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THE VALUE OF RELEVANCE THEORY IN EXPLAINING THE  
MEANING AND USE OF *MUST* AND *SHOULD*

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## **Abstract**

A better explanation of the differences in meaning and use between *should* and *must* is needed. The empirical literature does not consistently distinguish between semantics and pragmatics, and does not explain why sometimes one modal can be substituted for another, whereas on the occasions this is not possible. This dissertation proposes that Relevance Theory, based on a clear distinction between semantics and pragmatics, has value in explaining the meaning use of *should* and *must*.



## Introduction

This study is generally interested in the meaning and use of the modals *should* and *must*. At the beginning of study, therefore, we will give some definitions corresponding to the study in this chapter and discuss the problem of modality, and then we will explain the aim of this work and the question of the problem we are trying to solve. Firstly, we begin by describing mood and modality and giving examples of various kinds of modality. We then move on to the dimensions of strength, degree and subjectivity/objectivity.

To briefly summarise languages used around the world, some, such as Latin, have a system of mood, e.g. *indicative*, *subjunctive* and *imperative*, and others, such as English, have a system of modal verbs, e.g. *should*, *must*, *will*, *can*, *may* (Palmer 1986).

Mood is about a formally grammaticalised category of the verb that has a modal function. Moods are stated inflectionally, usually in different sets of verbal one-to-another language with regard to number alongside the semantic differences they indicate. Modality is the semantic domain associated with elements of meaning that languages state. It covers a wide range of semantic details: *jussive*, *desiderative*, *intensive*, *hypothetical*, *potential*, *obligative*, *dubitative*, *hortatory*, *exclamative* etc. (Bybee and Fleischman 1995).

Portner (2009: 1) believes that in order to describe modality, the definition of modality gives a helpful place to begin: one of the linguistic phenomena related to grammar is modality and it allows one to say things about or states which are not necessarily real. For example, if we say 'You *should* see a doctor' we are saying something about states where *you see a doctor*; in particular, we are saying that some states are better than others in which *you don't see a doctor*. What we say might be useful and correct even if *you don't see a doctor*. Therefore, what we say concerns states that are not necessarily real.

According to Portner (2009), however, this description does not make obvious which properties of language are related to modality. For instance, are the present or the past real? He thinks that this is a difficult question, and if the past is not real, the past tense seems to be a modal expression in the definition of the past tense.

As a practical subject, the correct way to explore modality is to start with some of the properties of language that most evidently require modality in order to understand these properties as well as feasible, and then in order to see whether this understanding is fruitful

while applying it to new properties of language. In semantics, that strategy has improved by first working apparent auxiliary verbs such as *must*, apparent adverbs such as *maybe* and apparent adjectives such as *possible*, because the meanings of these words evidently must be to do with states that are not real. Semanticists then improve the theories of these words and the constructions they consist of, and eventually they observe whether these theories are convenient in comprehending the meanings of phrases and constructions. After decades of investigation, linguists have described many modal words, phrases and constructions (Portner 2009).

On the other hand, Palmer (2003) indicates that in the distinction between mood and modality which research into a great number of languages offers, what has traditionally been called *mood* is only one grammatical sub-category in a broader grammatical category. Another sub-category is what might be called the *modal system*. In this case, the term *modality* is used for the greater category and *mood* for only one of the sub-categories of modality.

Modal statements express cases that do not state the current position and cannot consist of the real world. In the linguistics literature, a significantly traditional way of categorising varieties of modality is one in which modal expressions have at least two broad meanings to communicate: epistemic meanings, which cope with the possibility or necessity of an inference occurring from accessible evidence, and deontic meanings, associated with the possibility or necessity of acts performed by morally responsible substitutes, e.g. permission and obligation (Portner 2009; Palmer 1986; Lyons 1977; Kratzer 1981). Examples (1) and (2) show epistemic and deontic modality respectively:

(1) "This *must* be one the finest views of the whole processional route"

(Palmer 1990: 50).

(2) "a. Employees *must* feed the animals twice a day.

b. You *should* be grateful to your parents for their support"

(Papafragou 2000: 3-4).

As well as the epistemic/deontic difference, another fundamental area of modal meaning is dynamic modality, which contains the theoretical varieties of real-world ability, intention and possibility (von Wright 1951):

(3) "We *must* have it out and use it once or twice" (Palmer 1990: 113).

Therefore there are two main ideas about the different kinds of modality. One group of linguists believe there are two main sub-categories of kinds of modality: epistemic and deontic. Others believe there are three sub-categories: epistemic, deontic and dynamic. Palmer (1986) suggests two kinds of modality, but latterly (1990) he mentions three categories and examples from von Wright (1951). Thus the presence of dynamic modality has been debated in the literature, as we will discuss later.

A fourth category of modal interpretations contains alethic modality; this subject is a traditional concern of philosophers and logicians and overcomes precise or logical possibility or necessity (von Wright 1951):

(4) "It *must* be the case that two plus two equals four".

The most important difference that distinguishes alethic modality from dynamic and deontic modality is that it is located in the conceptual family of the epistemic notion. The latter two types of modality are ordinarily classified as under-oriented modalities (Bybee and Pagliuca 1985; Bybee et al 1994; Bybee and Fleischman 1995, cited in Papafragou 2000) or root modalities (Hofmann 1966; Bybee 1988; Sweetser 1988, 1989; Traugott 1989, cited in Papafragou 2000).

After describing the various kinds of modal meaning, we need to mention further dimensions of modality: modal strength, degree of modality and objectivity/ subjectivity.

Huddleston and Pullum (2002: 175) define modal strength as "the strength of commitment (prototypically the speaker's commitment) to the factuality or actualisation of the situation". Collins (2009) believes that this provides the essence for the difference between necessity (where the loyalty is strong) and possibility (where it is weak).

Huddleston and Pullum (2002: 179-180) also describe degree of modality in terms of a concept as "the extent to which there is a clearly identifiable and separable element of modal meaning". A low degree of modality happens when modal expression displays harmony with the wider structure, that is to say, transfers modal meaning of a similar type and strength, such that its choice may be considered optional, as in the examples below:

(5) "It *must* surely qualify as one of the great symbols of Australia, along with the kangaroo and the koala.

(6) It's odd that ah mysticism *should* have such a bad name" (Collins 2009: 27).

The most common kind of modality is represented by example (5), which requires verb-adverb mappings in which there is the same strength between the verb and adverb such that deficiency of the modal would have a small effect on the meaning. In example (6) the so-named 'subjunctive' *should* is harmonic with the effective content of the superordinate clause (Collins 2009).

According to Collins (2009), the differences between objectivity and subjectivity seem to be in most extended accounts of modality (e.g. Perkins 1983, Coates 1983, Palmer 1990, Huddleston and Pullum 2002). Subjective deontic modality is usually observed as exemplified by 'performative' uses of the modal, as in example (7), where there is the illocutionary force of a communicator-initiated directive of *must*; on the contrary the example of (8) which is objective, where that of an assertion or report is its force.

(7) "You *must* let me smell it.

(8) If you are the registered keeper of a vehicle and you change your address or name (on marriage, for example) you *must* tell DVLA, using the back of the registration document" (Collins 2009: 28).

The objectivity/subjectivity differences apply to epistemic and also deontic modality. Consider:

(9) "Look at your injuries. You *must* have really hurt yourself.

(10) If there's a reasonable doubt as to whether there's a car in front of Mr McGregor's vehicle that also *must* point in my submission to a finding of not guilty" (Collins 1990: 28).

The expression of communicator inference is represented in example (9) that is related to epistemic modality. It is substantially weaker than the objective epistemic *must* as in example (10) (Collins 2009).

The main research questions is addressed in this study:

- (a) Why and how do *should* and *must* behave in similar ways in some cases but in very different ways in other cases?

Therefore, the following questions are spontaneously emerged as a research question:

- (b) What is deontic, epistemic and dynamic modality and how do they supposedly work with *should* and *must*?
- (c) Does the value of Relevance Theory work in explaining the meaning and use of *should* and *must* in Groefsema's (1995) and Papafragou's (2000) studies?

In part 1, we are going to give basic information about the different meanings and uses of *must* and *should*. In part 2, we will discuss the data which is expressed in part 1, that is, we will deal with types of modality in *should* and *must*. In part 3, we will handle the Relevance Theory account of *should* and *must*. In part 4, we will take some examples which include various meaning of *should* and *must*. These meanings, meanwhile, will be interpreted and discussed based on Relevance theoretic account of these two modals. In part 5, we will add and discuss some previous studies about Relevance Theoretic account of *should* and *must* and finally we will conclude all of these ideas in the conclusion part.



## Part 1: Necessity and obligation

### 1.1. *Must*

The meaning of *must*, as well as other modals, has been long debated in the literature. For example, according to Collins (2009), *must* has basically three different meanings: deontic necessity or ‘obligation’, epistemic necessity and petty dynamic necessity. However, in another study by Coates (1983), the meaning of *must* is divided into two basic fields: root meaning (obligation/necessity) and epistemic meaning (logical necessity/confident inference).

#### 1.1. 1. Deontic *must*

Whilst deontic *must* is used as a default interpretation where the communicator is described as the deontic resource, as in example (1), the connection between the use of *must* and subjectivity is not necessary. In objective *must* (example (2)), ‘the world’ is the resource of the external obligation to the communicator (Collins 2009).

- (1) "If you're on holiday in France you *must* visit a Chateau.
- (2) At the United Nations the world agreed that Iraq *must* withdraw or be driven out of Kuwait" (Collins 2009: 35).

Lyons (1977) believes that deontic utterances have at least an intuitive relationship between expressions such as

- (3) "Open the door.

and

- (4) Don't open the door" (Lyons 1977: 832).

Sentence (3) has a command and sentence (4) has a prohibition meaning and there is an obligation to act or avoid acting in a definite way. However, Lyons (1977) states that obligation is connected with necessity, similarly the notion of permission correlates with

possibility. Therefore there is a parallel between obligation/permission and necessity/possibility.

(5) "You *must* open the door.

(6) You *mustn't* open the door" (Lyons 1977: 832).

Lyons (1977) also explains the differences between examples (3)-(4) and (5)-(6). Sentences (3) and (4) would ordinarily be expressed as directive, however the other two might be construed as directives or expressions. Thus the speaker can performatively use subjective deontic *must* as in example (5), but Collins (2009) does not agree with this idea. Collins (2009) believes that although there is strong compulsion stated by *must* in example (7), the degree of directness between this example and its imperative equivalent (*Stop doing that*), in which the communicator gives immediate consent, is not the same (Collins 2009).

(7) "Then she said, "Oh you *must* stop doing that."" (Collins 2009: 35).

Subjective deontic *must* is generally used when the communicator is not in a situation – or might not wish – as in the recommendation, request and exhortation in the following examples respectively:

(8) "You *must* only do it with your teacher, because you can so easily get into the wrong.

(9) You *must* let me photograph your baby for my magazine.

(10) You *must* meet Forename6 you haven't met her at all have you"  
(Collins 2009: 35).

According to Coates (1983), the last four examples given above show the clearest position of subjective deontic *must* due to using *you* in a subject, as in Coates' (1983: 34) example of subjective deontic *must* below:

(11) "'You *must* play this ten times over," Miss Jarrova would say, pointing with relentless fingers to a jumble of crotchets and quavers."

Formal documents including regulations, laws or rules use objective deontic *must*, as in example (12) below:

- (12) "A complaint procedure *must* therefore ensure that both parties are given the opportunity to be heard in a fair and impartial way by a person who is sensitive to the issues and primarily concerned with the effective resolution of the problem" (Collins 2009: 35).

In some situations, objective *must* is used more abstractly and might be a formal position or opinion, as in example (13), or an undetermined consideration of what might be considered ethically desirable, as in example (14):

- (13) "There is this stuffy attitude you know, not just in politics but beyond, that somebody *must* wait another two or three years.

- (14) It would not be in the interests of our troops to do so and they of course *must* be our prime concern" (Collins 2009: 36).

