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A CORPUS-BASED STUDY OF MODAL VERBS IN NATIVE AND EGYPTIAN LEARNER ENGLISH

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Abstract

The present corpus-based study investigates the use of modal verbs in native and Egyptian learner English. Two written corpora - Egyptian learner English Corpus (ELEC) and Michigan Corpus of Undergraduate Native Speakers (MCUNS) - are compiled and processed by the Antconc software (Anthony, 2014). Results are further compared to modal tokens in COCA Academic Sub-section (COCAAS) as a reference corpora. Results show a discrepancy in the frequency and order of modal verbs between native and Egyptian learner English corpora. The overall number of modal tokens is significantly greater in ELEC, but confined to three main overused verbs. Modals in the native English corpora are more diverse. The most frequent modal verbs in ELEC are will, can and should. In MCUNS, would, will, can, could and should occur frequently, while in COCAAS, can comes first followed by may, would, and will. The order in the latter corpus indicates a significant change in the use and frequency of modal verbs in English. The comparison of the findings obtained on the modal verbs in the native English corpora with previous findings confirms that many modal verbs continue to decline such as must and shall, while others retain their positions in the lead such as would and will. Except for epistemic prediction, results show lower proportions of modal tokens marking epistemic functions in ELEC than in MCUNS. Conversely, the proportions of modal tokens expressing deontic functions are relatively higher in ELEC than in the native corpus. Thus, the composition of the Egyptian learners would sound assertive, authorial, direct, and crude. The study ends with a discussion of the pedagogical implications drawn from the analysis, and provides suggestions for further research.

Introduction

Corpus research on present-day English grammar has made fruitful and reliable statements on the current grammatical patterns in English. Thanks to a large number of corpora, archives and electronic texts of synchronic and diachronic nature that most of these statements gear to a more precise description of present-day English grammar, which conflicts with impressionistic, armchair grammatical description (e.g. Leech, 2004, Leech, Hundt, Mair & Smith, 2009, Mair & Leech, 2006, Barber, 2002, among many others). [*] Modality and modal verbs in English have intrigued theorists from different disciplines, including philosophy, logic, grammar, historical linguistics, semantics, pragmatics, discourse analysis, computational linguistics, etc. This interest stems from their central position in English grammar, as modal verbs, among other

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[*] Studies have reported various ongoing changes in English grammar, including the frequency and use of modals, tenses, passives, verb preferences, subject-verb agreement, revival of subjunctive case, emerging transitivity of typically intransitive verbs such as sleep, come, disappear, etc., use and frequency of quantifiers (the rise of less instead of fewer), more variety of propositions following verbs (e.g. concentrate about, agree about), among others [*]

linguistic means, help express the individuals' representation of reality, and how they want this reality to be (Coates & Leech, 1980, p.25) . With the advent of corpus linguistics, increasing attention has been directed to modal verbs in native and learner English alike. In native English, many corpus studies of modal verbs in American and British English have been conducted. (e.g. Coates, 1983; Coats & Leech, 1980; Leech, 2004; Leech et al., 2009; Mair & Leech, 2006; Barber, 2002).

Likewise, various cross linguistic corpus-based studies of learner modal verbs have been carried out. Chief among them are Römer (2004) on German Learners, Viana (2006) and Tenuta, Oliveira & Orfanó (2015) on Brazilian learner English, Hsieh (2005), Chen (2010) and Hu & Li (2015) on Chinese learner modal verbs, Khojasteh & Reinders (2013) and Khojasteh, Shokrpour & Rafatbakhsh (2014) on Malaysian students' modals, Orta (2010) and Carrió-Pastor (2014) on modal verbs used by Spanish learners, Wilson (2009) on written Indian English, Collins, et al. (2012) on Philippine English modal verbs, Back (2012) on the use of hedges by Korean learners, Hinkel (1995) on modal verbs in Asian learner corpora, Torabiardakani, Khojasteh & Shokrpour (2015) on Iranian learners', among others. The main objective of most studies is to have a close look at how modals behave in learner English in comparison to authentic 'real', rather than, school English. The attention paid to modality in general and modal verbs in particular stems from their pragmatic importance in successful communication. In L2 English, they have gained special interest due to the tremendous difficulties involved in their teaching and learning.

