SOME ASPECTS OF MODALITY AS SEEN FROM A SEMANTIC POINT OF VIEW

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0. It cannot be the aim of this article to deal in any way exhaustively with theoretical questions concerning the notion "linguistic modality" or to give a full account of all the problems that are in some way or other connected with this category. I shall confine my remarks to a few questions relevant to the topic under consideration and discuss some major types of the category "objective modality" in more detail.

At present, opinions differ widely with respect to the content and extent of the term "modality". While some linguists define this category in a relatively broad sense listing a large number of different modal types, others confine themselves to a narrower definition or just touch upon certain aspects that are somehow related to this problem. No agreement has been arrived at so far as to whether modality constitutes a grammatical category, i.e. a (morpho-) syntactic category, or whether it should be looked upon as a semantic phenomenon. This is partly due to the different approaches to the description of language in general and to grammar in particular. Further misunderstanding has been brought about by different interpretations of a number of modal terms, such as mood/mode, modality, modal system or field, objective modality, subjective modality and others.

1. It is widely assumed nowadays that modality has to be regarded as one of the main features of sentences or, as some linguists maintain, as an obligatory characteristic of every sentence (cf. Gordon/Krilova 1968:7, Panfilov 1968:63, Mühlner 1974:1123, Moskal'skaja 1977:52). There are, however, divergent opinions about what should be included under this term. In some cases only one general feature is taken to be essential, viz.

"the relation between the statement affirmed in the sentence and reality as established by the speaker" (Gordon/Krilova 1968:7). Other linguists emphasize the twofold aspect of the notion 'modality' and differentiate between (a) 'the relation of the content of the sentence to reality (as regarded by the speaker)' and (b) 'the attitude of the speaker towards the content of the sentence' (cf. Achmanova 1966:237). Sometimes a third aspect is mentioned which is supposed to specify the relation of the subject of an action, process or state towards this action, process or state' (modality expressed by modal verbs — *He can swim, he may come, he must do it*, etc.) (cf. Sommerfeldt 1973:289, Schmidt 1973:231, Zolotova 1973:151).

The first aspect is quite often referred to as "objective or basic modality". It is said to be expressed by the morphological category "mood" (indicative, subjunctive, imperative). According to this view, the main distinction should be drawn between "real" and "unreal" events.[1] The second aspect is usually called "subjective modality". It permits the speaker to evaluate the content of a sentence in a particular way. In contrast to objective modality, it is regarded as optional, i.e. a sentence may or may not contain an element of subjective modality. Quite often it is confined to "the extent of reliability of the contents of a sentence from the point of view of the speaker" (Panfilov 1968:78) or the degree to which the speaker regards something as certain (degrees of certainty such as *to regard sth. as (im-)possible, (im-)probable, (un-)certain*, etc.).

Halliday (1970:329) reduces the term "modality" to "the speaker's assessment of the probability of what he is saying, or the extent to which he regards it as self-evident". The meanings of the modals such as *permission, ability, obligation, compulsion*, etc. are considered to belong to a different system which he calls "modulation". These meanings "have nothing to do with the speaker's assessment of probabilities ... They are part of ... the ideational meaning of the clause" (Halliday 1970:336).

Sometimes modality is identified with the "communicative intention" of the speaker, i.e. modal types are set up according to the main types of sentences with respect to their function in a particular communication situation (assertive, interrogative and imperative modality). This view is rejected by many linguists who maintain that the communicative intention of the speaker towards the interlocutor is something different from the relation between the content of a sentence and reality.

Most of the "traditional" grammars do not give a coherent presentation of the category of modality. Modal types and meanings are usually described isolated from each other according to the grammatical categories or parts of speech they belong to (mood, modal verbs, modal words, etc.). The main emphasis lies on certain formal features of these categories including a more or less detailed description of their function or meaning.[2]

The way in which transformational generative grammars have so far dealt with questions of modality seems, however, even less satisfactory. What I particularly have in mind is the classical model of TG as initiated and further developed by Chomsky, but to a certain degree this holds equally true for later and modified versions of the Chomskyan model which try to consider semantic problems more adequately than the classical model does. Earlier versions of TG quite often confined themselves to the enumeration of some modals as elements of the auxiliary constituent derived from VP or S (cf. Bach 1964:105—106, Chomsky 1965:65 and 85, Koutsoudas 1966:244—245, Jacobs/Rosenbaum 1968:120). Others, such as Roberts (1967) or Cattell (1969) say a little more about the modals, but do not touch upon any fundamental questions whatsoever. Even some of those articles that exclusively concentrate on the modal auxiliaries and other means of expressing modality in no way reflect the broadness and manifoldness of this category. They either deal with questions concerning the generation or classification of the modals (cf. Hakutani/Hargis 1972) or try to present a few semantic features for certain modal verbs (cf. Boyd/Thorne 1969, Marino 1973). Other linguists who suggested some modifications of the Chomskyan model by introducing a different approach to semantic questions (e.g. Fillmore 1968 and Chafe 1970) have, on the whole, not succeeded either in treating the category of modality in an appropriate way. The fact that modality plays a greater role in their approach may only be regarded as a minor achievement.[3]

2. Numerous problems with regard to the description of linguistic modality obviously result from a too narrow understanding of the term "grammar". Consequently, modal phenomena are described on the basis of the morpho-syntactic means of a particular language, i.e. the formal means of a language that are supposed to be somehow connected with modality serve as a starting point for describing certain modal meanings. It seems, however, far more

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[1] There is general agreement that "real" events are expressed by the indicative. Opinions differ, however, with regard to the character of "unreal" events or the "unreal relation of the content of a sentence to reality". Some linguists include the subjunctive and imperative under the notion "unreal", others confine the opposition "real — unreal" to the indicative on the one hand and the subjunctive on the other, thus excluding the imperative from this opposition.