Coates (1983) explains the clearest position of objective deontic *must* as an expression that has a third person subject, as in examples (15) below and (12)-(14) above (cited in Collins 2009).

- (15) "He's going on the 7.40 tomorrow morning and everything *must* be packed tonight" (Coates 1983: 35).

Moreover, Collins (2009) states that in a sentence with a first person subject, both subjectivity and objectivity can be found.

The uses of deontic *must* is sometimes uncertain with regard to the deontic source. In example (16), for instance, it is ambiguous as to whether the communicator is giving directives from a position of authority, or whether they are objectively indicating a regulation of the company that workers must abide by.

- (16) "You should help callers assess the responsibilities and duties of the position, and offer any other relevant information. Once the position has been advertised, you *must* be available to accept enquiries" (Collins 2009: 36).

It is significant that the relationship between the person and subjectivity/objectivity of the subject is only an inclination, as in the following examples:

- (17) "Northern Building Society has informed us that you *must* return the Mercantile Mutual Insurance Policy to enable settlement to proceed on the due date, namely 1 September 1991.

- (18) You *must* keep them moist (...) That uh bud *must* not dry out at all"  
(Collins 2009: 36).

In example (17) *must* is a subject of the second person, however, the communicator is not the deontic resource: in (17) an instruction is used whilst in (18) the second person subject is not the particular plural *you* and the obligation arises from an institution. The communicator is the deontic resource although *must* includes a third person subject (Collins 2009).

When *must* is used with a first person subject, both subjectivity and objectivity can be found. In example (19) the communicator engages in self-incitement, while example (20) exemplifies the formulaic *must* with a verb of communication where the utterance notices the act of acceptance or statement:

- (19) "It was very comfortable except for not have enough non-smoking places. As there were families with children in the same section it seems obvious they should do something about it. I *must* write and tell them.

- (20) Yeah I *must* admit I went home depressed as well" (Collins 2009: 37).

Another expression of *must* with a first person subject is a requirement which, if not externally imposed, at best has an ambiguous resource, as in the following example:

- (21) "Becoming who we are and taking full possession of our own historically conditioned cultural identities – something that we *must* all attempt if we are to live responsible lives – is, then, of a piece with the practice of anthropology" (Collins 2009: 37).

Collins' (2009) analysis states that the dimension of subjectivity and objectivity is not quantifiable due to the wide number of indeterminate examples.

Taking into account all of these ideas about deontic *must*, there is no clear distinction as to whether 'deontic' is a semantic or pragmatic category in the examples. It seems that deontic *must* has a semantically strong meaning, however, it is exposed to pragmatic weakening (Collins 2009).

In Sweetser's (1989) analysis of the meaning of modals, *must* has distinct force compared with *ought*, *have to*, *need to*. Connotations of *must* have irresistible force, whilst the irresistible force of the other three modals, for instance social or moral, is different from *must* in terms of respecting their domain. Therefore, according to Collins (2009), Sweetser (1989) explains the strength of *must* with the term 'irresistible' and this is nearly relevant to subjectivity/objectivity. The data proves an inclination for subjective uses to be powerful and objective uses to be weak.

### 1.1.2. Epistemic *must*

Using epistemic *must* rarely refers to activities and cases in the future and might be used to state pure logical necessity, without speaker involvement. However, in most cases, it is subjective and refers to past or present activities and cases (Coates 1983).

According to Huddleston and Pullum (2002), subjective *must* typically represents pragmatic weakening. The difference between strength and weakness of *must* is indicated in the following examples:

- (22) "A: What has happened to Ed?

B: He *must* have overslept. (Subjective)

- (23) A: If I'm older than Ed and Ed is older than Jo, I *must* be older than Jo (Objective)" (Huddleston and Pullum 2002: 181).

Example (23) includes strong semantic necessity, however, subjective (22) is construed as confident inference. Additionally, example (23) is similar to the unmodalised version with *am*, but (22) is weaker than *He has overslept*.

On the subject of 'confident inference', Coates (1983) has the same ideas as Huddleston and Pullum (2002). Coates (1983: 41) believes that there are two facts to be considered in the meaning of epistemic *must*: logical inference and the extent to which the speaker expresses his confidence in the truth of this inference. Moreover, according to Collins (2009), the speaker's 'confident' inference can be spoken in many cases, particularly those in which the fields for the deduction are explicitly expressed, as in example (24), and in (25) *surely* represents a low degree of modality and appropriately strong confidence.

- (24) "Kim Childs has got about 6 letters this week; her father *must* be the head of Australia Post.

- (25) It *must* surely qualify as one of the great symbols of Australia, along with the kangaroo and the koala" (Collins 2009: 39).

Nevertheless, in most subjective cases using 'confidence' does not appear convenient. They might be semantically strong, however, they have pragmatic weakening which needs to be taken into consideration. The following two examples (semantically non-harmonic) are examples of this idea (Collins 2009):

- (26) "The shelves *must* be four foot wide I suppose at least and they just go up to the roof.

- (27) I always presumed the child a man has by one woman *must* be temperamentally different from one he has by another woman" (Collins 2009: 39).

### 1.1.3. Dynamic *must*

According to Palmer (1990), the meanings of *must* have been long debated because it is neutral with a simple meaning. Therefore there is no definite distinction between deontic and dynamic *must*. Collins (2009) and Huddleston & Pullum (2002) only give a list of concepts that come under ‘dynamic’, not a proper definition. Therefore Huddleston and Pullum (2002) believe that example (28) represents a typical dynamic *must*.

- (28) "Ed's a guy who *must* always be poking his nose into other people's business"  
(Huddleston and Pullum 2002: 185).

Palmer (1990) believes that dynamic *must* arises if there is no indication of the attendance of the communicator:

- (29) "Now I lunched the day before yesterday with one of the leaders of the Labour Party whose name *must* obviously be kept quiet.

I can't repeat it.

If the ratepayers should be consulted, so too *must* the council tenants"  
(Palmer 1990: 113).

If the subject is *I* or *we*, it is obvious that the meaning is easy: ‘it is necessary for me/us to...’. We do not usually use obligations on ourselves in speaking:

- (30) "I have no doubt that I *must* do what I can to protect the wife.

- (31) Yes, I *must* ask for that Monday off" (Palmer 1990: 113).

A more noticeable example is an interrogative:

- (32) "Why *must* I put up with such enraging conditions? Why *must* the deaf person? Why should our intercourse be baulked like this?" (Palmer 1990: 114).

The native form of dynamic *must* is presented by *I think*:

(33) "I think we *mustn't* worry about this too much" (Palmer 1990: 114).

Moreover, one of the essential points made by Lyons (1977) is that *must* is always deontic and it provides a distinction between objective and subjective deontic modality with *have (got) to*. Therefore, the origin of the differences between these two modals is based on being the communicator in the deontic source. That is, whilst *have (got) to* would always be objective, *must* may sometimes be subjective.

One important advantage of such a result is that it would account for both dynamic and deontic uses of *must* within one kind of modality instead of relating two distinct kinds. They should be accounted for by the absence or presence of subjectivity (Palmer 1990).

#### **1.1.4. *Must* and negation**

According to Coates (1983), the influence of negation on root *must* is to nullify the main provision. Epistemic *must* does not happen with negation. The missing form of the paradigm is supplied by *can't*. In all other cases in which negation influences the fundamental provision rather than the modal provision, the modal in question is stating epistemic meaning. That is, it is usual with root modals for negation to influence the modal provision. Hence, *must* is abnormal in negation:

- (a) "It has no form for epistemic modality.
- (b) With root modality, negation affects the main predication not the modal predication" (Coates 1983: 46).

Predictably these two correlate with each other, namely *must* cannot state the negation of epistemic necessity since the negation of the fundamental provision has been appropriated by root meaning (Coates 1983).

#### **1.1.5. Time reference of situation**

This section deals with the temporary relationship between the position referred to and the modal meaning. The possibilities with deontic *must* differ in regard to the subjective or



objective meaning. Yet anteriority is improbable with subjective deontic *must* (because it is impossible pragmatically to be obliged to do something in the past), even though occasional examples are obtained where objective deontic *must* is utilised with general necessities as in the following example:

- (34) "In order to get these credits: the course *must* have started before you were 21, and you must not have left the course before the beginning of the tax year in which you were 18" (Collins 2009: 42).

There is no preterite form of *must* itself that may position the modal meaning in past time. The semantic gap is usually completed by *had to* for deontic *must*. However, *must* is still used in backshift, whether deontic in example (35) or epistemic in (36), and in contexts in which an interior monologue might be supposed, whether deontic in example (37) or epistemic in (38):

- (35) "Apparently he had some difficulty in persuading the conservative English monks that the ruined choir *must* be pulled down completely, and even so they kept much of the wall and the eastern transepts with their Norman towers.
- (36) She was born on the 8th which is Roland's birthday and after trying all afternoon to ring him for that from Montecalim we knew something *must* be happening.
- (37) By dusk I came in view of the spires. I took a room in a public house because next morning I *must* present myself spruce for business.
- (38) Refuge in the US or British embassies was not worth thinking about, when both were situated in the middle of town where patrols *must* surely intercept them" (Collins 2009: 42-43).

## 1.2. *Should*

There are four different uses of *should* in modern English: root meaning, epistemic meaning, as a quasi subjunctive and lastly as the hypothetical *would* (Coates 1983). According to Coates (1983), there are two independent findings about the meaning: objective/subjective and weak/strong. The meaning of the strongest *should* has moral obligation or duty whereas

the meaning of the weakest *should* presents advice (subjective) or defines correct procedure (objective). Coates (1983: 60) also explains *should* in his ‘fuzzy set’ that strong obligation/subjective is at its ‘core’ and *should* has weak obligation/objective at its ‘periphery’. At this point, however, Collins (2009) believes that in prototypical cases *must* is stronger and *may* is weaker than *should*, as recommended by the contrast between the compatible combinations *should* probably, *must* confidently and *may* possibly.

On the other hand, *should* is called ‘medium strength modality’ by Huddleston and Pullum (2002: 177) with these examples:

(39) "The meeting *must* be over by now. (Strong)

(40) The meeting *should* be over by now. (Medium)

(41) The meeting *may* be over by now (Weak)."

Take into consideration the effect of replacement epistemic *should* for *must* in example (42):

(42) "He *must* be making an absolute killing" (Collins 2009: 26).

This *should* is weaker than *must* in strength and is offered by the probability of felicitously adding an attendance such as *but he may not be* to the *should* version but not to the actual one with *must*, suggesting that *must* is more powerful than *should* (Collins 2009).

Whereas there is a definite semantic distinction between external and internal negations with weak and strong modality, medium strength is different in the pragmatic proximity of the two negation figures, as in the following example:

(43) "Well I'll find it after I get out of here, which *shouldn't* be very hard"  
(Collins 2009: 27).

It is internal and it can be paraphrased as ‘It is not likely that it will be very hard’, which is pragmatically similar to ‘It is likely that it will not be very hard’ (Collins 2009).

Moreover, according to Collins (2009), *should* states principally deontic modality and secondly, epistemic meaning. No examples have been found of *should* explaining dynamic

modality. Even in the examples where *should* states the desirability of an action obtained not from the communicator or from some legal or moral matter but only from incidental expediency, as in example (44) below, the action is understood to be suggested by the communicator or by some external body symbolising the deontic resource.

- (44) "You may need to grip down and adjust the ball position for some shots but the basics of the swing *should* be the same" (Collins 2009: 44).

### 1.2.1. Deontic *should*

Deontic *should* is generally subjective, representing what the communicator considers 'right', whether morally as in example (45) or an issue of expediency as in (46).

- (45) "One *should* always tell the truth.

- (46) We *should* buy now; the whole market is depressed"  
(Huddleston and Pullum 2002: 186).

They have weaker meaning than *must* because non-actualisation is permitted by them:

- (47) "I *should* stop now but I'm not going to" (Huddleston and Pullum 2002: 186).