Little corpus work has been conducted on modal verbs in Egyptian learner/speaker English. Smith (2001) points out the non existence of modal verbs in Arabic. Modality is expressed " by normal verbs, often impersonal, or prepositions followed by a subjunctive (present) tense" (p.204). No specific structures are used as modals. The result, Smith notes, is that Arab learners of English have a very hard time learning modal verbs. Accordingly, distinguishing among the broad range of modal meanings in English could be a major problem for Egyptians. The current corpus-based study is an attempt to explore how modal verbs feature and function in Egyptian learner English in comparison to native English. The study would fill a gap in the corpus research on Egyptian EFL modal system.

More specifically, the study seeks to answer the following questions:
(1)   How do modal verbs feature in native and learner English corpora?

(2)   What are the semantic functions of the modal verbs used by English native speakers and learners as represented in the corpora?

(3)   What are the pedagogical implications of the findings obtained?

The present study falls into four sections; section one tackles the theoretical framework of analysis. The second section deals with method and corpora. The third section provides the results and discusses them. The fourth section is a conclusion, which includes a summary of the main findings, an account of pedagogical implications of study, and suggestions for further research.

1.Theoretical framework:

1.1. The corpus turn:

Analyzing grammar has long drawn on "introspection" during and after the Chomskian turn. On preferring corpus-driven approaches to linguistic theory, Leech (2004) reverses the hierarchy to become data collection, description and theory, rather than theory, and description via contrived data. He points out that corpus driven linguistics "is not purely observational or descriptive in its goals, but also has theoretical implications" (p. 61). Due to authenticity, corpus would offer extremely stunning and surprising aspects to usage, the ways words interact with one another, the properties or constraints of usage, the productivity and selection restrictions of a given construction, etc. Equally important are other non-linguistic issues such as gender, age, class and how they determine the use and diffusion of an innovative construction. Crystal (1997) argues that the size of a corpus is determined by the objectives of the study. A study on lexical behavior would be much greater in size than that addressing grammatical behavior (p. 129). Corpus-based studies on L2 acquisition are going viral. Thanks to the accessibility of reference corpora and the user- friendly and free downloadable corpus software, learner grammar has recently received special attention. Investigation and description of learner grammar are thought to fulfill two aims: (1) enhancing the epistemology of linguistic theory and language acquisition theory, and (2) helping pedagogists revise their material, approaches, methods, etc. to fit the real needs of learners (Axelsson and Hahn, 2001).

1.2. Modal verbs

Though diverse, most definitions of modality generally describe it as a semantic construct used to express speaker's attitudes/stances (to the truth of a proposition and the hearer), opinions, beliefs, intentions, desires, etc. (Lyons, 1977; Quirk, Greenbaum, Leech & Svartvik 1985; Orta, 2010; among others). Formally, modality manifests itself in various forms such as modal verbs, modal lexical verbs, modal adjectives and modal adverbs. Modality is also realized by employing intonation patterns. The meanings

of possibility, obligation, prediction, etc., such devices convey, simultaneously entail pragmatic aspects such as (im)politeness, sarcasm, seriousness, social involvement/detachment, doubt, conviction, etc. (Leech, 1971).