[2] Jarvis (1972: 240—241) lists a number of shortcomings of pedagogical treatments of the modals (misplaced emphasis, inadequate treatment of meaning, etc.). In general, these faults also apply to the way modal phenomena are usually treated in most morpho-syntactically oriented "traditional" grammars.

[3] Fillmore's "modality constituent" is rather vaguely defined and includes too many different items which can hardly be subsumed under the notion "modality" (e. g. *negation, tense, mood, aspect*) (cf. p. 23).

promising to turn the question the other way round: which are the modal types to be included under the term "modality" and what are the means of a particular language to express them. Having established particular types and subtypes of modality one can then arrange the means of expression accordingly, irrespective of the fact whether they are of a lexical, morphological, syntactic or phonologico-phonetic kind. [4] Thus linguistic modality should be looked upon as a semantic category which modifies a language utterance in a particular way and which may be expressed by a number of different means in a given language (mood, [5] modal verbs, modal words (attitudinal disjuncts), modal phrases, modal particles, infinitive clauses, tense and aspect forms, lexical verbs, word-formational elements, word order, intonation, etc.). It is, for example, quite common to express one and the same modal type or meaning by different means in a particular language:

(1) *Because of dense fog it was impossible/not possible for the plane to land. Dense fog made it impossible for the plane to land. Dense fog prevented the plane's landing. The plane could not/was not able to land owing to the dense fog, etc.* (objective impossibility due to external circumstances).

(2) *John may (might) be in the library. It is possible that John is in the library. I regard it as,/consider/think it, possible that John is in the library. Perhaps/maybe John is in the library, etc.* (subjective possibility).

These few examples make evident that it is hardly possible to describe the modality system of a particular language within a framework of grammar which is mainly or exclusively based on morpho-syntactic principles. Linguistic modality can obviously only be dealt with more adequately if one tries to overcome the "narrowness" of morpho-syntactically oriented traditional grammars as well as the "broader" conceptions of transformational generative grammars which consider syntax to be the central component of the generative device. What I have in mind is a treatment of modal phenomena within a grammatical framework that starts from a semantic description of language utterances. [6] In our view the semantic component as one constituent of language utterances not only includes a sub-component specifying the rela-

tionships between certain elements of reflected states of affairs or propositions, i.e. the cognitive content, but also what is sometimes called the "communicative-pragmatic component" of language utterances. This refers to the communication situation in which the utterance is made as well as to the attitude of the reflecting individual towards the state of affairs reflected in his mind. [7]

3. Let us now come back to some basic opinions on modality mentioned above. One cannot fully agree with the view defining objective modality as the 'relation between the content of a sentence and reality (as established by the speaker)'. First of all, there is no direct relation between the content of a sentence and reality but only between the reflected state of affairs or proposition (which is expressed by an utterance or sentence) and reality. This relationship is determined by the question whether the reflected state of affairs corresponds to reality or not (cf. Kolšanskij 1961:94 and Welke 1965:122). Although this is an objective phenomenon, it can hardly be regarded as a feature of modality. It is nothing more than one of the essential properties of propositions, viz. their property to be true or not true.

In our opinion the term "objective modality" refers to the *mode of existence* of states of affairs. A particular state of affairs may exist *actually*, as an *objective possibility* (potentially), as an *objective necessity*, etc.:

(3) *John is talking to his friend* = It is true that state of affairs X (John talks to his friend) is *actually* given in a particular place$_p$ at a given time$_t$.

(4) (*Because of suitable climatic conditions*) *It is possible to cultivate rice in this area* = It is true that state of affairs X (the cultivation of rice) exists as an *objective possibility* in a particular place$_p$ at no specified time$_t$ (in general).

(5) (*Because of the heavy gale in the North Sea*) *The fishermen are compelled to stay in the harbour* = It is true that state of affairs X (the fishermen stay in the harbour) is an *objective necessity* in a particular place$_p$ at a given time$_t$.

The three propositions expressed by these utterances do not differ with regard to their relation to reality, since all of them are true. What really makes them different is their specific mode of existence. As every state of affairs is characterized by a particular mode of existence, objective modality may be regarded as an obligatory feature of any utterance having the form of a declarative or statement sentence.

As far as subjective modality is concerned, one might raise the question whether it is precise enough to define this category as the 'attitude of the speaker towards the content of the sentence'.

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[4] It goes without saying that the means used to express particular modal meanings wil vary from one language to another.

[5] It should be pointed out that the term "mood" is neither identifiable with the notion "modality" nor is it a particular subcategory of the latter. It is just one of the (formal) means used to express certain modal meanings. Whereas modality has to be regarded as a category of content (*Inhaltskategorie*), mood constitutes a category of form (*Ausdruckskategorie*).

[6] Here the notion "grammar" is understood to refer to the scientific description of the objectively existing language system, i.e. to the description of the rules and elements used to produce and understand language utterances that are "correct" with regard to their semantic, morpho-syntactic and phonetic organization and appropriate to the different factors of the communication situation (communicative intention of the speaker

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(factual assertion, inquiry, command, etc.), purpose of communication (intented effect on the receiver of the message), social situation (relations among the participants of discourse), conditions of transmission (e.g. direct vs. indirect speech, spoken vs. written communication), etc.)

