

PRAGMATISM OF MODAL VERBS: CASE STUDY OF 'ICAO' REQUIREMENTS

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Abstract: *Airspace nowadays is being used by almost all states of the world. Therefore, airspace users have become increasingly more aware of the necessity that common air rules should be applied, in order to avoid any hazards. The language of these air laws had to be as simple and clear as to be perceived correctly by everyone. The historical context of the World War II determined that the first international meeting of the states that had national aviation structures should be in Chicago, and the language used for negotiations or the final text of the Convention was English. Not all of the world states could be represented at the Chicago meeting because some of them were still at war, but countries that were interested in being part of the Convention were represented by a third party. The domination of the allied forces at the end of the war, with regard to air supremacy, resulted in a series of international documents, all of which written in English, then translated into the six languages of the United Nations. The current paper aims to analyze the pragmatic uses of modal verbs as they appear in some of the Annexes to the Convention on International Civil Aviation and to determine whether or not their meanings may lead to instances of miscommunication or altered messages generated by interpretation in languages other than English.*

Keywords: *standards; recommended practices; modality; pragmatics*

1. INTRODUCTION

The 'Chicago Convention' of 1944 has been considered the landmark agreement that set the foundation for safe air navigation standards and procedures. One of its main objectives was the development of international civil aviation "... in a safe and orderly manner, [...] on the basis of equality of opportunity and operated soundly and economically" (1944). Article 37 of the Convention informs us that each contracting State undertook to

collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation (1944).

Accordingly, the Convention made official the establishment of the International Civil Aviation Organization (ICAO), whose main responsibility, then as today, is to adopt and amend international standards and recommended practices related to aviation. All signatories of the Chicago Convention, counting 54 states back in 1944, and 192 as 2019, have voluntarily agreed to adopt and implement the

aviation standards and recommended practices (SARPs) designed under the auspices of ICAO. SARPs are published by ICAO in the form of Annexes to Chicago Convention. SARPs do not have the same legal binding force as the Convention itself, because Annexes are not international treaties. Any differences that may appear between SARPs and a contracting state are published as Supplements to Annexes.

Although ICAO is a UN agency and its documents are published in all UN official languages (Arabic, Chinese, English, French, Russian, and Spanish), starting with 2001, English became the official language of aviation. For that reason, all aviation personnel – pilots, flight crews and air traffic controllers must be proficient in English. There are nineteen annexes to the Chicago Convention, released by ICAO and they cover all aspects of air navigation, from personnel licensing, to operation of aircraft, security and safety management.

The aim of the current paper is to analyze the pragmatic uses of modal verbs as they appear in some of the Annexes to the Convention on International Civil Aviation and to determine whether or not their meanings may lead to instances

of miscommunication or altered messages generated by interpretation in languages other than English.

2. MODAL VERBS AND THE SEMANTIC-PRAGMATIC OCCURRENCE

The use of modal verbs in English has been studied by many grammarians and linguists (Quirk *et al.* (1985), Palmer (1986, 1990), Papafragou (2000), Halliday (1970), Jespersen (1924), Cohen (1971) etc.), yet, there is hardly a steady delineation between mood and modality, between the semantic and pragmatic uses of modals, their clear functionality and instances of ambiguity. Theories related to modal verbs cover almost the entire spectrum of their ‘possible’ associations with semantics, semantic barriers, pragmatics, speech theories, logics, philosophy, sociolinguistics, discourse analysis etc. Therefore, we intend to remain anchored to the semantic-pragmatic occurrence of modal verbs in six of the Annexes released by the International Civil Aviation Council and try to determine whether their meanings are crystal clear for all users when they utilize the Annexes in English, or a translated version in their own language.

From the English grammar’s perspective, modals are auxiliary verbs “denoting the mood of a verb” (Oxford Living Dictionaries online), verbs “used with another verb to express an idea such as possibility that is not expressed by the main verb” (Cambridge Dictionary online). Modality, on the other side is defined in relation with “a speaker’s or a writer’s attitude towards the world. A speaker or writer can express certainty, possibility, willingness, obligation, necessity and ability by using modal words and expressions” (Cambridge Dictionary online); “a particular mode in which something exists or is experienced or expressed”; “a particular method or procedure” (Oxford Living Dictionaries online).