Diverse and controversial taxonomies of modal verbs have been proposed by a number of theorists (e.g. Palmer, 2001; Leech, 1971). In some taxonomies, modal verbs fall into three types: 1- deontic modals (those expressing obligation, allowance, permission, suggestions, desire, etc, in different degrees of certainty), 2- epistemic modals(those expressing speculations, deductions, inferences, assertions, etc. also in different degrees of certainty and possibility), and 3- dynamic modals (those conveying factual propositions of ability, volition, etc.) (Hsieh, 2005; Abdul-Fatttah, 2011). However, most studies prefer a two-type classification: epistemic and deontic, as there has been no consensus on the dynamic function (Leech et al. 2009) . Modal verbs are further grouped under various semantic and discourse-oriented classifications such as speaker-oriented, subject-oriented, and discourse-oriented (Hsieh, 2005), intrinsic (deontic) and extrinsic (epistemic) (Biber et al. 1999, cited in Orta, 2010, p.80). Further, Hacquard & Wellwood (2012, p.1) argue that "the question of whether epistemic modals contribute to the truth conditions of the sentences they appear in is a matter of active debate in the literature". The result is that modality and modal verbs continue to be a crucial and controversial issue in linguistic theory.

The diverse forms of epistemic modals make them difficult to use in L2. Epistemic modals generally fall into many forms, with each having different degrees of certainty and possibility. Palmer (2001, p.22) suggests three forms: speculative (may), deductive (must), and presumptive (will). The latter form is the strongest in assertions. Some lexical items expressing modality, called boosters and downtoners, either enhance or mitigate the core epistemic meaning of the verbs (Chen, 2010).

There has been a relatively common consensus among grammarians and semantists on designating a number of semantic senses for each modal verb. Can expresses ability, general possibility, making suggestions, offers, and permissions, all are deontic except for ability(dynamic/doentic) and possibility (epistemic). Could acts similarly, yet in past, present and future events. Must communicates senses of necessity, lack of necessity, obligation, prohibition, etc. Will and shall convey such meanings as prediction, in various degrees, volition

(intention, desire, willingness), offer, instant decisions, promises, etc. Will "means that something is certainly true, even though we cannot see it true" (Eastwood, 2002,p.121).Would gives similar meanings in addition to hypothetical meaning, future time reference, habitual action in the past, wishes, polite requests, permission, determination, etc. May and might denote possibility, permission, requests, optative (for may). Should expresses possibility, necessity and obligation. Below is a list of some modal examples drawn from the study corpora:

Obligation**:** …he **must** work diligently to work out the problems. (MCUNS)

Epistemic necessity: A house **mus**t collapse if no one stops…(MCUNS)

Obligation: we **should** study it. (ELEC)

Uncertain Prediction/ Possibility: I **may** work in translation. (ELEC)

Intention: I **will** also complete my studies. (ELEC)

Prediction: all these subjects **will** help me in the future(ELEC)

Promise: to promise me to meet in the future. I **will** not forget to spend.... (ELEC)

Ability (in the past): I **could** learn English easily then (ELEC).

Possibility: It **could** be tough. (ELEC)

Ability: I also **can** read…(ELEC)

General Possibility: University **can** be the turning point…..(ELEC)

Suggestion**:** Another noted, " At home if you need to turn in something, you **can** just send it through iChat, and they'll get it. " Two of **(**COCAAS**)**

Obligation**:** We **must** give another caution. All of our discussion has been phrased in short-run terms, **..(**COCAAS**)**

Hypothetical: Clearly, no husband **would** have let Fatma claim an identity to which she was not entitled. This set ….**(**COCAAS**)**

Volition: Why **would** anyone want to use a pen instead of a keyboard? " Do you **…**

Intention/ desire: I **would** like to be a perfect translator. (ELEC)

Prediction: Experience **would** educate you(ELEC)

Hypothetica**l**: if it was proved a bad thing then he **would** certainly try. (ELEC)

Prediction/ possibility : it **might** help for a short period. It means perhaps it will help for a short period(ELEC)

Obligation: servants.... herdsmen, teachers or wage earners, or those under guardianship, **shall** not be permitted to leave their obligations until their year or term of service is **(**COCAAS**)**