[7] For further details on the semantic structure of language utterances see Berndt (1974 and 1976).

(i) In most cases it is indeed the attitude of the speaker towards the state of affairs reflected in his mind which may be called subjective modality. But there are also utterances in which the evaluation of the proposition expressed in the utterance does not refer to the speaker (producer and transmitting agent of an utterance):

(6) *Jack regards it as certain that John committed the crime. Jack doubts whether Mary is an honest girl*, etc.

In these cases it is the attitude of a person other than the speaker (namely Jack) which gives the utterance its particular modal shading. Thus subjective modality should be defined as the 'attitude of the reflecting subject towards something'. The reflecting subject may or may not be identical with the speaker/writer.

(ii) The reflecting subject does note valuate the content of the proposition as such but rather certain of its properties (e.g. its property to be true or not true):

$$\text{Person}_p \begin{Bmatrix} \text{regards it as (im-)probable, …} \\ \text{is certain, sure, convinced, …} \\ \text{doubts, is uncertain, …} \\ \text{is afraid, surprised, …} \\ \vdots \end{Bmatrix} \begin{Bmatrix} \text{that} \\ \text{whether} \end{Bmatrix}$$

ATTITUDE OF THE REFLECTING SUBJECT

$$\begin{bmatrix} \text{it} \begin{Bmatrix} \text{is true} \\ \text{corresponds to reality} \end{Bmatrix} \\ \text{it will become reality/true} \\ \vdots \end{bmatrix} \text{that X} \begin{Bmatrix} \text{occurred} \\ \text{occurs} \\ \text{will occur} \end{Bmatrix}$$

PROPERTIES OF PROPOSITIONS

(iii) Finally, a third aspect has to be taken into account. Since a proposition exists in the mind only in the form of a "judgement" (cf. Klaus 1972:43), every utterance will necessarily contain some kind of attitude (the term "judgement" is, by definition, connected with a subjective attitude). This attitude may, of course, range from simply stating a given fact to a highly subjective evaluation. It goes without saying that utterances in which simple agreement with the truth or non-truth of propositions is expressed are of less importance in describing subjective modality. They cannot, however, be excluded from this category, even though the main emphasis would naturally lie on such utterances which denote a subjective attitude in a more or less explicit way.

Considering the modifications discussed, subjective modality could perhaps be defined as denoting various kinds of attitudes of the reflecting subject towards certain properties of the state of affairs reflected in his mind.

Let us now briefly turn to what is called the 'modality of modal verbs'. It is said to specify the 'relation of the subject to the action, process or state expressed by the infinitive'. This definition does not mean very much for it simply denotes a general formal feature of sentences containing a modal verb. The fundamental shortcoming of this view seems to lie in the subject matter of definition itself, viz. in the attempt to use a particular means of expression as a basis for determining some kind of modality. This can hardly be accepted from a semantic point of view. Modal verbs may express very many different meanings which belong either to objective or subjective modality:[8]

(7) *Man can think* (possibility due to inner conditions (ability)=objective modality).
(8) *Because of suitable climatic conditions rice can be cultivated in this area* (possibility due to external circumstances=objective modality).
(9) *Man must eat in order (to be able) to live* (necessity due to inner conditions=objective modality).
(10) *Because of the heavy gale in the North Sea the fishermen must stay in the harbour* (necessity due to external circumstances=objective modality).
(11) *He may/might be at home. He must have done it. They should be here by now. That will be your friend at the door*, etc. (various degrees of certainty=subjective modality).

To sum up what has been said so far, it seems to be far more promising to approach modality from a semantic point of view. Instead of describing the meanings of such categories and classes as mood, modal verbs, modal words and others one should rather start from particular types and subtypes of modality denoting certain kinds of relationships. These types are usually expressed by a number of different means in a particular language. On the basis of such an approach it is at least possible to include language means which have so far never or hardly been mentioned in connexion with modality although they do, in fact, express modal meanings.

4. Since a lot of attention has been paid to problems connected with subjective modality in recent years, I shall confine my further remarks to a few questions concerning two types of objective modality ((im-)possibility and necessity).
4.1. With regard to a linguistic description of utterances expressing *objectively possible* states of affairs one important aspect has to be taken into account, viz. the fact that possibilities do not exist as such (on their own) but only in the form of a particular relationship between certain states of affairs. States of affairs which are objectively (im-)possible depend on particular conditions.