With past or present time *should* is usually used if the position is/was not actualised where they transmit criticism:

- (48) "He *shouldn't* have gone to bed so late.

- (49) You *should* be doing your homework instead of watching television"  
(Huddleston and Pullum 2002: 186).

Additionally Coates (1983: 60) observes that deontic *should* is usually used in 'why' questions, as in the following example:

- (50) "Why *should* we keep on paying premiums to insurance companies?"

### 1.2.2. Epistemic *should*

Epistemic *should* is also usually subjective, with the communicator representing a tentative assumption, or evaluation of the probability of the provision, as in examples (51) and (52). Yet occasional instances of objective epistemic *should* are come across in the data, as in example (53), in which the proposition is inferred from known phenomena:

- (51) "Under Wayne Goss' Labor state government, Queensland appears to have set a sensible course towards sustainable development and controlled foreign investment, which *should* ensure the state's continued economic growth into the next century while red tape and bureaucratic intervention remain low.
- (52) You *should* receive notification next week some point telling you whether or whether you haven't got any money from the fund.
- (53) It would be interesting to look at the Xist levels in X M O mice. If the parental imprint is erased before random X inactivation occurs there *should* be no difference between Xist expression in X P O and X M O mice"(Collins 2009: 47).

Similarly with deontic *should*, rhetorical 'why' questions represent epistemic *should*. In this situation the communicator represents irritation with an invalid hypothesis:

- (54) "Uhm why *should* the stratigraphic divisions that we've established in Britain be of use in Australia or China?" (Collins 2009: 47).

### 1.2.3. *Should* as a quasi-subjunctive

In 'that' clauses, *should* functions as a quasi-subjunctive in British English as in the following examples:

- (55) "It is most necessary that we *should* have the funeral bill.
- (56) It was inevitable that Peter Ustinov *should* join the exclusive four-star club by writing, producing, directing and starring in one film" (Coates 1983: 68).

As well as using the 'that' clause, it also consists of verbs such as *demand, ask, decide*:

- (57) "And once again Churchill in early 1915 became the one who decided that the whole thing *should* be abandoned" (Coates 1983: 68).

*Should* can also be used after apparent nouns and *in order that*.

When *should* behaves as a pure quasi-subjunctive, it is semantically blank. However, in lots of contexts where the former adjective or verb is compatible with the perception of weak obligation stated by root *should*, there is merger. That is to say, it is not definite which of the two usages the communicator/writer intended, as both of them are likely (Coates 1983).

#### **1.2.4. *Should* and temporality**

Deontic *should* can be related to a case that is concurrent with the time of the modality, as in example (58), or posterior to it as in (59) below.

- (58) "He was actually one of my students but I don't know anything about supplementaries and the grounds on which you apply for them and stuff like that, and from what I know about this place you *should* never talk about something you don't know about.

- (59) You *should* quit" (Collins 2009: 45).

#### **1.2.5. *Should* and negation**

Both epistemic and deontic *should* ordinarily take internal negation, stating the communicator's commitment to the mistake or undesirability of the proposition. In example (60) the communicator insists the listener avoids taking the objects in question out of the bag, and in (61) the communicator claims the possibility that no substantial influence is occurring.

- (60) "You *shouldn't* take them out of the bag. No taking them out of the bag.

- (61) Overall, there *shouldn't* be any substantial effect either way" (Collins 2009: 48).

There is no distinction between external and internal negation with *should*, as a ‘medium strength modal’. Example (60) can be paraphrased as “*It is advisable that you do not take them out of the bag*” or as “*It is not advisable that you take them out of the bag*”; (61) can be paraphrased as “*It is likely that there will be no substantial effect either way*” or as “*It is not likely that there will be any substantial effect either way*” (Collins 2009: 48).

### 1.2.6. Low-degree *should*

In a situation where the presence of several constructions of *should* appear with low-degree modality:

- (62) "i. It is essential/desirable that he *should* be told. (Mandative)
- ii. We invited her husband too, lest he *should* feel left out. (Adversative)
- iii. We invited her husband too, in order that he *should* not feel left out. (Purposive)
- iv. It’s surprising that he *should* have been so late. (Emotive)
- v. If you *should* experience any difficulty, please let me know. (Conditional)"
- (Huddleston and Pullum 2002: 187).

Huddleston and Pullum (2002) claim that *should* in the first two examples is a less official alternative to a pure form verb (*that he be told, lest he feel*).

### 1.2.7. ‘Preterite’ *should*

In this chapter whether *should* is the preterite counterpart of *shall* or not will be discussed. *Should* does not actually match the meaning of past time (unlike *could*, *would* and sometimes *might*), which would mean that the reply is ‘no’, but the probability of the reply being ‘yes’ is offered by examples (63) and (64) requiring backshift (Huddleston and Pullum 2002: 202, cited in Collins 2009) (in the case of (64) the resolving is located in past time by the semantics of recall), and in (65) and (66), in which the modal consists of unreal conditional in the apodosis:

(63) "He was determined that as prime minister he *should* have greater control over policy areas and that key policy initiatives were implemented by the bureaucracy.

(64) I think I recall resolving with Zix that I *should* wear black tie, or rather, the pink bow tie that she bought for me when we went to a ball in Cambridge, plus the same dinner jacket and matching pants that I wore on that occasion.

(65) Had I spent it in some other hostelry, I *should* now be returning to Oxford with a mind untroubled by any more disquieting burden than my responsibilities as Tutor in Legal History at St George's College.

(66) If he had been taught by vigilant professors as he says, the wanderings of fancy would have been restrained, and I *should* have escaped the temptations of idleness" (Collins 2009: 51).

*Should* is substitutable by *would* in the above examples (and in fact example (66) alternates with *would*), and normally consists of a first person subject (example (63)) being exceptional in this regard). One semantic improvement from the modally for use of *should* is its kindly tentative, formulaic use in the following examples:

(67) "Well I *should* think that it will be more than slightly and it will be less than twenty or thirty years' time.

(68) Oysters I *should* imagine.

(69) I *should* like to help you as much as I can when you come, but unfortunately our flat is too cramped to accommodate more than me and Zix" (Collins 2009: 52).

## Part 2: A further study on *should* and *must*

There are many studies about the relationship between *should* and *must* in the literature. While some scientists believe that *should* is a weaker version of *must* when it expresses ‘probability’ (for example, Leech and Svartvik 1975; Riviere 1981), others do not agree and/or they believe that there is no distinguishable difference between *should*, which is a *medium strength modality*, and *must*, which is an *inherently strong modal* (Verhulst et al 2013). In this part, we will examine in depth the meaning and use of *should* and *must* and we will compare ideas about their relationship.

One of the most recent and interesting studies about *should* is by Verhulst et al (2013). They present a new analysis of *should*, when *should* states root necessity meaning, that is to say, when it refers to the considerations that affect the actualisation of a position that is uttered to be necessary.

- (1) "To apply for this card, applications *should* be made to the Director of Recreation (Root necessity, regulation)" (Verhulst et al 2013: 210).

This example states that there is a rule that if you want to gain this card, it is necessary to speak with the Director of Recreation.

Verhulst et al (2013) focus on *should* in their work as well as *ought to* and *be supposed to* because they refer to necessity that is less repressive than that stated by *must*, therefore, their idea parallels that of Huddleston and Pullum (2002) who put *should* in *medium strength modality*. However, according to Verhulst et al (2013), while the *inherent strength* speciality they share compared to *inherently strong modals* (*must* and *have to*) appears to be a consensus, there are no distinguishing properties between them.

Verhulst et al (2013) claim that the lack of consensus on the semantics of the modal *should* owes to the fact that the parameters used to define them are inadequately or incorrectly described so far. Concepts, such as *source*, *subjectivity* and *strength*, which are frequently resorted to in the debate about root necessity, are in need of explanation. They also indicate a critical debate about the ways in which the concepts *source* and *subjectivity* are used to describe root necessity meanings.



The first parameter handled by Verhulst et al (2013) is *source*. In order to specify use of contexts of necessity modals, researchers have looked at the sources from which the necessities result. If the speaker is the source, that is to say, the communicator who wants the case to be achieved, the modal utterance is qualified as *subjective*. Even though there is no explicit link between *subjectivity* and *source* in the literature, according to Verhulst et al (2013), *subjectivity* is one feasible type of *source*.

Subjective root necessity is usually exemplified as performative, as in example (2):

(2) "“You *must* play this ten times over,” Miss Jarova would say" (Coates 1983: 34).

*Performative* meaning has been utilised for sentences with a modal that include an agentive infinitive and that have the *illocutionary force* of a directive since the communicator has authority over the receiver. We can paraphrase example (2) as ‘I order you to play this ten times over’ (Verhulst et al 2013: 212). However, according to Coates (1983), *performative* meaning is a type of subjective necessity.

The second parameter handled by Verhulst et al (2013) is *strength*. According to Coates (1983), *strength* is a significant parameter of modal verbs. Coates paraphrases the situation of strong root necessity with “it is obligatory/essential that...” and the situation of weak necessity with “it is important that...”. According to Verhulst et al (2013), Coates (1983) fails to ensure criteria for the strong/weak distinction; the paraphrases only explain the distinction but do not help us to categorise samples in terms of *strength*. It is not clear why example (3) is paraphrased with *important* and (4) with *obligatory* and not the other way round.

(3) "If you commit murder, Charlotte, you *must* be punished.

(4) They were told by the Chairman, Mr Jos D. Miller, “You *must* have respect for other people’s property”" (Coates 1983: 34).

They also distinguish between semantic and pragmatic strength. Semantic strength separates *must* and *have to*, which are said to be strong, from *should* and *ought to*, which are said to express weak root necessity meaning (see, among others, Myhill 1995: 162, 174; Høye 1997: 110; Palmer 2001: 73). Both strong and weak modal auxiliaries might be subject to

*pragmatic strengthening or weakening*. For example, while *must* conveys strong root necessity, it might sometimes be pragmatically reduced, as in the summons '*You must try this cake, it's delicious*' (Verhulst et al 2013: 218). Accordingly, *should* conveys weak root necessity meaning but might be used to state stronger necessity meanings, as in example (1), repeated here in (5), which represents a regulation:

- (5) "To apply for this card, applications *should* be made to the Director of Recreation (Root necessity, regulation)" (Verhulst et al 2013: 218).

Several researchers believe that the strength of root necessity links to subjectivity. For example, Huddleston defines *strength of modality* as "strength of the commitment (prototypically the speaker's commitment) to the... actualisation of the situation" (2002: 175, cited in Verhulst et al 2013: 218).

Collins (1991: 149) suggests that if "the source of the obligation is not the speaker... the sense of obligation is less strongly felt than it is in cases with direct speaker involvement". Therefore according to Verhulst et al (2013), Collins (1991: 158, 161) defines the root necessity meanings stated by *should* as differing between strongly subjective and weakly objective. As a consequence of their research, Verhulst et al (2013) suggest a definite difference between subjectivity and strength and offer three degrees of strength: strong, intermediate and weak.

Verhulst et al. (2013) suggest the data is called 'intermediate strength' in example (6), which is in between weak and strong samples.

- (6) "'Make a good breakfast,' Mrs Johnson advised. 'And I've packed you a currant teacake for a 'biting on', though you *should* be at Dudley afore dinnertime.'" (Source: speaker, intermediate strength)" (Verhulst 2013: 220).

This example shows a conversation between Mrs Johnson and a young woman who needs help. Although the results are not life threatening, the necessity is intermediate due to the householder's control over the woman.

Verhulst et al (2013) also emphasise that their classification (weak vs. strong samples) is not binary and they allow for situations where the necessity is neither very nor minimally urgent. Verhulst et al (2013) describe no more than three degrees because finer-grained differences in degree of strength are possibly hard to apply to corpus data.

There are no definite borders between weak, intermediate and strong necessity; evaluating strength is evidently a subjective because it involves the assessment of the discourse context.