1.3. Literature review of modal verbs in learner English:

Acquisition of modality is a key factor in L2 pragmatic competence (Chen, 2010), and it is one of the toughest tasks for non-natives. The

intersecting functions of modal verbs in English, and their large number make it difficult for L2 learners to use them appropriately (Hsieh, 2005; Abdul-Fatttah, 2011; Khojasteh et al., 2014). Tenuta et al. (2015, p.335) argue "that students seem to heavily rely on modal verbs instead of other forms of modality that are also present in the native speaker's corpus". Various cross linguistic corpus-based studies of learner modal verbs have shown aspects of similarity and difference among learners cross-linguistically on the one hand, and between native speakers and learners, on the other. For instance, Chen (2010) argues that " L2 learners often have difficulties interpreting and adequately using epistemic modality and politeness devices such as hedges and experience pragmatic failure in L2 writing" (p.28). Alternatively, L2 learners tend to use more directives and obligations. Chen ascribes that to the semantic and pragmatic load of epistemic modals, and to the negative transfer from L1. He cites McEnery and Kifle (2002)'s finding of the rarity of epistemic modals in Eritrean L2 argumentative writing which is attributed to their " lower degree of confidence in writing which may result from their native culture" (p.30).

In a wide scale study of learner English, Smith (2001) illustrates fascinating grammatical, phonological, spelling, punctuation, etc. differences among English learners of diverse L1 background. The use of modal verbs represents a core part of such differences. Guy, Dekeyser & Devriendt (2001) note that Dutch learners, for instance, tend to mistakenly use must in contexts where have to and be to are more appropriate. The same is true of the negative must not, being replaced by should, ought to, etc. Must could also be used to express necessity in the past. Must not could also mean need not to, do not have to. Epistemic can, Guy et al.(2001) explain, " denotes all types of possibility; there is no equivalent of English may/might used in this sense"(p.9). For illustration, they proffer the following couple of examples :*It can rain tonight don't forget your umbrella and *I can have told you. Guy et al.(2001) also indicate that may is overused in expressing permission, while can is largely avoided. Should empresses "unfulfilled intention" and "rumor"(p.10) For illustration, they furnish the following couple of examples: He should leave on Sunday, but there was a problem with his visa, and Andrew should be ill (for Andrew is said to be ill).

Swedish and Norwegian learners, Nielsen & Harder (2001) affirm, sometimes misuse epistemic modals. Can, for instance, can " talk about whether things are the case, or may happen in the future" (p. 32) to replace be or will. Shall expresses compulsion and command, typically

expressed by must, future arrangements instead of be or be going to. Should is used instead of the hypothetical would or might.

German learners, Swan (2001) indicates, use must instead of must have been. In French learner English, Walter (2001) argues that modal verbs behave lexically. French has a lexical verb to mean obligation and epistemic necessity simultaneously. Therefore, French learners confuse should and must. Shall has no equivalents in French and its functions of making and responding to suggestions are performed by lexical verbs in the present tense.

In Italian learner English, Duguid (2001, p.81) notes that "the varied shades of meaning in the area of possibility, certainty, obligation, etc, expressed by the English modals, are difficult for Italian students to 'feel'". The Italian verb dovere, when used in various tenses, gives different shades of meaning, usually expressed by various modals in English.

Hindi learners, (Shackle, 2001) maintains, overuse could and would instead of can and will to display more politeness. He gives the following example: Let's leave so that we could meet him in time, (for so that we can meet ….) (p. 236). May is also used instead of should and will for contrastive(polite and unfriendly) reasons. For illustration, Shackle provides the following couple of examples: You may kindly come tomorrow. (for he should….) , and You may kindly come tomorrow. (for will you please come ….)(ibid.).

In west African languages, learners have a problem understanding epistemic functions of modals as in That must /may/ can't be true (Tregidgo, 2001, p.256). Malay learners find tremendous problems with the sophisticated system of modals in English (Yong, 2001). Modals are reduced to can and must. Accordingly a broad array of functions are fulfilled by these two modals. Learners, Yong continues, also can replace modals "by using adverbs or ordinarily verbs to express modal meanings"(p.288) such as may be and I think.