If the above definitions are not enough or create slight confusion, we proceed with further information pertaining to grammar: modal auxiliaries do not have tense or mood; they can only be related to the idea of present, past or future given their association with other verbs.

Semantically speaking, modal verbs confer plus of information, sense or nuance in relation to the manner in which the action or state is achieved, presupposed or implied, whereas pragmatics regard modal verbs in their use, minding their different meanings, their polysemy. Linguistic theorists classify modal auxiliaries into various categories, in accordance with their meanings:

- intrinsic, in terms of human control over events: 'permission', 'obligation', and 'volition' (Quirk *et al.* 1985:219);

- extrinsic, which do not primarily involve human control of events, but do typically involve human judgment of what is or is not likely to happen: 'possibility', 'necessity', and 'prediction' (Quirk *et al.* 1985:219);

- “containing an element of will” (Jespersen, 1924:320-1 *apud* Haan, F. de, 2013:4);

- “containing no element of will” (Jespersen, 1924:320-1 *apud* Haan, F. de, 2013:4);

- epistemic, in the light of the speaker’s assessment of probability and predictability; they are external to the content, being a part of the attitude taken up by the speaker: his attitude, in this case, towards his own speech role as ‘declarer’ (Halliday, 1970:349) or the status of the proposition in terms of the speaker’s commitment to it. (Palmer, 1986:54–55);

- deontic, expressing notions like duty, obligation, permission, forbidding. They evaluate a proposition according to some moral code or someone’s opinion about whether the situation is desirable or not (Palmer, 1986:54–55).

Another classification of modal verbs has been done against a scale of degrees of certainty in relation to the speaker’s proposition.

In the light of our intended goal, that of analyzing the pragmatic uses of modal auxiliaries, we will focus mainly on such characteristics as *request, offer, obligation/strong obligation, advice, volition, possibility, probability, interdiction*. Then we will analyze the translation of some of the modal verbs into the Romanian version of one of the annexes, only to check whether their initial meaning (in English) is preserved (or not) in the second language. Our attempt may be justified by the fact that the international airspace is used by states with different cultural background, various sets of cultural perceptions, and, although all of the airspace users are proficient in English, certain nuances of the English language may be interpreted differently by some of them. Moreover, the ICAO requirements, or standards, function as ‘air laws’ to all airspace users and any misinterpretation of a law may lead to air incidents or even air crashes.

3. CASE STUDY OF ‘ICAO’ REQUIREMENTS

The selection of the Annexes to be scrutinized was done in relation to the number of modal verbs occurring in each of them (see Table 1). Their titles

may also be relevant, presumably, for the use of certain modal verbs and the omission of others. Thus, Annex 1 refers to *Personnel Licensing*; Annex 2 focuses on *Rules of the Air*, Annex 10, *Aeronautical Tele-communications*, Volume IV, copes with Surveillance and Collision Avoidance Systems, Annex 17 includes *Security* issues, in relation to Safeguarding International Civil Aviation against Acts of Unlawful Interference, Annex 18 aims at standardizing *The Safe Transport of Dangerous Goods by Air*, and the newest of the Annexes, 19, adopted in 2013, clarifies notions pertaining to *Safety Management*.

Table1. Distribution of modal verbs in selected annexes

	ANNEXES					
	1	2	10/4	17	18	19
shall	525	216	1296	18	74	53
should	65	24	74	78	19	27
may	90	79	180	34	18	19
might	7	5	20	4	2	0
can	37	40	129	0	0	4
could	6	0	31	0	2	3
be able	5	3	20	1	8	0
will	19	53	155	16	8	6
would	8	9	86	6	7	6
must	4	10	52	5	0	3
have to	1	1	5	0	0	0
has to	1	0	3	1	0	0
need	11	11	44	6	1	8

Mention should be made that all nineteen Annexes are perceived as ‘standards’ and ‘recommended practices’ (SARPs), whereas only six of them do not include in their Editorial Practices the following clarification: “It is to be noted that in the English text the following practice has been adhered to when writing the specifications: Standards employ the operative verb “shall” while Recommended Practices employ the operative verb “should” (see Annexes 2, 3, 5, 7, 9, 17).