Another claim about the meaning and use of *should* and *must* is suggested by Riviere (1981). In Riviere's (1981) paper, assuming that the meanings of probability of *should* and *must* are equal in every situation, they can be substituted for each other, with a small change of meaning, as in examples (7) and (8):

(7) "Our guests *must* be home by now.

(8) Our guests *should* be home by now" (Riviere 1981: 179).

Both modals have a scale of certainty. In this type of modality the communicator expresses his/her thoughts on the degree of certainty, the actual awareness of which is not known to him/her.

These examples show why *should* is weaker than *must*. Although *should* is in the same zone as *must*, in terms of the scale of certainty, it is lower than *must*.

This semantic equivalence between the two modals makes them interchangeable. However, in some situations *should* cannot be substituted by *must* and in others *must* cannot be substituted by *should*, as in the following examples:

(9) "(a) John is a brilliant student, he *must* pass his exam easily.

(b) John is a brilliant student, he *should* pass his exam easily"  
(Riviere 1981: 181).

In example (9), *must* cannot be substituted by *should* because it is obvious that *must* cannot state the probability of a situation placed in the future. However, Riviere (1981) believes that even this fact about *must* needs to be reinvestigated.

(10) "(a) So you know Albert Smith, the poet, you *must* read a lot.

(b) So you know Albert Smith, the poet, you *should* read a lot"

(Riviere 1981: 181).

In this example *should* cannot be replaced by *must*. Riviere (1981) states that a sentence that includes *should* or *must* connects with the other sentence.

Riviere (1981) also examines the meaning and use of *should* and *must* in relation to causality, which is a common kind of association between two propositions, as in the causal relation in example (11):

(11) "(a) You live in Oxford.

(b) You know Prof. Fen.

(c) is the cause of (b)" (Riviere 1981: 182-183).

This means that 'Living in Oxford enables you to know Prof. Fen' (Riviere 1981: 183) and these two sentences can be drawn from example (11):

(12) "(i) (a) You live in Oxford, (b) you *must* know Prof. Fen then

(ii) (a) You live in Oxford, (b) you *should* know Prof. Fen then"

(Riviere 1981: 183).

In example (12) the interaction of causality is in the following:

(a) is the cause of (b).

From (a) the speaker infers (b) (*must/should*) (Riviere 1981: 183).

Example (13) can be inferred by (11) but not by (14):

(13) "(b) You know Prof. Fen, (a) you *must* live in Oxford.

(14) (b) You know Prof. Fen, (a) you *should* live in Oxford" (Riviere 1981: 183).

In example (13) the interaction of causality is:

"(a) is the cause of (b).

From (b) the speaker infers (a) (*must/should*)" (Riviere 1981: 183).

Considering these examples, Riviere (1981) draws the hypothesis that the relation of inference is made to operate from the relation of causality with *must*. By contrast with *must*, in *should* the relation of inference might operate from the reason for the result (12ii), but not from the result of the reason (14). We can account all of the examples illustrated in the class of ‘*should* cannot replace *must*’ in the same way, i.e. the claimed proposition is the result, the inferred proposition is the reason. The inferred proposition can include *must* but not *should*.

Yet, as claimed by ‘*must* cannot replace *should*’ (the impossibility of *must* when the inferred event is posterior to the time of speaking (Riviere 1981: 183)), another issue must be investigated: the time of the case described in the inferred proposition in relation to the time of speaking. In example (15), the inferred proposition is the result.

(15) "(a) John is a brilliant student, he *must* pass his exam easily.

(b) John is a brilliant student, he *should* pass his exam easily"

(Riviere 1981: 183).

As a result of Riviere’s hypothesis (1981), the use of *must* is related to the time of the case defined in the inferred proposition, i.e. if the time is before or concurrent with speaking. On the contrary, *must* cannot be used when the time is after speaking.

The use of *should* cannot show the time but the nature of the inferred proposition, i.e. when the inferred proposition is the reason, *should* is unfeasible, when it is the conclusion, *should* is feasible disregarding the time of the case.

The degree of certainty is intermediate in the use of *should* and *must*. This is the region in which *should* is weaker *must*. Actually, *should* is usually weaker than *must*; there are more occasions of cognisance with *should* than with *must*, as indicated by the respective contextual cohesion of both words when they do not have the interchangeable property.

Although Riviere (1981) claims the abovementioned ideas about the distinction between *should* and *must*, he has some problems with this issue. According to Salkie (2002b, 2009), in order for Riviere to investigate the distinction between *should* and *must* more carefully, it would have been useful to consider the probability/logical inference uses illustrated below:

- (16) "You live in Oxford, you *must* know Prof. Fen then.
- (17) You live in Oxford, you *should* know Prof. Fen then.
- (18) You know Prof. Fen, you *must* live in Oxford.
- (19) You know Prof. Fen, you *should* live in Oxford. (OK in *deontic sense*)
- (20) John is a brilliant student, he *must* pass his exam easily.
- (21) John is a brilliant student, he *should* pass his exam easily" (Salkie 2002b: 85).

The term 'cause' is to be comprehended in the looser feeling of the 'enabling element': therefore in examples (16)-(19), living in Oxford enables the listener to know Professor Fen, and in examples (20)-(21) John's brilliance makes it feasible for him to pass the exam (Salkie 2002b).

Riviere (1981) argues that when two strengthening factors are employed, as in examples (18)-(19), only *must* is feasible. When neither strengthening factors are employed, as in examples (20)-(21), only *should* is feasible. When one strengthening factor is employed, as in examples (16)-(17), then either modal is feasible. Salkie (2002b) ties this analysis to Larreya and Riviere's (1999) investigation, in which *must* is characterised as a quasi-certain necessity, falling only short of neat certainty, whereas *should* includes a weakened shape of necessity due to the past time morpheme that it includes (Salkie 2002b).

Salkie (1996, 2002b) argues that the strengthening and weakening factors in Riviere's statement are inadequate. The underlying factor in his account is that *should* is too 'weak' to

consist of proper contexts, whereas *must* is too ‘strong’ to consist of the meaning. However, we can accept *may* in each of examples (16)-(21); this change occurs from necessity to possibility, but it is not the important point. If probability/logical inference *should* cannot be used in example (19) due to the fact that it is weak, then, *a fortiori*, *may* might be unfeasible too. This also suggests that it shows other aspects of the meaning of *should* which designate its attitude in example (19) (Salkie 2002b).

According to Salkie (2002b), another problem for Riviere (1981) is that there are incomplete combinations of strengthening in his three pairs of examples: (18)-(19) with both strengthening impacts, (20)-(21) with neither, and (16)-(17) with only one. The strengthening impact in examples (16)-(17) is the second one (the communicator argues the result and infers the reason); the inferred event needs to be put in the future to eliminate the second strengthening impact. Instances like examples (22)-(23) encounter these circumstances:

(22) "You know Professor Fen, you *should* recognise him when he arrives then.

(23) You know Professor Fen, you *must* recognise him when he arrives then"

(Salkie 2002b: 86).

Salkie (2002b) observes that Riviere’s (1981) analysis guesses that both of these examples are good, however probability/logical inference *must* is not feasible in example (23). This suggests that the inability of *must* to refer to future time is not due to the fact that future events contain uncertainty, but because of some other condition in the meaning of *must* (Salkie 2002b).

In conclusion, there have been many claims about the meaning and use of *should* and *must* that we have tried to deal with so far. As seen above, Verhulst et al (2013) suggests that whilst most data relating to *should* states weak necessity, intermediate to stronger uses might be used in an authoritative context with *should*. On the other hand, Salkie (2002b, 2009) finds the same problems as Riviere (1981) and has set out an account of modality utilising the prototype theory approach to grammatical sorts. He claims that there are core uses that encounter all the criteria and peripheral ones that do not use some auxiliaries in English (*must* is included in this category). Others (e.g. *should*) decline one or more of the criteria. After examining this account, we can easily say that Riviere’s (1981) claim about *should* and *must*

presents some problems in analysing their meaning and use. We will deal with the relevance theoretic account of *should* and *must* which is more useful in the next part.





### Part 3: The relevance theoretic account of *should* and *must*

#### 3.1. Relevance Theory

In *relevance theory*, Sperber and Wilson (1986, 1995) interpret Grice's focal insight (1989) into communication as an inferential process based on communicator intentions. According to Sperber and Wilson (1986, 1995), there are two categories of *ostensive-inferential* communication intention:

- a. *Informative intention*: The intention to explain something to a hearer.
- b. *Communicative intention*: The intention to inform an audience of one's informative intention (Wilson and Sperber 2004). To provide communication in this way, an *ostensive stimulus*, which is a stimulus "designed to attract an audience's attention and focus it on the communicator's meaning", has to be engaged by the speaker (Wilson and Sperber 2004: 611). Appropriate communication pertains to the implementation of communicative intention.

Relevance theory is based on a fundamental problem in human cognition. This arises from the incredible volume of information that our senses continually screen and which is stored in our memory, and the reasonable results that our inferential framework can draw from all of this data at any given time. The questions we might find answers to are: How do we understand which input is necessary? How do we choose which contextual assumption we ought to use in a period of input? And how do we create and arrive at consequences? Sperber and Wilson (1986, 1995: 260) claim that these inquiries are answered by applying the *Cognitive Principle of Relevance*: "Human cognition tends to be geared to the maximisation of relevance". Sperber and Wilson (1986, 1995) define relevance as the probable property of distinct sorts of input to the cognitive process, and might be interpreted in terms of the measure of effort it takes to process the data, and the positive cognitive influences the individual may interpret from it (Carston 2011).

According to Carston (2004), Relevance Theory suggests that the propositional content of a sentence covers the linguistic content of it.

In other words, in relevance theory, pragmatics play a significant role in interpreting the communicator's utterances. It is a 'logical form', or an incomplete conceptual representation. It is a schema, which decodes pragmatics to manufacture a propositional form as will be explained below (Sperber and Wilson 1986).

Sperber (2002) argues that communication causes linguistic coding and decoding, however, the output of the linguistic decoding process can only be known to the receiver, who is privy to evidence about the intentions of the speaker. The output of the linguistic decoding process is in an incomplete logical form, therefore it must be completed by the addressee to transmit its full propositional form. This is a pragmatic process of relevance theory. Now we are going to deal with two main relevance theoretic accounts of modals. Firstly Groefsema's (1995) and Papafragou's (2000) ideas are going to be examined and then we are going to debate modality in issues related to the semantics-pragmatics interface based on these two ideas.

### 3.2. Groefsema's proposals

Groefsema (1995) argues in her paper that the standard polysemous view does not give a unitary account of the meanings of a few modals (*can*, *may*, *must* and *should*), although there is no definite problem between the polysemous view and the unitary meaning. Therefore, the unitary meanings are enough to explain the range of interpretations of these four modals. Suggesting unitary meanings means that a theory of pragmatics (such as relevance theory) should be evaluated in order to reach the distinct interpretations of these four modals in use. She also recommends that unitary meanings can be given, however, sentences including these modals should be interpreted according to the principle of relevance, as suggested by Sperber and Wilson (1986).

In evaluating the polysemous view, Groefsema (1995) explains a number of problems that this approach faces. The meanings of the English modals have been equated with the philosophical categories of modality, but in terms of accounting for the modals, they are insufficient and further categories have been proposed as a result of these philosophical categories. The problem is that, although there are a lot of elaborate categories of modality, there is no one-to-one correspondence between the distinct meanings of the modals and the degrees and kinds of modality that one can separate.

Another problem is that the polysemous view has to encounter the fact that many examples of the use of the modals do not adapt to any of the recognised meanings as in the following example:

(1) "You *must* come to dinner sometime" (Groefsema 1995: 57).

This sentence is not ordinarily interpreted as (1a) and (1b), but rather as (1c):

(1) "(a) It is necessary that you come to dinner sometime.

(b) You are obliged to come to dinner sometime.

(c) We would like you to come to dinner sometime" (1995: 57).