In Korean, there are modal equivalents to the English can, must, and should, and therefore, " the whole range of English modal verbs must be assimilated" to them (Lee, 2001, pp.332-3).
Orta (2010) compares stance making modal verbs used by Spanish learners and native English participants. She finds that may, can, will occur abundantly in the native English corpus, and the most frequent epistemic ones are: may, can, could, would, and might (p.83). On the

other hand, Spanish writers frequently use can, will, may, would, could and might. (ibid.). Spanish writers tend to use epistemic modals differently. For instance, "can" is used instead of "may" to express possibility" (Orta, 2010, p.93).

Malaysian textbooks, Khojasteh et al. (2014, p.179) argue, "overemphasize the minor semantic functions not really taking into account the frequent functions of modals used in present-day English". Learners overuse must and should deontically, with the epistemic use lagging extremely behind. Brazilian learners use would the least, where would is the most frequent modal in the native corpus (Tenuta et al. 2015).

Furuta (2014) indicates that L2 learners generally underuse the past forms of modal verbs. Wilson (2009) shows that can and will are the most frequent modal verbs in Indian English. Collins, et al. (2012, p.59) suggest that Philippine English is gearing towards "the considerably milder tendency towards monosemy with may and the high frequency of shall". Torabiardakani et al. (2015) show that Iranian learners' can and could predominantly convey ability, and rarely convey possibility, unlike the equal distribution in the native corpora as reported in literature. Learners also overuse the prediction will more than the volition sense. Carrió-Pastor (2014) finds cross-cultural variations in the use of modal verbs. For example, Spanish writers use could in its epistemic sense of past possibility more frequently than any other sense. Moreover, non-natives generally overuse can while natives use might and may in academic English.

Chen (2005, p.37) finds that native English writers "employ the epistemic devices approximately three times" more than Chinese learners, as the former use epistemic modals as politeness markers, a key component of pragmatic competence. On the other hand, Chinese learners generally underuse the epistemic verbs except the strong modal adjective (sure). Chen explains that Chinese culture prefers to convey messages very strongly as this indicates the addressor's self-confidence and commitment to the message. It seems that there is a common belief that to be convincing your messages must be strong. In the same fashion, Hinkel (1995) notes that South Asian learners, in line with the culturally-rooted ideologies of putting the family and nation first, tend to use must and should when addressing issues such as family, nation, relationships, while natives use need.

The above discussion simultaneously provide two significant indications. One is the general troublesome use of modal verbs, especially the epistemic ones, by learners from various L1 backgrounds. Secondly, some culturally-peculiar patterns, and the typological nature of modal systems in L1s impact, though on a limited scale, the use and frequencies of modal verbs.

2. Method

The study employed three corpora: Egyptian Learner English Corpus (ELEC), Michigan Corpus of Undergraduate Native Speakers (MCUNS) (2009), and The Academic Sub-corpus in Corpus of Contemporary American English (COCAAS). Argumentative writing has been the preferable genre of academic writing in most learner English corpora worldwide. Egyptian leaner corpus was compiled by asking senior majors, English Department, Kafrelsheikh University (300 participants) to write a well-developed essay each on an argumentative topic of their own choice. Students did the composition task in the class. Then all essays were typed and converted into plain texts of approximately 100 000 running words . The native English corpus is made up of 40 argumentative texts, written by native English undergraduates, drawn randomly from MCUNS, totalling 109 000 running words.   Data of the two corpora were processed by the Antconc software (Anthony, 2014), a free downloadable program. Word frequency, concordances, and word lists in learner corpus are obtained and compared to their counterparts obtained from reference corpora and literature. Corpora are comparable, as criteria of sampling are relatively similar, specially between the native corpus and the learner corpus compiled by the researcher. Participants are undergraduates, the genre of writing is largely argumentative in both corpora, and the sizes are also similar. COCAAS was employed as a reference corpus. Frequency of each modal verb per million words   was obtained and converted to its equivalent per 1000 word to be comparable with ELEC and MCUNS. Frequencies of modal verbs (central and semi-modals) in the three corpora are obtained and compared. Then, concordances of modal verbs were manually checked by a group of four coders to work out their various types and functions. The same is true of a sample of modal concordances in COCAAS. Inter-rater agreement was 87% . The ambiguous and diverse functions of modal verbs make it inevitable to conduct a through manual examination of their epistemic and deontic functions. A frequency count (per 1000 words) of each modal verb and the frequency of its functions are also carried out.