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[8] For this reason it is not justified either to describe the function of modal verbs as being used "to show the speaker's attitude towards the action or state indicated by the infinitive" Kaušanskaja et al. (1973: 118) or to 'signal the speaker's attitude to the proposition; that is, his decision how to assess the truth of a proposed statement" (Jarvis 1972: 242).
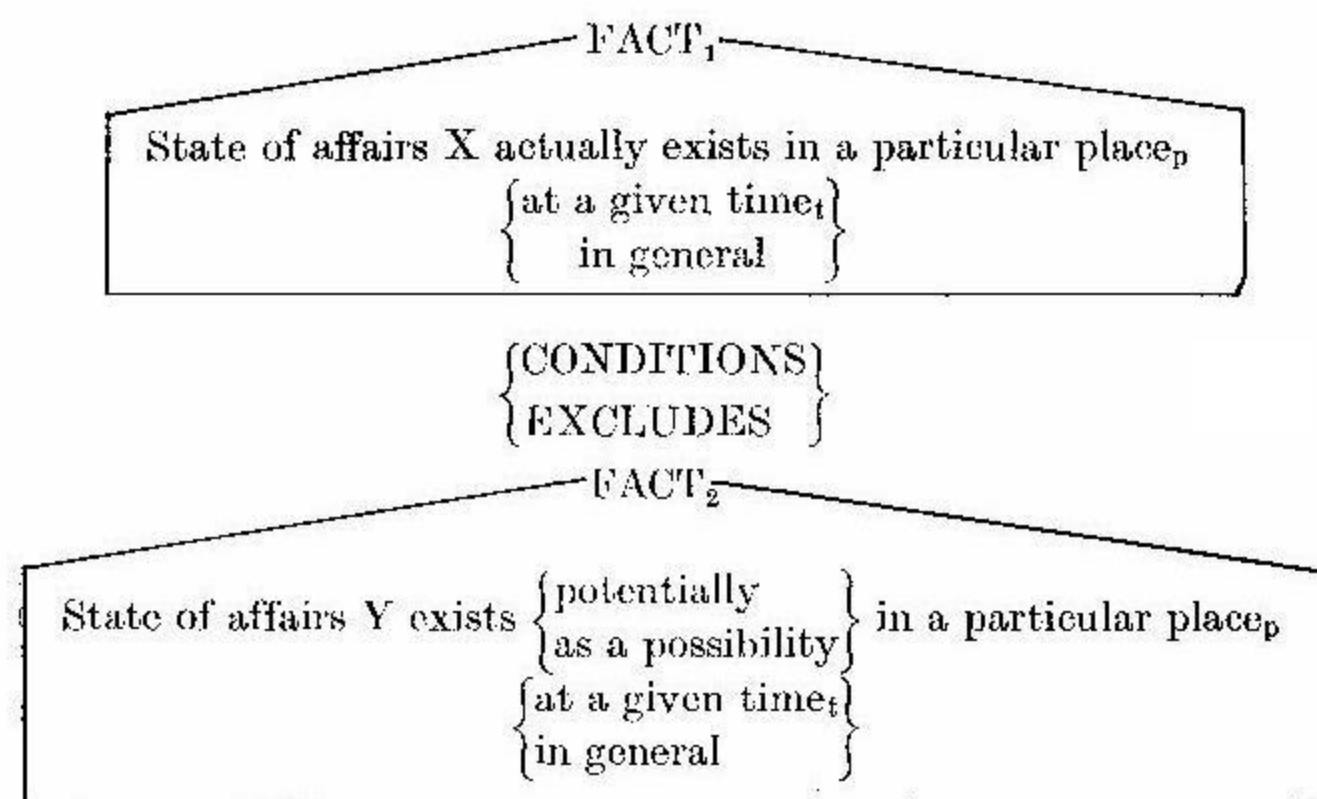
which themselves are states of affairs existing in reality.[9] These conditions may be of a different kind. They may be complex states of affairs denoting certain conditions in nature or society:

(12) *Suitable climatic conditions make it possible to cultivate rice in this area* (where *suitable climatic conditions* or "*the existence of suitable climatic conditions in X*" constitutes a complex state affairs).

In other cases it may be a single state of affairs which makes the realization of something else (im-)possible:

(13) *The fact that radio communication had broken down made it impossible to contact him.*

In a more general way the relationship between states of affairs of this type may be described as follows:

$$
\begin{array}{c}
\boxed{\text{FACT}_1} \\
\hline
\text{State of affairs X actually exists in a particular place}_p \\
\left\{\begin{array}{c}\text{at a given time}_t\\ \text{in general}\end{array}\right\} \\
\hline
\left\{\begin{array}{c}\text{CONDITIONS}\\ \text{EXCLUDES}\end{array}\right\} \\
\hline
\boxed{\text{FACT}_2} \\
\hline
\text{State of affairs Y exists}\left\{\begin{array}{c}\text{potentially}\\ \text{as a possibility}\end{array}\right\}\text{in a particular place}_p \\
\left\{\begin{array}{c}\text{at a given time}_t\\ \text{in general}\end{array}\right\}
\end{array}
$$

= The $\left\{\begin{array}{c}\text{actual existence}\\ \text{realization}\end{array}\right\}$ of X makes it (im-)possible for Y to become reality/ makes the realization of Y (im-)possible

With respect to the character of the state of affairs making something else (im-)possible, one can distinguish between external and inner conditions and, consequently, between *external* and *inner possibility*. (12) and (13) may be clearly described as cases of *external objective (im-)possibility*. There is a great variety of lexico-syntactic means used to express this modal type:

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[9] On the whole, this holds equally true for subjective modality expressing various degrees of certainty on the part of the reflecting subject. One usually regards something as *(im-)possible, (im-)probable, certain*, etc. if there are certain facts given which justify one's assumption (cf. Karttunen 1972:12).