3.1 Standards versus Recommended Practices. All annexes under analysis include definitions of the terms “standards” and “recommended practices” in their *Forwards*:

Standard: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to

the Council is compulsory under Article 38 of the Convention.

Recommended Practice: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavor to conform in accordance with the Convention.

These definitions, alongside with the editorial practices of associating *shall* with *standards* and *should* with *recommendations* are supposed, desirably, to be understood just the same by all law abiders. Grammar rules do not yet explain the fact that *standards* should be read as mandatory enforcement of the laws exactly as they are written in the annex, whereas, *should*, leaves the contracting states some opportunities of doing things slightly differently, provided that dissimilarities are made public to all of the other signatories of the Convention and included in Supplements to Annexes.

Therefore, from the pragmatic perspective, users of ICAO documents must become familiar with the strength of *shall* (1), which carries the meaning of ‘vital obligation’, while *should* (2) leaves no place for advice as long as it is almost always associated with a stated condition or an inferred one; occasionally *should* may be found in reference to ‘chance’ or ‘possibility’.

(1) Contracting States shall use the services of medical assessors to evaluate reports submitted to the Licensing Authorities by medical examiners. (Annex 1:1-6)

The transport of dangerous goods by air shall be forbidden except as established in this Annex and the detailed specifications and procedures provided in the Technical Instructions. (Annex18:4-1)

(2) Level 3 and level 4 transponders should be able to accept at least two complete sixteen segment plink ELMs in a 250 millisecond interval. (Annex 10-4:3-70)

An alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure (Annex 2:1-3)

It is then only natural that *shall* appears extensively within the annexes – it refers to laws – whereas, *should* may not exceed its number of occurrences because it is in reference to

recommendations, which cannot outnumber the laws. Figure 1 shows the distribution of *shall* and *should*; it is also relevant to note that the number of occurrences are in connection with the contents of the annexes, as well.

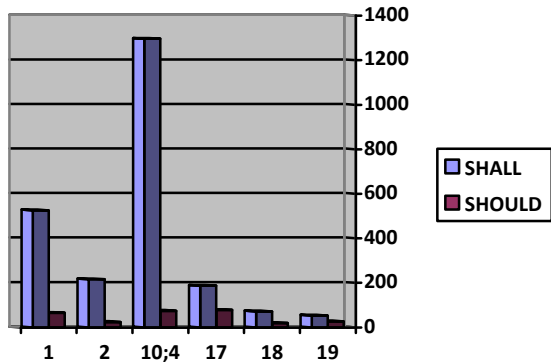


Fig.1 Ratio of modal auxiliaries *shall* and *should* in the six ICAO Annexes

Thus, Annex 10, Volume 4 – *Surveillance and Collision Avoidance* numbers 1296 uses of *shall* (it is also the longest of the selected annexes: 288 pages) and there is no other meaning of it than ‘strong obligation’ or interdiction, should the modal be used in its negative form.

In contrast, Annex 19 – *Safety Management*, the latest document adopted by the Organization uses *shall* only 53 times and *recommend(ed/ation)* for 42 times, throughout 44 pages. The correlation between the two may be explained by the complexity of the ‘safety management’ concept nowadays, on the one hand, due to the unprecedented evolution of aviation, in all its aspects, and, on the other, by as many challenges, threats or risks involving the idea of safety necessity.

Given that the ICAO documents were intended to provide the legal framework within which all contracting states should share the international airspace safely, it is no wonder that words/phrases in connection with law abiding, interdiction, necessity prevail. Apart from *shall* and *should*, there are other verbs used to express ‘obligation’/ ‘interdiction’/ ‘recommendation’ in the annexes: “central auxiliary” *must*; (the) “marginal” *need* or “semi-auxiliaries” such as *have to* or *be to* (Quirk *et al.*:1985:137). None of them, though, has the strength of *shall*, even if, to non-native speakers, users of the Annexes in English, aware of the importance of these documents, such subtle characteristics of the auxiliary verbs, together with the differences of meaning they carry may escape.