3. Results:

The overall frequencies of modal verbs

The overall frequencies of modal verbs (central and semi-modals) are 1943 in100 000 and 1579 in109 000words in ELEC and MCUNS , respectively.

Table (1): Overall frequencies of central modal verbs and per1000 words:

Figures in **bold** are the highest across corpora:

Modal verbs	Egyptian LEC	MCUNS	COCA			
			PER Thousand	FREQ	SIZE (M)	PER MIL
Can	**467 (4.7)**	213 (1.9)	2.26	234313	103.4	2.265.60
Could	91 (0.9)	157 (1.4)	0.96	99765	103.4	964.64
May	69 (0.69)	88 (0.8)	**1.67**	**162353**	**103.4**	**1.569.81**
Might	15 (0.15)	**84 (0.8)**	0.5	54220	103.4	524.26
Shall	2 (0.02)	**9 (0.08)**	0.05	5658	103.4	54.71
Should	**242 (2.42)**	151 (1.4)	0.9	92388	103.4	893.31
Will	**513 (5.1)**	241 (2.2)	1.5	159697	103.4	1.544.13
Would	123 (1.23)	283 (2.6)	**1.6**	**168363**	**103.4**	**1.627.92**
Must	75 (0.75)	**109 (1)**	0.6	64523	103.4	623.88

Table (1) shows a discrepancy in the overall frequencies of modals across corpora. Will, can, should, would, could, must and may are the most frequent in the Egyptian corpus. The rest are underrepresented. The frequency order of modal verbs in MCUNS is would, will, can, could, should, must, and may. COCAAS records a rather different order: can, may, would, will, could and should. The order in MCUNS goes consistently with the ones reported in (Leech et al., 2009, p.74), on four native English corpora: two British English the British Lancaster/Oslo-Bergen (LOB) 1961/FLOB 1991), and two American English (Brown1961/Frown 1991), where would is still in the lead, followed by will, can, and could. It also accords with BNC results reported in Kennedy (2002). One difference is that should in MCUNS has moved

forward, preceding may. In COCAAS, can comes first. This is not surprising. Leech et al. (2009, p.85) point out that since the turn of the 20th century, can has been replacing some modals such as may as a possibility signal. This could explain the rise of can in COCAAS. May comes second which runs counter to the orders of most written corpora. May and might are more common in spoken English. Checking may chart in COCAAS, which traces its use since 1990, shows that may has relatively been on the rise in academic English. This could explain this place in the modal verb order. In line with Leech et al. (2009), must is receding at an alarming rate in MCUNS and COCAAS alike. Overall, there is a general decline in use of modal verbs the native corpora. The number of frequent verbs is not significantly larger than the number employed in ELEC.

As for ELEC, Table (1) illustrates that will and can are overused, followed by should. This accords the results reported in many corpus-based studies of modal verbs in learner English, where most modal functions are fulfilled by can and will. The pure epistemic possibility might, could and the tentative would occur more frequently in the native corpora than they do in ELEC. Römer (2004) attributes that to the textbooks taught, which overuse can and will, explaining them to limited functions: ability (for can) and future reference and intention (for will). Similar conclusions have been reached by many studies (e.g. Back, 2012; Carrió-Pastor, 2014; Torabiardakani, et al., 2015). Textbooks oversimplify the modal functions. A considerable gap has been reported between modals used in authentic English and textbook modals.

Unfortunately, little is known about the frequencies and order of modal verbs in the textbooks taught in the Egyptian context. The figures displayed in Table (1) reveal that the Egyptian case could be no exception. Another possible reason for the prevalence of will and can is basically cultural. Conventions of the L1 culture of writing and thinking patterns are clearly reflected in modal choices.