(14a)   *This system makes it possible to include even the most isolated villages in the planned extension of the grid.*

(14b)   *Adverse climatic conditions make the cultivation of corn impossible in this area.*

(14c)   *The revolution of the Civil War had created for the small white farmers the possibility to acquire land and those democratic rights denied under slavery.*

(14d)   *This social system opens up the possibility for man to fully develop his creative powers/affords man the possibility of fully developing his creative powers.*

(14e)   *High walls preclude/exclude the possibility of escape, afford no possibility of escape.*

(14f)   *The condition of the roads prevents/precludes us from driving anywhere tonight, prevents/precludes our driving anywhere tonight.*

(14g)   *Circumstances do not allow/permit me to help you, do not allow/permit my helping you.*

(14h)   *Occasional gaps allow/permit passage through the mountains.*

(14i)   *The collapse of the strike enabled the company to resume normal bus service.*

(14j)   *There is no possibility for us to drive anywhere tonight, of us/our driving anywhere tonight, because the roads are flooded with water.*

(14k)   *A lot of snow had fallen during the night and therefore it was possible for the organizers to continue the competition.*

(14l)   *There was a block in the pipe and the water couldn't flow away.*

(14m)   *Since we live near the sea, we can often go swimming.*

(14n)   *As he had not been interrupted, he had for once been able to finish his work in time.*

(14o)   *I am unable/not able to cycle to school because my bicycle is broken.*

By "inner conditions", on the other hand, I understand certain characteristics or dispositions inside a particular subject (animate being) or "object" (in a wider sense), or features which are in some other way connected with them (e.g. the specific structure of the central nervous system or the sense organs and the way they function -- physical or psychic characteristics — particular inherent dispositions — a particular physical, mental or emotional state; the particular structure of certain "objects" — their natural constitution or the way they are constructed or designed — the permanent or temporary state of certain "objects", etc.):

(15) *Owls are able to see in the dark. This road is no longer passable.*

Since the term "inner conditions" may refer to subjects as well as to "objects", it is necessary to distinguish between two major subcategories.

(A) Inner possibility in the proper sense means that a particular subject (or a group or species of individual beings) is able or unable to perform certain actions due to the existence of specific conditions inside this subject (=*ability/ inability*). Curme (1931:411) describes it as a "possibility that lies in the ability of a person". Sometimes it is referred to as "alethic possibility" (cf. Lomtev 1972:106 and Nebykova 1973:88). Others regard it as a borderline case of possibility (cf. Welke 1965:48):

(16) *Man has the ability to transform the world by his own efforts and make it worthy of himself*
     =Man as a biological and social being possesses particular "inner dispositions" and a particular acquired knowledge/experience (=conditioning state of affairs X) which enable him to realize Y (to transform the world...).

This subtype is a kind of *general (in-)ability* since it refers to man as a species, to particular kinds of animals, etc. There is no restriction with regard to space and time. Here are a few more lexico-syntactic means used to express this modal type:

(17a) *Conditioned reflexes enable organisms to adapt themselves to changed conditions of their environment.*

(17b) *Lizards have/possess the ability/power to reproduce their tails, the capability of reproducing their tails.*

(17c) *Man has the faculty of/the capacity for articulate speech and abstract reasoning.*

(17d) *Protein molecules have the extraordinary property of being able to reproduce themselves.*

(17e) *Man cannot, is unable/not able to, perceive, is incapable/not capable of perceiving, sound vibrations beyond 27,000 cycles per second.*

(17f) *The chameleon can, is able to, change its colour, is capable of changing its colour.*

A second subtype of the category "ability" may be defined as (more or less) *permanent individual (in-)ability*:

(18) *This man can, is able to, lift 200 pounds*

    =This man possesses a particular physical constitution (=X) which enables him to realize Y (to lift 200 pounds).

There is quite a number of different lexical means used to express this kind of (in-)ability:

(19a) *He cannot hear well, is unable/not able to hear well, is incapable/not capable of hearing well.*

(19b) *He is incapable of logical thought.*

(19c) *He lacks the ability/power/capacity/faculty to speak, the capability of speaking.*

(19d) *He lacks the faculty/capacity/power of speech.*

(19e) *He has no sense of sight, lacks the sense of sight.*

(19f) *He has good/poor/weak sight/eyesight. He has good/bad eyes. He has no memory for names, etc.*

(19g) *He is of very limited intelligence.*

(19h) *He is blind/deaf (in one/both eye(s)/ear(s)). He is crippled. He is hard of hearing, etc.*

(19i) *He is a mute/cripple, etc.*

(19j) *He is a man of/with great/little intelligence, etc.*

(19k) *He knows how to play chess.*

(19l) *He speaks English quite fluently.*

(19m) *She doesn't know a swallow from a house martin.*

(19n) *He has a good/poor command of French.*

(19o) *He is good/clever/adept/poor/ bad at, weak in, languages. He is skilled/skilful/expert/ /proficient in/at fencing, etc.*

(19p) *He has a great skill in, little skill in, he shows great/little skill in, painting, etc.*

(19q) *He has/shows a(n) (natural/great) talent/aptitude/gift for acting, etc.*

(19r) *He is a talented/gifted actor, etc.*[10]

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[10] As can be seen from the examples given, there are different degrees of (in-)ability. Furthermore, the inner conditions are not the same in each case. (In-)Ability of the type under consideration is partly based on inborn dispositions, partly on acquired knowledge, experience, etc. To a certain degree this accounts for the different lexical means to be used in the two cases.

A third subtype of (in-)ability expresses *non-permanent* (or temporarily restricted) *individual (in-)ability*:

(20) *He was so weak that he was unable to get up. He was so nervous that he was not able to answer the question*

    =He is in a particular physical/emotional state (=X) at a given $time_t$ which does not enable him to realize Y (to get up/to answer the question) at that particular $time_t$.

