effect of an adverbial modification of the verb predication. Consider the following examples:

I: *He finally closed the window, He finally dug the garden, He finally began to cry.*

II: *He finally died, He finally persuaded her, Finally, the city has fallen to its enemies, He finally understood the problem.*

In the first case, which comprises verb predications from categories I and III, the effect of the adverb is to indicate that a conflict has taken place before the action is performed. For instance, in *he finally closed the door* the adverb does not comment on the interaction with the window. Instead it foregrounds a "force dynamic" conflict between the speaker and the protagonist. The speaker has an expectation concerning the protagonist's act. The expected act E' is prior in time to the realization of the act E. The adverb both marks the difference between E' and E and the existence of a modal conflict in the time interval between E' and E. The realized act E, however, is independent of this modal conflict and the conceptual understanding of E is therefore unaffected by the existence of the adverb.

In the second group, which comprises verb predications from categories II and IV, the adverb is stressing a conflict that is

already inherent in the action to which the verb refers. For instance, in *he finally persuaded her* the verb refers to a force dynamic interaction which has a temporal extent. The adverb marks that for the speaker this temporal extent is larger than expected. The effect of the adverb is therefore to add some additional resistance to the persuasion, and in general to the act referred to by the verb, i.e. to postpone it. This time, however, the resistance takes place inside the verbal program, and E is not independent of the conflict which evokes the adverb.

We can state this as a general hypothesis:

*In the categories I and III a temporal adverb refers to an affective relation between the speaker and the act represented in the verb predication. The act itself is independent of this relation. In the categories II and IV a temporal adverb modifies the internal structure of the act referred to in the predication.*

In the first case the adverbial modification will be something like:



whereas in the second case it will be:



This again follows necessarily from the schematic form of the four classes. In the groups I and III the dynamic schematism of the verb includes only the actant and the possible instruments used: the circumstances under which he is carrying out the verbal program. The temporal adverbs, *finally, soon, still, already, not yet*, etc. all refer to speaker's expectation concerning the act referred to in the verb. If there is no internal force-dynamic conflict in the verb predication as in the groups I and III then this expectation concerns the act as a whole, i.e. the scope of the

adverb is the whole verb predication. If, on the other hand, there is an internal conflict in the verb predication then the expectation switch to concern the termination of the process only, i.e. the adverb comments on the temporal structure of the act itself.

In *they finally arrived at Hamburg*, the adverb refers to the speaker's expectation and not to the act of travelling. However, it is possible to give a non-basic representation of the scenario, so that a conflict will appear inside the verbal program, but that requires some extra resources. One could say, for example, *They had many delays, but finally they arrived*. In that case, *finally* foregrounds the difference between the expected arrival and the arrival resulting from an opposing force working against the realization.

In groups II and IV, the verbal program is already referring to an actantial conflict in which the concept of *expectation* is pregnant. Therefore, the adverb naturally adheres to the act to which the verb predication refers. One can use this adverbial effect, conversely, as a mean to test the prototypical character of the verb, that is, the prototypicality with regard to the mentioned categories.

If the adverb modifies the internal program of the verb, then the verb belongs to category II or IV. If, on the contrary, it refers to an external conflict, then it belongs to category I or III.

Examples:

*He has travelled to Hamburg - He has already travelled to Hamburg.*

*Already* refers here to the circumstances of the action.

*He has opened the window - He has not yet opened the window*

Not yet refers to speaker's expectation concerning the opening of the window.

*He has persuaded her - He has already persuaded her.*

*Already* refers here to the action itself.

*He has persuaded her - He has not yet persuaded her*

Not yet means that the act of persuasion has not finished.

### Conclusion

So far, we have presented four classes of verb predications. The first class refers to actions in which an actant is carrying out an instrumental doing which takes time and in which the temporal extension is an immanent part of the significance of the verb predication. Sometimes the action can be represented as a trajectory in space. If that is the case, the meaning of the verb predication is a trajectory that can be highly complicated. For example, eating a hamburger is, in this respect, a trajectory in the space occupied by the hamburger. He was eating his way through is an apt metaphor showing this.

The second class consists of those verbs referring to an action that causes a transformation from one state to another. In this case, we can say that the meaning of the verb is the difference between the states and not the temporal extension in which the action takes place. For example, *to persuade* is a verb whose meaning is invariant in regard to "the time of persuasion", but not to the change of state in one of the actants. For example, to what degree does the opinion of the persuaded coincide with that of the persuader? In this class we typically find the verb predications that refer to an inherent force dynamic conflict, cf. the remarks on adverbial modifications.

The third class contains the verb predications that describe a state of the actant and are often the expression of an affective state. Singing, for example, might be an expression of joy, but not necessarily. When it is an expression of the emotional state of the actant, there is no external time-structure in the verbal program; the program can be finished at any point without modifying the meaning of the verb.

The fourth class contains the verbs connected to cognition and perception. In this group the verb refers to a force dynamic

process in which the resistance to the change can be identified with the protagonist. However, it is a special resistance that can be described as inertness, i.e. the protagonist cannot revert the process once the transformation has taken place.

If we are strictly speaking of verbs, most verbs can be in more than one class, depending on the schematic contents of the other linguistic elements in the verbal phrase. The Danish verb *bryde* (to burst) belongs to III in a phrase like *bryde ud i latter* (*burst out laughing*), whereas it belongs to II in a case like *sygdommen brød ud* (*the disease broke out*). In the latter case we have the meaning of a transformation of the actant which is irreversible.

The four classes probably reflect four basic types of phenomena that humans can encounter: interaction with the physical world, social interaction, affective expressions, and mental processes. These different forms of phenomena constitute the basic semantic domains according to Brandt (1998). Moreover, it has been shown that interaction with the closed class structure of language has different effect on the four types of verb predications. This has been briefly touch upon in relation to the adverbs of time and more extensively demonstrated with the aspectual verb *begin*. This sensitivity to the closed class structure is the main reason for introducing these four categories.

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