Similarly, *should* may be replaced by *may* or *can* when recommendations are made. Meanings

will not be the same for grammarians, whereas for non-linguists the perception may be in terms of personal commitment to the action involved. Consequently, ‘permission’ may be interpreted as suggestion/recommendation when the lack of obligativity appears. Such is the case of *may/can* expressing possibility: auxiliaries do no longer ‘make suggestions, or recommendations’, they only stress the idea of freedom of choice, which, again, leads to the ‘absence of obligation’:

Note.— Intermediate segments may be transmitted in any order. (Annex 10-4:3:44)

Such specific measures of protection of workplace recordings required by legislation may include the issuance of orders of non-public disclosure. (Annex 19:ATT-B3)

3.2 Will/would versus multiple possibilities. If the modals *shall* and *should* reflected the idea of ‘standardized’ behavior, respectively, of suggestion/recommendation, things become more complicated for non-native users of English when it comes to dealing with *will* or *would*. In case of these modal auxiliaries, there is not any language specification or editorial practice mentioned. Therefore, even proficient users of English may have difficulties in perceiving nuances of the messages including *will/would*.

Will reflect willingness, agreement, certainty, commitment to abiding the law, determination, request, threat, while *would* suggests various degrees of certainty, prediction, estimation, possibility, interdiction, refusal, promise.

With such a wide array of options, how will the user of the annexes be sure that he understood the message clearly? What if such instances of the language in use occur in verbal communication? Will messages always be conveyed? Hard to predict such suppositions – no study in this respect has been done yet. The only use of *will* in Air Traffic Controllers’ specialized phraseology is the reply ‘WILCO’, meaning “I understood your message and I will comply” and being used to indicated the pilot’s willingness and commitment to what has been indicated to him, or requested of him from the air traffic controller.

Judging by the examples extracted below from some of the annexes we may only hope that readers will not stop from reading and ask themselves what the difference is between one sentence and another, while they are using the same modal auxiliaries and that, in case they need to use a translation, the message is preserved intact as in the original document.

If the pilot does not reply, ATC will take this as confirmation that the use of Code 7500 is not an inadvertent false code selection. (Annex 17:ATT-21)

If an air traffic control clearance is not satisfactory to a pilot-in-command of an aircraft, the pilot-in-command may request and, if practicable, will be issued an amended clearance. (Annex 2:3-10)

A specific request for notification of differences will be sent to Contracting States immediately after the adoption of each amendment to this Annex. (Annex 18: (vii))

A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification. (Annex 2: (vi))

Destination alternate. An alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing. (Annex 2:1-3).

4. CONCLUSIONS

Participants at the Convention of Chicago in 1944 may have never thought that the language in which acts were originally written will create confusion to non-native users. Apart from the nationals of the six languages of the United Nations, the other beneficiaries of the acts had to use translations. The international air laws, in their essence, remain clear and the same, but the manner in which the message is sent to receivers may affect clarity. From this perspective, of the Gricean maxims related to discourse, quality, quantity and relevance have been achieved, whereas manner, in our paper, reflected by the use of modal auxiliaries has but partially been accomplished.

Moreover, there is evidence that semantic barriers occur and they consist of obstacles that appear due to interpretation of meaning. In this respect, the Romanian Association of Private Aviation Operators have forwarded a request to the Ministry of Transport and other specialized fora to preserve the original aviation documents, written in English, in order to avoid confusion and undesired incidents. For example, the only linguistic possibility of the Romanian language to express obligation is by means of the verb 'trebuie', which is equally used for nuances such as 'willingness', 'determination', 'commitment' etc., while most of the translations into Romanian are made by non-specialized people, whose lack of

knowledge in the field of aviation may often lead to worthless translations.

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