The following lexico-syntactic means are used to express this modal meaning:

(21a) *She was so agitated that she couldn't speak, that she was unable/not able to speak, that she was incapable/not capable of speaking.*

(21b) *He could hardly walk because he was too tired. She could scarcely contain herself for joy.*

(21c) *I'm quite unable to taste on account of my cold.*

(21d) *He is too weak/not strong enough to rise.*

(21e) *She was speechless (=unable to speak) with rage. He was (struck) dumb with horror. He was mute with astonishment. He was paralysed (=unable to move) with fear. He was tongue-tied, etc.*

(B) The second larger subcategory of inner possibility may be described as follows:

Certain "objects" (in a wider sense) possess a particular inner structure or particular features, are designed/constructed in a particular way, or are in a particular state. This makes it possible or impossible for someone (usually unspecified) to subject them to a particular action:

(22) *This hill can be climbed, is able to be climbed, is capable of being climbed, is climbable, etc.*

    =This hill has a particular natural constitution (=X) which makes it possible (for someone) to realize Y (to climb it).

(23) *This ground is incapable/not capable of being worked, is not workable. This ground is so wet that it cannot be worked, etc.*

    =This ground is in a particular state (=X) which makes it impossible (for someone) to realize Y (to work it).

Further lexico-syntactic means of expression:

(24a) *The fact that the silver-mine is flooded makes it impossible to work it any longer.*

(24b) *The castle stands right on top of the hill. This allows/permits/enables one to see it from 30 miles away.*

(24c) *It is impossible/not possible to work this ground, there is no possibility of working (to work) this ground, one cannot work this ground, because it is too wet.*

(24d) *The food is in such a bad state that it is hardly possible to eat it.*

(24e) *The silver-mine is flooded and therefore no longer workable.*[11]

(24f) *The road is not broad enough/too narrow to be travelled along.*

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[11] Suffixed words of the type "verb+-able/-ible" are frequently used to express this kind of possibility. However, the conditioning state of affairs quite often does not occur in the sentence (cf. The old houses in the slums are not *repairable* = the houses are in such a bad state they cannot be repaired any more). *The Rhine is navigable from Strassbourg to the sea. This road is not drivable in winter. The limbs of the doll are moveable. Some Alpine passes are impassable in winter. The prison food was scarcely eatable, etc.*

(24g) *Bananas peel easily* (=can be peeled easily). *Steel polishes well. This material doesn't wash well. This bracelet won't clasp.*[12]
(24h) *These peas are easily shelled. This material isn't easily washed.*
(24i) *This wood is easy to polish. The poem isn't easy to translate. This ship is easy/not difficult to steer.*

It is obvious that subcategory (B) does not denote specific (in-)abilities of persons but rather some kind of (im-)possibility that is similar to external objective (im-)possibility (see above). What makes them different, however, is the existence or non-existence of certain relations between the elements of the two states of affairs constituting the (im-)possibility relationship:

(25) The fact that *this ground* is extremely wet makes it impossible to work *it* (=this ground).
(26) The fact that there are suitable climatic conditions in this area makes it possible to cultivate rice there (no relations of identity between the elements of the two states of affairs).

Constructions of the type *This hill is able to be climbed, is capable of being climbed, is climbable* are, therefore, not possible for external objective possibility.

Subcategory (B) of inner possibility is, on the other hand, only partly related to (A) (=(in-)ability). Both have one thing in common: the realization of Y is based on particular inner conditions, either of a subject (A) or of an "object" (B). Therefore, the phrases *to be able to/capable of* can be used for both subcategories. Different semantic functions do not, however, permit the same syntactic constructions:

(27) *This hill can be, is able to be, is capable of being, climbed* (*This hill can/is able to climb, is capable of climbing).
(28) *This man can/is able to lift 200 pounds, is capable of lifting 200 pounds* (*This man can be, is able to be, is capable of being, lifted 200 pounds).

For want of a more suitable term the second subcategory of inner possibility (B) will be called *(Im-)Possibility resulting from certain inner conditions of "objects"*.[13]

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[12] Again, this is a very productive means of expression (cf. *Sandstone cuts easily. This wheat grinds well. The dress irons well. The tin opens quite easily. This tap turns easily. This window won't lift,* etc.). The same construction may, however, also be used if there is no "agent" given who subjects something to a particular action. Such cases refer to processes and do not belong to the type under discussion (cf. *Iron corrodes easily. That oil-lamp smokes badly. Stone won't burn. A rubber ball bounces well. This cloth will not crush,* etc.). Compare also:
Cheese cuts easily=*Cheese can be cut easily.*
Iron corrodes easily≠*Iron can be corroded easily.*

[13] This type of (im-)possibility denotes a "subject-object-relationship" (the terms being used in a non-syntactic sense) for it is possible or impossible for *someone* (not specified) to subject *something* to a particular action. There is a second subtype of this

4.2. *Objective necessity* does not exist as such, either. It constitutes a particular kind of relationship between certain objects, processes or events. States of affairs are called necessary if they depend on other states of affairs which make them necessary. Objective necessity may occur in various forms of necessary relationships:

(a) *as a necessary condition*

(i) The $\begin{Bmatrix} actual\ existence \\ realization \end{Bmatrix}$ of X is $\begin{Bmatrix} necessary \\ a\ necessary\ condition \end{Bmatrix}$ for the possible $\begin{Bmatrix} realization \\ occurrence \end{Bmatrix}$ of Y

(29a) *The destruction of the outdated order (=X) is (a) necessary/indispensable (condition) for the replacement of one social formation by another (=Y). In order to replace one social formation by another it is necessary/indispensable/essential to destroy the outdated order. The replacement of one social formation by another necessitates/requires the destruction of the outdated order, etc.*