On the other hand, Groefsema (1995) mentions Sweetser's (1989) proposal about the polysemous view as well as the standard polysemous view. According to this idea, the relationship between the distinct meanings of the modals is more systematic than the standard polysemous view, however, Sweetser (1989) refuses a monosemous approach. Instead of a unitary approach, she examines the modals from the view that a structured system of metaphors emphasises much polysemy in language. She claims that the language of the external world is generally applied to the internal mental world and can account for the distinct meanings of the modals. Sweetser (1989) argues that the root senses of the modals (inside the domain of the *external world*) are arranged in the internal (epistemic) domain and the root and epistemic senses are different, however, there is an ordered metaphorical match between the two domains (Groefsema 1995). The reason for choosing the polysemous view is that:

'It is not the case (as we might expect if the modals were simply monosemous) that all root modals must/can have epistemic uses – this is neither historically true for the English modals nor a cross-linguistic universal' (Sweetser 1989: 68, cited in Groefsema 1995: 58).

According to Groefsema (1995), there are many questions about Sweetser's (1989) ideas that the modals are uncertain between an epistemic and a root sense. Firstly, although it is certain that the modals used to state root meanings in Old English, they were not used epistemically. Secondly, though a metaphorical match was liable for root meanings of the modals, it is not clear why this would imply that once that match is installed there ought still to be two different senses, rather than monosemous meaning that is applied to the distinct (internal and external) domains. Groefsema (1995) rejects Sweetser's (1989) proposal that if the modals had a unitary meaning, it might be expected that root modals must have epistemic uses. Groefsema (1995) argues that Sweetser (1989) does not clarify why this should be the case.

Another problem about Sweetser's (1989) suggestion is that there are cases where epistemic and root interpretations merge completely. If the modals are uncertain between epistemic and root meanings then states of merger would not be expected to occur; rather, all states including modals should be able to be disambiguated.

Now we turn to Groefsema's (1995) ideas about the *unitary meanings of the modals*. As a response to Palmer's idea (1989) that no clear evidence, theoretical or descriptive requirements were found for basic meanings, Groefsema (1995) believes that using merger, indeterminacy and uncategorisable uses of the modals justifies clarifying the basic meanings of the modals rather than their ambiguity. However, according to Groefsema (1995), proposing monosemous approaches to modals is in itself an insufficient method by which to present an acceptable account of how the modals are interpreted. Earlier monosemous-based proposals were deemed to be inaccurate.

Ehrman (1966, cited in Groefsema 1995) explains how different interpretations of modals function as '*overtones*'. However, she fails to explain at what point these *overtones* become the most important factors, postulating that these components were adapted as a result of the context (Groefsema 1995).

Kratzer's (1977, 1981, 1991, cited in Groefsema 1995) analysis of modality is based on an outline reviewing possible worlds. In conceivable world semantics, articulations of sentences are taken as uttered propositions. A proposition is related to the situation in possible worlds. He tries to defeat Ehrman's (1966) problem by proposing essential implications for modals, which are then supplemented by the expression '*in view of*' (Groefsema 1995).

To clarify how modality functions in his framework, Kratzer (1977, cited in Groefsema 1995) presents three variables that together underlie modal operators: the *modal base* (*conversational background*), *ordering sources* and *modal relation*. The *modal base* includes a set of presumptions against which the modal connection can be comprehended. *Ordering sources* is an alternate *conversational background* included in modal reasoning. The *modal relation* is fundamentally the connection of logical consequence or compatibility.

Groefsema (1995: 60) explains the problems associated with Kratzer's (1977) study, stating, "there has to be a unique '*conversational background*' for some sentences to express a proposition".

Groefsema's (1995) study is based on a relevance theory framework, which sets out to cross barriers between unitary semantics and the different pragmatics of modals. She suggests the following thesis: ("where p is the proposition expressed by the rest of the utterance" (Papafragou 2000: 36)):

*"must:* p is entailed by the set of all propositions which have a bearing on p

*should:* there is at least some set of propositions such that p is entailed by it".

As a result, she tries to show the distinct interpretations of the proposed unitary meanings. She claims that it is not possible to get all the distinct interpretations by postulating that the distinct meanings of the modals can be represented at the level of semantics. However, she has shown how a unitary semantics together with a notion of the interpretation process (as in relevance theory) explain an account of how the modals get their distinct interpretations, which is known as her *fruitful approach* (Groefsema 1995).

### 3.3. Papafragou's proposals

Papafragou's book (2000) proposes a systematic analysis of modals within the frame of relevance theory (Sperber and Wilson 1995). Papafragou's aim in this study is to assist the characterisation of the context-dependence of modal statements and explain the interaction between pragmatic inference and lexical semantic information. She focuses on a representative example of modals in English. She claims that the semantically encoded content of modal verbs (*must, may, can, should, ought to*) immensely underdetermines the interpretations received by the verbs during utterance comprehension. That is, she argues that "the English modals have unitary semantic content which, in conjunction with different pragmatic considerations, gives rise to an array of distinct contextual readings" (Papafragou 2000).

Papafragou (2000) explains the lexical items which have a well-known property in native language can convey distinct meanings in distinct positions of utterance. Samples of the context-dependence of lexically stated meanings contain the following:

(2) "a. The lawyers approached the *bar* to have a word with the judge.

b. The lawyers approached the *bar* and ordered two martinis.

- (3) a. I asked her many times but got no *answer*.  
       b. I rang her many times but there was no *answer*.
- (4) a. I want to fly like a *bird*.  
       b. A *bird* was flying above the corpses" (Papafragou 2000: 1).

These examples correspond with different semantic alternatives in traditional analysis. The sense of *bar* is lexically ambiguous between *court area* and *area serving drinks* in example (2). In example (3), there are two separate but connected meanings of *answer*, therefore *answer* is polysemous. *Bird* has semantically one meaning, however, its contextual interpretation has distinct features based on pragmatic considerations. In example (4a), it seems that *bird* is included in the category BIRD and is quite close to the prototype – a bird like a swallow. On the other hand, in example (4b), bird is like a vulture. As seen above, delineating polysemy is always hard and separating its area from both ambiguity and monosemy is the hardest part.

The aim of the semantics and pragmatics of the English modal verbs chapter in Papafragou's book is to strike a moderate path between radical monosemy- and polysemy-based accounts. She offers a rich semantics sufficient to allow for diversity in content in the different modals, however, it is underspecified to the deduction of extensive pragmatic until it inputs a finished truth-evaluable description (the proposition stated by the modal expression). She has tried to combine epistemic and root interpretations and to indicate how they emerge from what is a widespread fundamental meaning for most verbs, but epistemic interpretations have an important difference from root interpretations: epistemic concepts belong to human theory-of-mind skills, and thus epistemic interpretations express meta-representations in a way that root interpretations do not. However, although it seems that there is a difference between epistemic and root interpretations, Papafragou (2000) cannot exactly explain *metarepresentation hypothesis* for epistemic modals.

Salkie (2002a) recognised that Papafragou's analysis of modals goes against Palmer's (1990) ideas, which treat them as ambiguous, and Sweetser's (1989) opinion, which regards them as polysemous. Papafragou (2000) believes that acquisition of modals by children and the history of modals are evidence to support her theory.

Palmer (1990) claims an approach to the systematic meaning of diversity of modals, which is massive lexical ambiguity. From this viewpoint, every modal encodes a specific cluster of different modalities, as indicated by the following example of *must*:

(5) "a. You *must* leave immediately.

You are obliged to leave immediately. (Deontic)

b. I *must* accept your resignation

The circumstances force me to accept your resignation. (Neutral dynamic)

c. You *must* just go around asking these indiscreet questions.

It is a compulsion for you to go around asking... (Subject-oriented dynamic)

d. You *must* be joking.

You are certainly joking. (Epistemic)" (Papafragou 2000: 22).

However, according to Papafragou (2000), this approach has several explanatory and descriptive problems. Despite the fact that the basic point of this approach is the rigid difference between diverse non-epistemic and epistemic meanings, Palmer and Coates cannot realise a variety of intermediate cases, in which, for a wide range of reasons, the suggested semantic differences which are inert, indistinctive or inadequate. Papafragou (2000) believes the approach might be able to handle matters of style, politeness or illocutionary force.

In polysemy, English semantics include the metaphorical mapping of epistemic and root senses. However, individual formation of each modal is part of pragmatic interpretation processes to determine which of the two areas (epistemic or root) is the intended one. Papafragou (2000) explains the problems with this account. Her ideas parallel those of Groefsema (1995) and she criticises Sweetser's ideas as mentioned above.

Monosemy, according to Papafragou (2000), adopts a widespread core for the meaning of modals and uses it as a base for deriving the giant variety of possible interpretations that the modals might contextually obtain. She mentions that earlier monosemous views of modals include those of Ehrman (1966), Wertheimer (1972), Tregidgo (1982), Perkins (1983) and

Haegeman (1983), and then she reviews Kratzer's (1977) and Groefsema's (1995) proposals which have adopted certain formal semantics (Papafragou 2000).

In the following section, Papafragou (2000) presents a semantic analysis which is similar to both Kratzer's and Groefsema's accounts in which modals are context-dependent statements, in that their semantics are determined by the meaning they communicate. She argues that she partly agrees with Kratzer that the semantic content arises from two components:

'... a logical relation  $R$  (basically: entailment or compatibility), and a domain  $D$  of propositions. Roughly, then, what the modals are used to convey is that a certain proposition  $p$  bears a certain logical relation  $R$  to the set of propositions in a domain  $D$  ( $R(D, p)$ )' (Papafragou 2000: 40).

However, Salkie (2002a) believes that Papafragou's book shares the merits of both Klinge (1993) and Groefsema (1995) in relevance-theoretic accounts of modals whilst it is superior to them. Even though it is a PhD thesis, it is an exhaustive study on modality; she only refers in any detail to the research mentioned so far and to Kratzer (1991), to whom she owes a great debt.

Papafragou's (2000) analysis of the semantics progresses in three stages. Firstly, she improves the concept of fields of propositions, which might serve as restrictors for modal managers. Secondly, she presents semantic analyses for examples of the modals. Thirdly, she spells out the particular sorts of context-dependence displayed by modals by stimulating pragmatic enrichment and saturation analyses to cope with individual modals.

She argues that these words signify a relation between the proposition  $p$  and the context. In accordance with relevance theory, the context behaves as a domain  $D$  of propositions (Salkie 2002a). *Should* and *must* are analysed as follows:

"*must*:  $p$  is entailed by all the propositions in  $D$ . ( $D$  is unrestricted)

*should*:  $p$  is entailed by all the propositions in  $D$  ( $D$  is normative)"

(Papafragou 2000: 43).

According to Papafragou (2000), *must* is semantically more general than *should*, because there are no restrictions on the worth of the domains of propositions which might serve as restrictors of the modal director (i.e. the  $D$  value is unspecified).



In *must*, the empty slot in its lexical semantics needs to trust the online procedure of pragmatic comprehension for completion; in *should* a semantically specified restrictor proposes a notional search-space, which might be further restricted pragmatically, if essential. In this perception, to recall a distinction between ambiguity and polysemy within a relevance-theoretic framework, *must* requires pragmatic saturation of an unspecified semantics, whereas *should* may be exposed to free pragmatic enrichment of an already complete, semantic content. Moreover, *must* is a case of domain selection, whilst *should* is an example of domain restriction. Making this distinction is not obvious, therefore she has arguments that it is not possible to reduce saturation-free enrichment, and then she shows the differences between two processes, in that enrichment operates freely (i.e. optionally) and on the other hand saturation is applied in a compulsory fashion. Papafragou (2000) also proposes an alternative approach to the semantics of the modals using all modals as complete (*albeit still underspecified*) semantic operators and she illustrates *must*. It might be assumed that the semantic representation of the verb lacks the slot absolutely. Thus, the semantic entry for *must* would be:

(6) "*Must*: p follows from D" (Papafragou 2000: 44).

