A brief survey of necessity and possibility

The following sketch is essentially a translation of the resumé of Part II of the book of Ursula Wolf on *Possibility and Necessity in Aristotle and today*.[1] What is claimed in this resumé is closely argued for on almost 400 pages of the book before this resumé. Of course the arguments are at most adumbrated in this sketch. I found it useful to translate it because it can serve as a model of (the results of) a descriptive clarification of a conceptual field and therefore of a philosophical investigation.

By way of introduction I perhaps should add the following. Wolf presents an analysis which is in broad terms an epistemic one. The approach is justified in an extended critique of Kripke's alleged metaphysical necessity in § 20 of the book (pp.188-212). [Wolf has translated *Naming & Necessity* into German.]

The subject of Possibility and Necessity falls under two heads (as shown already in the interpretation of Aristotle) – one concerning the propositional modal expressions, the other the predicatively used expressions of possibility and necessity, which were (can be) shown to be non-modal. The most important division among the modal expressions is between 'law-modalities', that is modal operators in front of claims of unrestricted generality, and the modalities of all other claims, which can be derived from law-modalities combined with singular premisses. The most important division among expressions of possibility predicatively used is between physical-causal capacities, which show strong interrelations with the modal topic of causal necessitiy, and human capacities (abilities), which are connected to the capacity for freedom of action and the concept of willing; an intermediate position is occupied by the capacities of animals.

Propositional modal expressions can be given an epistemic explication, although in different ways. The epistemic expressions in a narrow sense, which are to be explained as expressing certainty or possibility of claims due to our knowledge, can be applied to all indicative propositions (sentences). Modal claims of this kind are distinguished from ordinary empirical claims in that they do not (just) assert the truth of the claims, but (moreover) characterize the reasons available for the claims, which in contrast to truth or falsity can come in degrees. Therefore there are, strictly spoken, as many epistemic modal claims as there are ways of arguing for claims. For reasons of relevance for the whole topic this investigation concentrated on what was called 'factual modalities', the application of the operator of certainty to singular propositions of the physical realm. These factual claims of certainty mean that the modalizied state of affairs is inductively completely justifiable with reference to given facts and related statements of natural laws – that, with reference to our

1 Ursula Wolf: *Möglichkeit und Notwendigkeit bei Aristoteles und heute*, München (Fink) 1979, pp. 393-396.

operative criteria, there is no reasonable doubt concerning the modalized claim. Because such singular claims are derivable from general ones, they can be formulated with 'it must (may) be, that …', but this 'must' always remains a relative one, because among the premisses will be also non-necessary propositions.

The complexity of factual modalities demand an explication of law-modalities, which divide into analytical and causal modalities. These too can be given an epistemic explication, although only in the wide sense of being referable to our ways of knowing the propositions in question. Propositions which are logically necessary are based on linguistic rules, which are *known a priori* through reflection on our use (ability to use) of linguistic signs. The connected mode of reasoning is distinguished because of the universal validity of linguistic rules and therefore justifies talk of necessity. A proposition, whose truth is due to such a rule, is not only true, but necessarily so, because the possibility of it being false is excluded.

The necessity of natural laws can be understood in a related, but more complicated way. Natural laws are *not known a priori*, but are discoverd through empirical investigation. They do not, however, merely contain statements of regularities about sequences of events. The character of necessity of natural regularities results from the fact that for the regularity in question a scientific explanation in terms of the inner structure of objects as carriers of physical-causal capacities is (can be) given. Because they make explicit this dependence on the capacities of the objects involved in the sequence of events, universal statements of capacity are the foundational form of natural laws (an example: 'wood is burnable'; EML). The additional justification of observed regularities with a causal explanation is a distinguished mode of reasoning justifying talk of necessity, because the explanation in terms of inner structure refers to what defines the (natural) kind of the carrier of powers and dispositions, which therefore has to be valid without exception, if scientific explanation should not become useless and their concept empty (unapplicable). The necessity of causal regularities results indirectly from an analytical necessity, namely the analytical connection between predicates for kinds of natural substances and objects, their defining inner structure and the meaning of the concept of a causal explanation. But natural laws do not therefore become analytical propositions. Natural laws are meant for application to complex real situations and therefore contain an implicit or explicit reference to conditions. This again does not mean that they presuppose factual modalities, because the implicit reference of naturals laws to conditions of application can be explained by examples formulated in non-modal propositions with verbs of efficient causation. In this way the concept of an effective natural power, which cannot be directly perceived, used in

explanations as a theoretical concept besides that of an inner structure, can be explained at least indirectly.

Predicates of causal capacity are closely connected to the topic of natural law. Singular statements of capacity ('this piece of wood is burnable'; EML) have a derived status compared to universal ones. They can only be justified by showing that the carrier of the capacity is of a certain kind and that everything of that kind has that capacity. The universal statements of capacity are natural laws to be justified by adducing an empirical regularity coupled with a scientific (causal) explanation. They are distinguished from natural laws formulated as cause-effect-sequences by not having to be restricted explicitly to conditions of application, because they are defined implicitly in view of such conditions and often do not relate to a specific cause, but to the several possible causes of the actualization of the capacity. Causal expressions of capacity are not explained by conceptions of causal necessity (nor is there a direction of explanation from capacities to laws), but the explanation of both proceeds on parallel ways; for the predicative, non-modal expressions of capacity are just those expressions appearing in statements, in front of which the operator of causal necessity can be used to flag their distinguished mode of verification.

Predicates of (specifically) human abilities also do not presuppose modal concepts (although this is true of the special case of technical abilities). They do not permit – as causal capacities do – the inference from satisfied conditions (the so-called 'oppotunity') to actualization of the ability, but instead lead to the 'can' of free action (Austin's 'all-in-can'; EML) and the concept of willing, which is learned through training in reflected intentional action. The concept of opportunity is simpler than that of factual possibility and to be expressed by positive or negative existential claims concerning the satisfaction of conditions in a certain place at a certain time. In the context of human abilities there may appear a predicative 'must' in relation to specific situations, which again may be a simple or a relative one. If simple necessity is in question, then it results from the absence of human ability or freedom of action, that means that what is happening to someone is independet of his will. If the necessity is a relative one, then it belongs in the realm of human freedom and results from a chosen purpose (as the necessity of means for that purpose). This necessity results as follows: we use for action general contexts of naturally lawlike or psychological etc. kind or execute rules, where the general contexts used do not belong into our power (our capacities for action), although the simple action leading to the purpose can be done or not done. (What was called before 'specific' human abilities is characterized by this two-way-possibility. EML)