(i) is equivalent to (ii) and (iii):

(ii) The $\begin{Bmatrix} occurrence \\ realization \end{Bmatrix}$ of Y is impossible without the $\begin{Bmatrix} actual\ existence \\ realization \end{Bmatrix}$ of X

(29b) *The replacement of one social formation by another is impossible without the destruction of the outdated order, if the outdated order is not destroyed, unless the outdated order is destroyed. It is impossible to replace one social formation by another without destroying the outdated order, etc.*

(iii) The $\begin{Bmatrix} occurrence \\ realization \end{Bmatrix}$ of Y is only possible if X is actually $\begin{Bmatrix} realized \\ given \end{Bmatrix}$

(29c) *The replacement of one social formation by another is only possible if the outdated order is destroyed. It is only possible to replace one social formation by another by destroying the outdated order, etc.*

Other lexico-syntactic means expressing necessity in the form of a necessary condition are as follows:

(30a) *Production of material goods is a necessity for the existence of society.*
(30b) *Work is a pre-condition of human existence.*

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category which expresses a kind of "object-object relationship": *No rain can get through/ /can penetrate this coat. This coat is rainproof.* Here, certain properties of "objects" make it (im-)possible for other "objects" (or substances, climatic influences, etc.) to affect them in a particular way. The type is usually expressed by lexical and word-formational elements:
This steel is resistant/resistive to, proof against, rust. This material is not pervious/impervious to, impermeable/not permeable to, impenetrable/not penetrable by, water, etc. *Glass is transparent. Frosted glass is translucent,* etc. *This material is cold-resisting/cold-resistant/fire-resistive. This watch is (not) waterproof. The boots are watertight,* etc. *This glass dish resists heat. These shoes let in water. Dry sand absorbs water. Copper wire conducts electricity. Glass transmits light,* etc.

(30c) *A revolutionary situation is a (necessary) requirement/requisite/prerequisite for a revolution.*

(30d) *For society to exist production of material goods is necessary/indispensable/essential.*

(30e) *A revolutionary situation is needed for a revolution to take place.*

(30f) *There must be/has to be production of material goods for society (to be able) to exist.*

(30g) *In order to survive man must wrest from nature the means of survival — food, clothing, shelter.*

(30h) *There is no possibility for society to exist without the production of material goods, if there are no material goods produced, unless it produces material goods.*

(30i) *There can be no revolution without a, if there is no, unless there is a, revolutionary situation.*

(30j) *Society cannot, is unable/not able to, exist without producing material goods, unless it produces material goods.*

(30k) *There is only a possibility for society to exist if material goods are produced, if it produces material goods.*

(30l) *There can only be a revolution if there is a revolutionary situation.*

(30m) *Society can only, is only able to, exist by producing material goods, if it produces material goods.*

(b) *as a sufficient condition*

The $\begin{Bmatrix} \text{actual existence} \\ \text{realization} \end{Bmatrix}$ of X is a sufficient condition for Y to become reality

necessarily leads to the actual existence of Y

(31a) *The existence of friction is a sufficient condition for the occurrence of heat.*

(31b) *The existence of friction inevitably/necessarily leads to/results in the occurrence of heat.*

(31c) *Friction must of necessity/necessarily/inevitably lead to/result in the occurrence of heat.*

(31d) *If friction is produced heat is bound to occur.*

(31e) *Heat follows friction as a necessity.*

(31f) *Heat is a necessary result of friction.*

(31g) *Heat must (inevitably/necessarily) occur, is bound to occur, if friction is produced.*

(31h) *Heat inevitably/necessarily follows friction, etc.*[14]

(c) *as a necessary and sufficient condition*

The $\begin{Bmatrix} \text{actual existence} \\ \text{realization} \end{Bmatrix}$ of X necessarily leads to the actual existence of Y and without

the $\begin{Bmatrix} \text{actual existence} \\ \text{realization} \end{Bmatrix}$ of X it is impossible for Y to become reality

(32a) *Water necessarily passes into steam if it boils, etc.*

(32b) *Water must boil in order to pass into steam, etc.*

(32c) *It is impossible for water to pass into steam if it does not boil, etc.*

(32d) *It is only possible for water to pass into steam if it boils, etc.*

(d) *as necessity resulting from external compelling circumstances*

(i) The actual existence of X compels someone to realize Y

(33a) *Yesterday's gale in the North Sea compelled/forced the fishermen to stay in the harbour.*

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[14] This type of necessity is quite often expressed without particular qualifiers emphasizing the meaning "necessity" (cf. *Heat follows friction. If friction is produced heat will occur.*).

Here, necessity is intrinsically connected with impossibility:

(ii) The actual existence of X makes it impossible for someone to realize Y' (where Y' is an action different from or 'contrary to' Y)

(33b) *Yesterday's gale in the North Sea made it impossible for the fishermen to leave the harbour/to put to sea.*

In similar cases Leech (1969:205), uses the term "inversion system": "if one term is substituted for the other and the position of the negative is changed the utterance undergoes no change of meaning." Therefore, (i) and (ii) could also be put as follows:

(iii) The actual existence of X compels someone not to realize Y'/to refrain from realizing Y'

(33c) *Yesterday's gale in the North Sea compelled/forced the fishermen not to leave the harbour (or: ... compelled/forced the fishermen to refrain from leaving the harbour).*