In example (6), the proposition hidden under *must* follows from a bunch of propositions in *D*, without considering the value of *D* (assuming that *D* satisfies logical consistency, i.e. includes no contradictions). This situation underlies all semantic accounts of *must* which the verb analyses in the light of definite (*logical/alethic*) necessity; in this approach, the kinds of necessity which *must* is proficient to convey in native language are in the yields of pragmatic. This situation, then, primarily reduces saturation to a form of free enrichment (Papafragou named it the maximal restrictor solution). If generalised to quantificational equipment in native language, the maximal restrictor solution would insinuate that maximal quantificational domains default for several expressions.

#### **Part 4: Some examples about the different uses of two modals and their interpretation process**

When all of these studies about the meaning and use of *should* and *must* are taken into consideration, I infer that in some cases, *must* simply expresses a stronger necessity than *should*. So compare:

"I *must* stop now.

I *should* stop now."

Another significant analysis relates to example (47) in part 1: 'I *should* stop now but I'm not going to.' In this example, we can add 'but I'm not going to' after *should* but not after *must*.

In other cases, *must* and *should* seem to be very different. Look at these epistemic examples from part 1: 'A: What has happened to Ed? B: He *must* have overslept.' (22) and 'You *should* receive notification next week at some point telling you whether you have or haven't got any money from the fund.' (52).

In these examples, if we put *should* in example (22) [He *should* have overslept] or *must* in example (52) [You *must* receive notification...], a very different meaning appears.

Therefore *should* and *must* behave in similar ways in some cases like example (47) but in very different ways in other cases. As Salkie suggests, in example (47) they behave in similar ways, because the difference between them is just *strength of the modality*. Also, in Riviere's (1981) examples, we show some cases in which *should* just looks like a weaker version of *must*, and other cases in which the difference is more complex.

In this part, therefore, we will handle some examples from the sources used in this study and we are going to examine their meaning and for each of them substitute the other modal and we are trying to discuss what happens.

##### **4.1. Interchangeable *should* and *must***

*Should* as a modal verb has a meaning of weaker *must* or *must* as a modal has a meaning of stronger *should* in some situations and the meanings change in terms of strength of modality.

In this situation, the modal can be replaced by other one. That is, *should* and *must* behave in similar ways. As the following examples:

(1)(a) "Our guests *must* be home by now" (Riviere 1981: 179). **A SCALE OF CERTAINTY= EPISTEMIC MUST**

(b) "Our guests *should* be home by now."

(2)(a) "It is twelve, he *must* be at work now" (Riviere 1981: 181). **EPISTEMIC MUST**

(b) "It is twelve, he *should* be at work now."

(3)(a) "According to the schedule, they *must* be working on the engine now" (Riviere 1981: 181). **EPISTEMIC MUST**

(b) "According to the schedule, they *should* be working on the engine now."

(4)(a) "The postman has just driven past, it *must* be twelve." **EPISTEMIC MUST**

(b) "The postman has just driven past, it *should* be twelve" (Riviere 1981: 188).

(5)(a) "According to the schedule, they *must* have reached the meeting point now/yesterday." **EPISTEMIC MUST**

(b) "According to the schedule, they *should* have reached the meeting point now/yesterday" (Riviere 1981: 181).

(6)(a) "If someone in my position (of Prime Minister) is saying I believe this is the best opportunity for lasting peace, ...you *should* listen to what I have to say" (BNC cited in Verhulst et al. 2013: 215). **DEONTIC SHOULD**

(b) "If someone in my position (of Prime Minister) is saying I believe this is the best opportunity for lasting peace, ...you *must* listen to what I have to say"

(7)(a) "The mountains *should* be visible from here" (Quirk et al 1985: 227).  
**EPISTEMIC SHOULD (weak epistemic)**

(b) "The mountains *must* be visible from here."

(8)(a) "They say they have been innocent victims in a crime for which the law says they *must* also be punished" (BNC). **DEONTIC MUST**

(b) "They say they have been innocent victims in a crime for which the law says they *should* also be punished."

(9)(a) "If you're on holiday in France you *must* visit a Chateau" (Collins 2009: 35).  
**DEONTIC MUST**

(b) "If you're on holiday in France you *should* visit a Chateau."

(10)(a) "So I *must* ask you: Will you come to Scone and make it publicly known that this kingdom is your prime care?" (BNC). **DEONTIC MUST**

(b) "So I *should* ask you: Will you come to Scone and make it publicly known that this kingdom is your prime care?"

(11)(a) "You are his dearest friend, and *must* act accordingly" (BNC). **NECESSITY= DEONTIC MUST**

(b) "You are his dearest friend, and *should* act accordingly."

(12)(a) "But this does not mean that a dispute about the interpretation of the lease *must* be decided against the landlord if it possibly can be" (BNC). **DEONTIC MUST**

(b) "But this does not mean that a dispute about the interpretation of the lease *should* be decided against the landlord if it possibly can be."

(13)(a) "'Oh,' she said severely, 'you *must* kiss the hand, Monsieur Sam" (BNC). **DEONTIC MUST**

(b) "'Oh,' she said severely, 'you *should* kiss the hand, Monsieur Sam."

(14)(a) "To be healthy, a plant *must* receive a good supply of both sunshine and moisture. " **ROOT NECESSITY= DEONTIC MUST**

(b) "To be healthy, a plant *should* receive a good supply of both sunshine and moisture" (Quirk et al 1985: 225).

(15)(a) "You *must* be back by ten o'clock ('You are obliged to be back...'; 'I require you to be back...') **DEONTIC MUST**

(b) You *should* be back by ten o'clock" (Quirk et al 1985: 225).

(16)(a) "I'm afraid I *must* go now: I promised to be at home at ten. **DEONTIC MUST**

(b) I'm afraid I *should* go now: I promised to be at home at ten" (Quirk et al 1985: 225).

When we consider these examples, I can easily say that there is no problem with deontic meaning. When *should* substitutes for deontic *must*, they behave in similar ways. The difference between these two sentences is that the meaning of *must* is stronger than *should*.

The deontic meaning, therefore, is less interesting for this study. Epistemic meaning will be dealing deeply with the following.

#### **4.2. *Must* cannot be used instead of *should***

In this kind of situations, when *must* replace *should* the result is bizarre or impossible as the following examples:

(17)(a) "John is a brilliant student, he *should* pass his exam easily" (Riviere 1981: 181).

**EPISTEMIC SHOULD**

(b) "John is a brilliant student, he *must* pass his exam easily" (Riviere 1981: 181).  
(it cannot be imaged in deontic context).

(18)(a) "The plane *should* land in a few minutes"(Riviere 1981: 181). (**weak prediction**) **EPISTEMIC SHOULD**

(b) "The plane *must* land in a few minutes" (Riviere 1981: 181).

(19)(a) "It is ten, John *should* start work two hours from now" (Riviere 1981: 188).

**EPISTEMIC SHOULD**

(b) "It is ten, John *must* start work two hours from now" (Riviere 1981: 188).

(20)(a) "The postman has just driven past, it *should* be twelve in five minutes"  
(Riviere 1981: 189). **EPISTEMIC SHOULD**

(b) "The postman has just driven past, it *must* be twelve in five minutes"  
(Riviere 1981: 189).

(21)(a) "The floor *should* be washed at least once a week" (Quirk et al 1985: 227).

**DEONTIC SHOULD**

(b) "The floor *must* be washed at least once a week."

(22)(a) "Sarah *should* be home by now, but she isn't" (Quirk et al 1985: 227).

**DEONTIC SHOULD**

(b) "Sarah *must* be home by now, but she isn't."

(23)(a) "The job *should* be finished by next Monday" (Quirk et al 1985: 227).

**EPISTEMIC SHOULD**

(b) "The job *must* be finished by next Monday." (It cannot be epistemic because the meaning is future).

(24)(a) "They *should* have met her at the station" (Quirk et al 1985: 227).

**DEONTIC SHOULD**

(b) "They *must* have met her at the station."

When these samples are deeply examined, it is obvious that epistemic *should* is a bit strength. Papafragou (2000) also claims that the meaning of epistemic *must* is certainly not the same as epistemic *should*. Especially examples (22) and (24) need more explanation. Both of them have the same context and the differences between these two meaning is about time. While (22) illustrates present time, (24) represents past. We are going to deal with Papafragou's (2000) and Groefsema's (1995) interpretation process about this kind of examples in section 4.4..

#### 4.3. *Should* cannot be used instead of *must*

In this kind of situations, when *should* replace *must* the result is bizarre or impossible as the following examples:

(25)(a) "If I'm older than Ed and Ed is older than Jo, I *must* be older than Jo"

(Huddleston and Pullum 2002: 181). **EPISTEMIC MUST**

(b) "If I'm older than Ed and Ed is older than Jo, I *should* be older than Jo."

(26)(a) "So you know Albert Smith, the poet, you *must* read a lot" (Riviere 1981: 181).

**EPISTEMIC MUST**

(b) "So you know Albert Smith, the poet, you *should* read a lot"

(Riviere 1981: 181).

(27)(a) "I can't hear any noise, he *must* be asleep" (Riviere 1981: 181). **EPISTEMIC**

**MUST**

(b) I can't hear any noise, he *should* be asleep" (Riviere 1981: 181).

(28)(a) "He looks tired, he *must* be working now too much these days"

(Riviere 1981: 181). **EPISTEMIC MUST**

(b) "He looks tired, he *should* be working now too much these days"

(Riviere 1981: 181).(*should* cannot be used for explanation).

(29)(a) "Harry is climbing in through the window, he *must* have forgotten his

key" (Riviere 1981: 181). **EPISTEMIC MUST**



(b) "Harry is climbing in through the window, he *should* have forgotten his key"  
(Riviere 1981: 181).

(30)(a) "I can't see anyone outside, the dog *must* have been dreaming"  
(Riviere 1981: 181). **EPISTEMIC MUST**

(b) "I can't see anyone outside, the dog *should* have been dreaming"  
(Riviere 1981: 181).

(31)(a) "The postman has just driven past, it *must* have been twelve five minutes ago"  
(Riviere 1981: 189). **EPISTEMIC MUST**

(b) "The postman has just driven past, it *should* have been twelve five minutes ago" (Riviere 1981: 189).

(32)(a) "John is all spruced up, he *must* be going to a part tonight"(Riviere 1981: 184).  
**EPISTEMIC MUST**

(b) "John is all spruced up, he *should* be going to a part tonight"  
(Riviere 1981: 184).

(33)(a) "The Smiths *must* have a lot of money" (Quirk et al 1985: 224).  
**EPISTEMIC MUST**

(b) "The Smiths *should* have a lot of money."

(34)(a) "A: What has happened to Ed?

B: He *must* have overslept" (Huddleston and Pullum 2002: 181).  
**EPISTEMIC MUST**

(b) "A: What has happened to Ed?

B: He *should* have overslept."

Huddleston and Pullum (2002) explain this epistemic subjective *must* as a pragmatic weakening. The real problem is about our subject in this example. Although there are lots of approach to these two modals explain the differences and similarities many studies do not have definite explanation about these two examples. In (34)(a), the speaker suggest normally and listeners do not have certain evidence and they can rely on the communicator. On the other hand, in (34)(b), there is a plan and it is hard to find a norm (we will mention the section of Papafragou's interpretation) in this situation. The real problem, therefore, is about that kind of examples.

Therefore, the meaning and use of *should* and *must* should not be thought of in terms of different types of modality because different types of modality can be interpreted in various ways depending on the point of view as this situation has been seen above; consequently we are going to deeply explain Groefsema's (1995) and Papafragou's (2000) interpretation process of *should* and *must* in following.

#### **4.4. The interpretation process of *should* and *must***

##### **4.4.1. Papafragou's interpretation**

##### **4.4.1.1. The interpretation of root modality**

Papafragou (2000) claims that one of the context-dependent expressions is modals, which need to relate to inferential pragmatic processes in order to complete the knowledge which they semantically encode. The reason for understanding different kinds of modal meanings is the sort of inferential manipulation they allow.

Now we turn to the explanation about the pragmatics of *must*:

Imagine that Mary is in a freezing room and express (35):

(35) "I must sneeze"

(35') "p[Mary sneezes] is entailed by Dunspecified" (The logical form of the sentence)(Papafragou 2000: 59).

The listener directly understands from this sentence that Mary's sneezing is an essential outcome resulting from her physical circumstances and the condition in the location. This requires that the inarticulate domain D in (35') is obligated to be pragmatically restrained to a sub-set of actual propositions. The following three examples show other kinds of contextual enrichment of the semantic context of *must*:

(36) "In opening a game of chess, the players *must* move a pawn

(37) The President *must* formally approve the new Government before it can undertake its duties

(38) The accused *must* remain silent throughout the trial" (Papafragou 2000: 59-60).

(36) refers to a necessity corresponding with the rules of a game, (37) expresses a necessity corresponding with the Constitution and (38) gives a necessity corresponding with judicial rules.

The word '*must*' indicates a type of restrictive propositional domain. (39) is a slightly more complicated sample:

(39) "I *must* lose weight" (Papafragou 2000: 60).

Imagine that the communicator, Amy, needs to be more charming and notices that losing weight is the only way to succeed at her goal. Therefore, (66) is a type of *practical syllogism*. Practical syllogism can be demonstrated by philosophers by the following general form:

(40)(a) "I want to attain y

(b) Unless z is done, y will not be attained

Therefore, z *must* be done" (Papafragou 2000: 60).

(41)(a) "q[Amy becomes attractive]  $\in$  Ddes

where Ddes constitutes what is desirable for Amy

(b) {p[Amy loses weight]  $\in$  Dfactual }  $\vee$  { ~q[ Amy becomes attractive]  $\in$  Dfactual }

Therefore, p is entailed by Dplan,

where Dplan = Ddes  $\cup$  Dfactual" (Papafragou 2000: 60-61).

Dplan is a kind of domain which occurs as a result of Amy's plans. In (41), in order to achieve a desirable outcome, losing weight is an essential. *Must* is generally used for conveying this kind of necessity.

In Papafragou's (2000) account, the proposition that the communicator considers desirable cannot be detached from the surface construction of the sentence in (39).

There is only a small difference between the kind of interpretation in (39) and the quite deontic (obligation-imposing) uses in (42):

(42)(a) "You *must* write 100 times 'I will never yawn in class again'

(b) You *must* love your fellow humans" (Papafragou 2000: 61).

A kind of 'obligation' interpretation emerges in the event of quasi-imperative offers:

(43)(a) "We *must* go for a drink one day

(b) I absolutely *must* walk home with you

(c) You *must* come and visit us sometime" (Papafragou 2000:61).

Especially in (43)(a), the sentence conveys that it is the communicator's desire which requires that they go for a drink. Since the addressee has to have sensitivity in the social rules, the sentence is going to be interpreted as an emergency form of offer (Papafragou 2000).

If we mention the pragmatics of *should*, it would appear that the example of the modal, which conveys an obligation of a weaker kind than *must*, gives the following:

(44) "You *should* clean the place once in a while

(44') p[You clean the place once in a while] is entailed by D<sub>normative</sub>"

(Papafragou 2000: 62).

In its semantically stated restrictor, *should* utters a necessity associated with appearing norms, or stereotypes. The comprehension of *should* relies fundamentally on the kind of structured information humans generally own about the standard course of facts, which has been mentioned by different writers in cognitive psychology. According to those norms, the deontic interpretation of *should* becomes indistinct from the apparent interpretation of *must*. The following examples show the kinds of necessity uttered by *must* and *should* (Papafragou 2000):

(45) "In this game, you *must/should* carry an egg in a spoon and be careful not to drop it" (Papafragou 2000: 62).

(46) "Chief scout to the younger boys:

a. You *must* be back by midnight, although it's fine by me if you aren't

b. You *should* be back by midnight, although it's fine by me if you aren't"

(Papafragou 2000: 63).

In (45), the sentence is slightly worse. Although the rules of the game represent a normative domain, this game is removed from the characteristic game activity.

In (46), the distinctions in admissibility interest the choice of the restrictor: In (46)(a)'s most reachable interpretation, it can be translated as enforcing an obligation on the young scouts; the attendance of the expression therefore becomes inadmissible. In (46)(b), although it suggests the same interpretation, it is also exposed to another reading; the chief scout reports what is required by the norms corresponding with a scout's attitude. The chief scout does not

however deal with these norms, and thus, he is not going to utilize his authority to force them (Papafragou 2000).

Papafragou (2000) claims that *should* does not imply a duty, as the past tense of *shall*, but has gone into the modal system as a peculiar item. However, *should* still has a meaning far from its original meaning; it does not relate to the other root interpretation of it (e.g. using *should* as a hypothetical *would*). This is demonstrated by (47)(a), as a hypothetical sign with a contrary word-order as in (47)(b), or with an apparently null contribution to sense in the quasi-subjunctive structure in (47)(c):

(47)(a) "I *should* be grateful if you could bear my case in mind

(b) *Should* you require any further assistance, please feel free to contact us

(c) I do not desire that I *should* be left alone in this task (Papafragou 2000: 63).

#### 4.4.1.2. The interpretation of epistemic modality

Papafragou's (2000) proposal is that there is a certain sense in which states of epistemic modality take a representation model of the mind. In epistemic uses of these modals (*may*, *must*, *should*, *ought to*) communicate a rational relationship between a definite proposition and the communicator's belief-set. Consider:

(48) "Some of the neighbours *must* have seen the burglars" (Papafragou 2000: 72).

The attached proposition (q) has a certain truth-value in the present, because there is an event that either took place or did not in the past. The communicator has not conceived a real propositional domain as the worthwhile of D. If she had obtained all the facts, and they commonly entailed q, she could have stated the unmodalised equivalent of (48). On the most rational interpretation of the sentence, the communicator does not have the information to support what happened at the related time-slot in the past (i.e. during the burglary). Consequently, all she is able to do is speculate on the foundation of incomplete and partially-supported proof that she rebuilds from common encyclopaedic and situation-specific knowledge about burglaries. Therefore, q is offered as a necessary result which shows an epistemic frame domain.

The enriched logical form of (48):

(48') "[q[Some of the neighbours have seen the burglars]] is entailed by D<sub>bel</sub>.

(D<sub>bel</sub> is the domain consisting of the speaker's beliefs;

Where the double brackets indicate metarepresentation)"

(Papafragou 2000: 72).

According to Papafragou (2000), Kratzer's idea about root and epistemic modality that "involves a different categorisation of the facts" (Kratzer, 1981: 52, cited in Papafragou, 2000: 73) is also captured by this account. In deontic interpretations, the modal domain contains propositions which express an explanation of cases or affairs; from the epistemic side, the modal domain D is connected by a number of propositions that constitute part of the communicator's belief-set and therefore, join in her mental life.

It is necessary to clarify the apparent puzzles in respect of the relationship between a non-modalised claim and a claim including the epistemic *must*. As Lyons (1977) remarks, example (49)(a) is sensed to be more powerful than (49)(b) and to transmit a higher degree of communicator promise:

(49)(a) "San Marino is the country with the highest life expectancy in the world

(b) San Marino *must* be the country with the highest life expectancy in the world" (Papafragou 2000: 73).

From a relevance theoretic account, (49)(b) is essentially expected to manufacture distinct cognitive effects, compared with (49)(a) which is more complex semantically and structurally, and more expensive with regard to the processing effort. This prediction can also be used in other epistemic utterances, which entail the facility of a metarepresentation as in (50):

(50)(a) "There are nine planets in our solar system

(b) As far as I know/In my view, there are nine planets in our solar system" (Papafragou 2000: 74).

The analysis can easily be applied to the other modals, such as *should*:

(51) "That *should* be the plumber (on hearing the doorbell ring)"

(Papafragou, 2000: 74).

The communicator is not able to guarantee that the conditions in the real world will come to pass and therefore, guarantee that *p* is true. The only proof she has for the hidden proposition arises from her convictions which arise from the normal course of incidents. The plumber is anticipated to arrive sometime after the communicator called him. This expresses why concepts, such as 'prediction', 'expectation' or 'probability', play a role in the semantic entrance of *should* with respect to those convictions. (see Ehrman, 1966; Walton, 1988; Bybee et al 1994; respectively, cited in Papafragou 2000: 75).

This kind of discussion affords a statement of the hidden differences between *should* and *must* when they function as epistemic meanings. Consider:

(52)(a) "John *must* be easy to talk to

(b) John *should* be easy to talk to" (Papafragou 2000: 75).

According to Lakoff (1972), these sentences are convenient in distinct circumstances (Papafragou, 2000). Suppose that the communicator and listener are outside John's office. (52)(a) could be stated, if there was a sign that John had a visitor and they were having a nice time. On the contrary, (52)(b) would be reasonable if the communicator knew nothing about John's habits from primary experience, but had felt that in principle, John was very polite with his pupil. Lakoff (1972) claims that *should* can be used in a probability based on future prospects and provable in the future, and *must* can be used for a probability based on present assumption and provable in the present (Papafragou 2000).

According to Papafragou (2000), Lakoff's idea with two modals can unfold considerably from the recommended semantics. Although both sentences are based on fractional evidence, and therefore cause epistemic readings of the modals, each modal allows for a distinct restrictor, and hence a distinct type of proof. *Must* leaves open the kind of proof that supports the hidden proposition '*p*[John is easy to talk to]' (Papafragou 2000: 75). Conversely, *should*



accepts only proof that is based on norms. As a result, (52)(b) is convenient when the direct experience of John's attitude does not exist. The kind of acceptable proof effects the provable of each sentence. In the case of recognized proof, as in *must*, the hidden proposition *p* is provable at the present, whereas expectation-based proof, as in *should*, requires an anticipation to support or disapprove future cases or affairs (Papafragou 2000).

Consequently, Papafragou (2000) believes that the monosemy discussion which Papafragou supports for the modals is not affected by *should*. There is concern about the possibility of uttering both epistemic and root interpretations to an act that semantically accepts only a stereotypical restrictor. However, the real problem does not exist because it is definitely the semantic information that permits both meanings of *should*. The time normative assumptions are treated as substitutes of external cases or affairs and root interpretations exist. Nevertheless, by the time the expectation-confirming proof is focused on *qua* number of internal propositional substitutes, epistemic interpretation occurs. The possible meanings of *should* as uttering both epistemic (weak) and root necessity actually gives an ambiguous view. From this position, the verb could be attributed two irrelevant clusters of cognitive content; one of them having to do with root interpretation and the other one with epistemic interpretation. On the other hand, the monosemy approach attached to a metarepresentational behaviour on epistemic modality can inherently be accommodated in spite of the fact that the explanation of stereotypicality is going to 'percolate' from outside cases to inner evidence for the hidden proposition (Papafragou 2000).

#### **4.4.1.3. The interpretation of alethic and 'Objective Epistemic' modality**

Some linguistic arguments disregard alethic modality. Lyons' is a rather characteristic idea by the time he marks that alethic uses are the produce of a "rather sophisticated and impersonal process which plays little in ordinary non-scientific discourse and is secondary in the acquisition of language" (Lyons 1977: 845, 849, cited in Papafragou 2000: 80). Papafragou (2000) believes that this is particularly right corresponding with the modals in English. Therefore, the alethic interpretation of *must* in the following example is contrived:

(53) "He is a bachelor, so he *must* be unmarried" (Papafragou 2000: 80).

However, distinguishing the borders between epistemic and alethic modal interpretations are hard, and therefore, some linguists believe that epistemic modality should be analysed again as a subtype of absolute/alethic modality (Kneale and Kneale 1962: 93; Hughes and Cresswell 1968: 27; cf. Karttunen 1972: 14ff, cited in Papafragou 2000). Papafragou (2000)'s opinion interprets (54) as it being logically essential that, if the premises are right, the result is also right:

- (54) "If it snows throughout February, my birthday *must* be a snowy day (assuming the speaker's birthday is on the 11th February)" (Papafragou 2000: 80).