Sentences such as (33c) are, however, rather artificial and hardly occur in actual speech. "Antonymous" pairs of the type (33a) and (33b) are usually preferred.[15]

Here are a few more lexico-syntactic means expressing necessity that results from external compelling circumstances:

(34a) *Engine trouble compelled/obliged him to give up the race.*

(34b) *Because of the enemy's fierce attack the soldiers were forced/compelled/obliged to retreat, the soldiers had to retreat.*

(34c) *Yellow fever was raging in Charleston and for this reason the Scots had no (other) alternative than/but to remain on board, no (other) choice but to remain on board, ... and for this reason there was no (other) alternative for the Scots than/but to remain on board, no (other) choice for the Scots but to remain on board, etc.*[16]

Objective necessity may also result from inner conditions:

(35) *Because of serious illness he had to resign. He was compelled by serious illness to resign, etc. (necessity due to inner conditions of a person).*

(36) *These shoes are in such a bad state that they must be repaired. It is necessary to repair these shoes. These shoes are in need of repair. These shoes need repairing, etc. (necessity due to inner conditions of an object).*

5. The two states of affairs constituting a possible or necessary relationship may be expressed by a number of different syntactic constructions in a sentence

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[15] Sentences expressing impossible states of affairs which are "non-actions" cannot be related to necessity in the same way: *The climatic conditions in this area make it impossible for pineapples to grow there (*... compel pineapples not to grow there).*

[16] Here, we also include such cases as *I had to stay at home because I was expecting a visitor, It started to rain and we had to turn back, They missed the last bus and therefore had to foot it,* etc., where the external circumstances are less compelling than in (33). Householder (1971:93) draws attention to the fact "that many ... causes are not truly necessary causes in the narrow logical sense, but languages tend to treat them indistinguishably from those which are strictly necessary".

(cf. X makes it (im-)possible/necessary (for someone) to realize Y — Because of/Owing to/Due to X it is (im-)possible/necessary (for someone) to realize Y — Someone must realize X in order to achieve Y — Y cannot be achieved without the realization of X, etc.). Furthermore, the degree of explicitness with regard to the conditioning state of affairs may vary from case to case depending on the context and a number of other factors:

(37a) *The climatic conditions in this area, which are characterized by subtropical temperatures and heavy rainfall, make the cultivation of rice possible.*
(37b) *Suitable climatic conditions make it possible to cultivate rice in this area.*
(37c) *This makes it possible to cultivate rice in this area.*

Compare also:

(38) *The fact that the harbour was blocked by ice* made it impossible for the ships to leave.
(39) *The loud ticking of the clock* prevented him from going to sleep.
(40) *Circumstances* do not permit me to help you.
(41) I can't see anything *for the fog.*
(42) The *drunken* man couldn't walk straight (=*The man was drunk* and therefore unable to walk straight).

In many cases no condition whatsoever occurs at the sentence level. Nevertheless, the sentence is complete:

(43) *It was not possible to contact him* (the external circumstances given in the context may be: *There was a heavy storm last night and radio communication had broken down).*

As far as some types of inner possibility and necessity are concerned, the conditioning state of affairs is hardly ever expressed in the sentence (*Man can think/must die. He can speak French. Bananas peel easily. These shoes need repairing*, etc.).[17]

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[17] For this reason it might perhaps seem odd to specify the conditioning state of affairs in each case. To a certain degree this is true because it quite often carries no particular communicative value and is therefore not expressed in everyday speech (not to mention the fact that such sentences are often clumsy and tend to sound artificial). On the other hand, one may come across sentences specifying both states of affairs explicitly. Thus the following examples might very well occur in scientific reading:
(a) *Conditioned reflexes enable organisms to adapt themselves to changed conditions of their environment* (vs. *Organisms are able to adapt themselves to ...).*
(b) *The second signalling system and the particular structure of his speech organs enable man to produce speech sounds* (vs. *Man can produce speech sounds).*
In general, it seems reasonable to start from the most explicit type of sentence structure. This makes it possible to provide a (more or less) comprehensive set of the different lexico-syntactic means used to express a particular modal type or meaning. Whether a "complete", "condensed" or "reduced" construction is used in one case or another can only be a matter of second thought. Here, other factors, such as functional sentence perspective, structure of the text, subject matter of discourse, stylistic levels, etc. play a decisive role.

6. As can be seen from the examples given in this article, there are quite a number of different lexico-syntactic means used to express one and the same modal meaning. This is due to the general fact that the relationship between content and form or, to put it more precisely, between "inner semantic form" and "outer syntactic form", is dialectically contradictory. There is no one-to-one correspondence between them. In other words, language utterances which have one and the same (cognitive) content may have different morpho-syntactic structures and may also contain different lexical items. On the other hand, language utterances of one syntactic type often belong to different semantic patterns. In connexion with the topic under discussion only the first aspect was taken into account. In order to discover and present the different means of expression for a particular modal type it is, however, necessary to start from a semantic description of these types.[18]

Co-existence of different lexico-syntactic means for one and the same modal type or subtype does not mean that they are of equal stylistic value. Nor does it mean that they display the same frequency of usage. Furthermore, there are also restrictions with regard to the applicability of a number of lexico-syntactic means in certain structures. To take these facts into account would require further investigations.

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[18] Similar methods were applied by Gulyga/Šendel's (1969) and Školina (1971). On a larger scale Hornby (1962: 201—252: "Various concepts and how to express them") and Leech/Svartvik (1975: 41—185: "Grammar in use") also try to compile a number of different language means for particular meaning types.

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