Papafragou also mentions logical arguments against conflating logical and epistemic modality (Karttunen 1972; cf. Iatridou 1990 cited in Papafragou 2000). The first one is that the unmodalised proposition  $p$  is weaker than alethic *must*  $p$ , because the previous infers that  $p$  is necessarily right, but is not quite right. Secondly, *possibly*  $\sim p$  and  $p$  are consistent in modal logic. Third, rationally speaking, a distinct case from  $p \Rightarrow (\text{must } q)$  emerges from the form of *must* ( $p \Rightarrow q$ ). However, in English forms, there is still little distinction as in (55):

- (55)(a) "It *must* be that, if Bill has a diamond ring, he has stolen it from someone

- (b) If Bill has a diamond ring, he *must* have stolen it from someone"

(Papafragou 2000: 81).

Papafragou (2000) approved Karttunen's observation (1972) that there is a fundamental distinction between these two types of modality. The kind of assumptions that are going to be contained in the restrictor are different in epistemic and alethic modality. It can be concluded that the idea is not true that one should be uttered to collapse into the other.

#### 4.4.2. Groefsema's interpretation

According to Groefsema (1995), a sentence including *must* can be interpreted as meaning root or epistemic modality depending on the natural state of the propositions determined as

evidence. She explains this in an example in which Mary and Ann have just moved to a residence in the country. John visits and is shown the house, garden and smart views and then he says (56):

(56) "You *must* be very happy living here" (Groefsema 1995: 69).

The logical form of (56):

(56') "[p Ann and Mary be very happy living here] is entailed by the set of all propositions that have a bearing on p" (Groefsema 1995: 69).

Ann and Mary focus on all the proof for the proposition p which John might have in mind, given that John has viewed their residence and garden which are well-kept. This situation does not mean that a listener always has to understand what the proof is (Groefsema 1995). Consider:

(57) "Ann *must* be at Heathrow by now" (Groefsema 1995: 69).

The logical form of (57):

(57') "[p Ann be at Heathrow by time t] is entailed by the set of all propositions which have a bearing on p" (Groefsema 1995: 69).

From this, the listener can deduce that all the proof that the speaker has entails that Ann has reached Heathrow, and if the listener trusts the speaker to know a sufficient amount about Ann's movements, s/he is able to deduce that Ann has reached Heathrow, without having to work out that proof the speaker indeed has (Groefsema 1995).

Groefsema (1995) accounts for the interpretation of *must* which expresses a meaning of obligation, such as:

(58) "You *must* be home by eleven" (Groefsema 1995: 70).

The logical form of (58):

(58') "[p Bill be home by eleven o'clock on day] is entailed by the set of all propositions which have a bearing on p" (Groefsema 1995: 70).

(58') causes the logical form (58''):

(58'') "Mother says that ([p Bill be home by eleven o'clock on day] is entailed by the set of all propositions which have a bearing on p)" (Groefsema 1995: 70).

If Bill is coming to home after midnight, a contradiction will emerge. However, there is his mother's authority over him because of their discourse. From this hypothesis, together with hypothesis (59), deduced from (58'') (Groefsema 1995):

(59) "Mother says that (Bill be home by eleven o'clock on day)"  
(Groefsema 1995: 71).

Bill can rationalise that the only evidence is derived from his mother's authority, and therefore, Bill's wants are not in relation to the proposition uttered (Groefsema 1995).

According to Groefsema (1995), the meaning of *should* is also derived in the same way as *must*. When Bill's mother tells to him (60):

(60) "You *should* go and see your grandmother" (Groefsema 1995: 71).

The logical form of (60):

(60') "There is at least some set of propositions which entails [p Bill go and see grandmother at time t]" (Groefsema 1995: 71).

Because of his mother's utterance, her authority is easily attainable, which he is able to take as the proof for proposition p. Since his mother says that entailing some evidence to the proposition p is more rational than that all the evidence that requires it, (60) is considered to be less compulsory than (61):

(61) "You *must* go and see your grandmother" (Groefsema 1995: 71).

In another example, while the meaning of (62) implies that "Sue was in Manchester the previous day" (Groefsema 1995: 72), (63) implies that "Sue was not in Manchester" (Groefsema 1995: 72):

(62) "Sue *must* have been in Manchester last night

(63) Sue *should* have been in Manchester last night" (Groefsema 1995: 72).

In terms of the basic meanings, (62) states that all the evidence indicates that Sue was in Manchester, whereas to the contrary, (63) tells us that there is some evidence that requires it exists. In the interpretation of (63), the listener establishes that the indication of Sue's being in Manchester happened in the past. Nevertheless, if an indication has taken a place then all the proof should require it. Since the speaker of (63) communicates obviously that only some proof requires that Sue was in Manchester, the listener is able to infer that not all the proof required this, and, consequently, Sue was not in Manchester. This is the only way that the speaker is able to interpret from (63) that some proof existed for Sue's being in Manchester, but that Sue did not perform according to this proof. Knowing the circumstances might then help the listener to identify the proof, or otherwise, the listener has to solve what the proof referred to is.

## Part 5: Some discussions about relevance theoretic accounts

### 5.1. The problems of *should* and *must*

Salkie (2002a) reviews Papafragou's book and mentions some problems related to accounting modals within relevance theory. According to Salkie (2002a), Papafragou claims that some modals (*can*, *may*, *should*, *must*) have a unitary semantics, with pragmatic elements clarifying the interpretations these modal verbs have in specific contexts.

For *must*, the Principle of Relevance identifies which domain of propositions bears most straight on *p* in a particular context. Papafragou exemplifies:

- (1) "The accused *must* remain silent throughout the trial
- (2) "You *must* love your fellow humans" (Salkie 2002a: 717).

In example (1), domain *D* is the ordinances of forensic procedure. If example (2) is stated in a context in which the listener knows the communicator's desires and factual hypotheses, the communicator has control over the listener, and the listener is in a situation to cause the general attitudes determined in *p*, then the utterance is going to be interpreted as deontic (implementing an obligation). In epistemic interpretations, *p* is a 'metarepresentation' because it is more abstract; in the external world, it exemplifies part of the communicator's idea instead of representing general attitudes. Papafragou exemplifies:

- (3) "Some of the neighbours *must* have seen the burglars" (Salkie 2002a: 717).

If the communicator had complete information about the *burglars* she could have stated the unmodalised counterpart of example (3). The most sensible interpretation is, thus, that she has incomplete information, and that *p* is an essential consequence from incomplete and partially supported proof. Papafragou (2000) treats *should* as diverging from *must* only in that *D* is restrained to norms or expectancy. She reviews a pair of examples from Lakoff (1972):

- (4) "John *must* be easy to talk to.
- (5) John *should* be easy to talk to" (Salkie 2002a: 717).

Lakoff notices that example (5) is used for a possibility based on present guess and is demonstrable in the present. On the contrary, example (4) is used for a possibility based on future expectancy and is demonstrable in the future (Salkie 2002a). Salkie notes that the most attainable evidence for example (4) is currently favourable in Papafragou's (2000) system. However, example (5) is available when there is no knowledge of John's attitude, but some situations will expect in the future.

According to Salkie (2002a), Papafragou's debates about using the modals as monosemous are the most powerful that he has seen; still, they have problems. Most definitely, if *should* is similar to *must* in meaning except for being narrow in the sort of propositions in *D*, then *must* should be admissible wherever *should* is (though not the other way round). Riviere (1981) illustrates with a pair of sentences that do not illustrate the case:

(6) "John is a brilliant student, he *must* pass his exam easily.

(7) John is a brilliant student, he *should* pass his exam easily" (Salkie 2002a: 717).

Salkie (2002a: 718) mentions that another unsatisfactory point in Papafragou's (2000) account is shown by Quirk et al (1985):

(8) "There *should* be another upturn in sales shortly

(9) There *should* be another disaster shortly."

Papafragou claims that "*should* encode[s] normative concepts... in [example (9)], it is odd to suggest that the occurrence of a disaster follows from our expectations about the normal/prescribed course of events" (2000: 76, cited in Salkie 2002a: 718). Negotiably, nonetheless, a drop in sales is just as presumable as an improvement, but Salkie (2002a: 718) finds example (10) as bad as (9):

(10) "There *should* be another downturn in sales shortly."

Salkie (2002a) believes that example (10) is only available in the context in which a drop in sales is seen as desirable, for example, if it was tracked by "... and then we'll have an excuse

to fire that useless salesperson” (Salkie 2002a: 718). According to Salkie, this appears not to be predictability and he believes that Papafragou’s approach to reducing the first sentence to the second utterance does not seem to work.

Salkie (2002a) also adds a third problem which is not considered by Papafragou: Papafragou’s system for modals does not work for languages other than English. There have been preliminary attempts to build a cross-linguistic theory of modality, however, any critical study will appreciate research of this high quality. As a result, according to Salkie (2002a), Papafragou’s (2000) ideas are a significant contribution to understanding English modals.

## **5.2. The problems of saturation and free enrichment**

On Papafragou’s (2000) dividing line between free enrichment and saturation, Salkie (2014) believes that Papafragou’s alternative analyses are ‘straw men’. According to one, all modals are semantically complete; the other accepts that *must* is complete. At the same time, she claims the argument, which goes against the first analysis, that the supposed *alethic* interpretation of *must* (*it is logically necessary that p*) would be estimated to be the easiest (i.e. simplest to process) and most widespread use of *must* – which is evidently not the case. She also claims that it guesses cases in which *must* is entirely indeterminate and the pragmatics cannot make the interpretation more certain – again, these examples have not been found. Salkie (2014) also mentions her alternative proposal that the *saturation modals* (*must*) are not complete and require implicature in the same way as the *enrichment modals* (*should*); the diversity lies in a variety of necessity (*for should and must*), and in the nature of the inadequate semantic material (Salkie 2014).



## Conclusion

In conclusion, while it is obvious that *should* is a more interesting word in terms of meaning and use, the meaning of *must* is reasonably straightforward. The meaning of *should*, however, is more complicated in English. First of all there is obviously the obligation sense of *should*. As in ‘You *should* read this book’ and ‘You *must* read this book’. While in the second example there is a strong obligation and an instruction, in the first example the sense is not quite as strong and is a recommendation or advice. That distinction is reasonably clear.

The other use of *should* is a bit more tricky and is not easy to describe because there is nothing similar among the other modals. Therefore, *should* is used to refer to the future when we are confident but not completely confident that something will happen, as in ‘A: Will that be enough paper for this work?’ and ‘B: That *should* be enough’. (There is the meaning of probability and that I am not completely confident. This example is normally about the future.) Another example is ‘John *should* be in New York now’ (because I know the timetable). That is the normal epistemic use of *should* but not the same as the use of epistemic *must*.

Another use of *should* is slightly stronger, as in ‘Why *should* he be so happy?’ (it has a subjective meaning). When we look at the meaning of other modals such as *may* or *might*, they have particular meanings which are permission and possibility. However, *should* is evaluated in that issue; we can easily say that the meaning of *should* is more complex. While the meaning of *should* is complicated in its own meaning, when we compare this meaning with *must*, I argue that there is not much difference between them. Therefore, separating modality into different types is not helpful in explaining the meaning and use of modals.

Papafragou does not say anything about the meanings of *should* in detail. She handles the framework of the meaning of *should*. Papafragou and Groefsema separate epistemic modality from the others, however, apart from that they do not think in terms of different varieties of modality because they claim that there are many distinct interpretations of *must* and *should* depending on the context. Therefore, we can conclude that although Papafragou and Groefsema’s accounts include some problems in relation to applying the meaning and use of *should* and *must* to relevance theory as we mentioned above, relevance theory work has value in explaining the meaning and use of these two modals rather than explaining the different types of modality.

(18.091 words)

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