Table (2) Overall frequencies of some semi-modal verbs and per1000 words:

Figures in **bold** are the highest across corpora:

Modal	ELEC	MCUNS	COCAAS			
			PER Thousand	FREQ	SIZE (M)	PER MIL
Ought to	1 (0.01)	10 (0.09)	0.02	2414	103.4	23.34
Able to	76 (0.76)	52 (0.5)	0.25	25991	103.4	250.92
Have to& need to	96 (0.96)	56 (0.5)	0.16	16627	103.4	160.77
Can be+ pp	47 (0.4)	48 (0.4)	0.65	66942	103.4	647.27
Could have+ pp	(0)	14 (0.04)	0,5	5210	103.4	50.38
Might be+ pp	5 (0.05)	12 (0.1)	0,14	13986	103.4	135.23
Might have + pp	(0)	2 (0.02)	0.05	5472	103.4	42.81
Must be+ pp	19 (0.19)	12 (0.1)	0.22	22605	103.4	218.57
Must have + pp	(0)	2 (0.02)	0.03	3556	103.4	34.38

Table two demonstrates the general under-representation of semi-modals across the corpora. Before proceeding, two points are worth mentioning. One is that 103.4. is the collective size in million of all the listed modals in COCAAS . The other is that the tokens of perfective modals at the bottom of the list include few imperfective ones. As there is no access to directly query the perfective modals separately on COCA search.

Table (2) exhibits that ought to is more frequent in MCUNS, while be able to and have to are more frequent in ELEC. The current frequencies of the latter forms in MCUNS go counter to the common trend claimed by Leech et al. (2009), which holds that the use of have to and be able to is on the rise, as they are replacing must and can, respectively. Native undergraduates seem to posses a profound academic (argumentative) writing schema (Tenuta et al., 2015) . Table (2) also shows the general rarity of perfective modal verbs. However, it is evident that native writers use them more, which enhances the relative diversity of modal native English canvas.

Semantic functions of modal verbs:

Table (3) Figures in **bold** are the highest across corpora. The semantic categorization is based on Leech & Coates (1980), Leech at al. (2009) among others.

Modal verbs Total numbers are between brackets	Epistemic Necessity/certainty	Prediction Not completely certain	Possibility probability	Obligation Prohibition recommendation	Habitual Past	Hypo-thetical	Volition	Suggestion Permission & requests	ability
Can ELEC : (467) MCUNS: (213)			107 (22.9%) **84 (39.4%)**						**360 (77%)** 129 (60.5)
Could EC: (91) MC: (157)			**40 (43.9%)** 73 (46.4 %)						51 (56%) **84 (53,5%)**
May EC: (69) MC: (88)			67 (97.1%) **88 (100%)**					2 (2.9%) (0)	
Might EC: (15) MC: (84)			**15 (100%)** 82 (97.3%)			0 **2 (2.4%)**			
Shall EC: (3) MC: (9)		0 **7 (77.8%)**		0 1 (11.1%)			3(100%) 1 (11.1%)		
Should EC: (242) MC: (151)			O **7 (4.6%)**	**240 (99.2%)** 134 (88.7%)		**0 6(4%)**		2 (0.8%) **4 (2.7%)**	
Will EC: (513) MC: (241)		367 (71.5%) **209 (86.7%)**					142 **(27.7%)** 30 (12.5%)	4 (0.8%) 2 (0.8%)	
Would EC: (123) MC: (283)		**81 (65.9%)** 260 (91%)		8 (6.5%) **4(1.4)**	2 (1.6%) (0)	13 (10.5% (0)	11 (8.9%) 12 (4.4%)	**7 (5.7%)** 7(2.6%)	1 (0.8%) (0)
Must EC: (75) MC: (109)	3 (4%) **9 (8.3%)**			**72 (96%)** 100 (91.7%)					
Ought to EC: (1) MC: (10)			O **1 (10%)**	**1 (100%)** 9 (90%)					
Able to EC: (76) MC: (52)									76 (100%) 52 (100%)
Have &need to EC: (96) MC: (56)				**96 (100%)** **56 (100%)**					
Can be + pp EC: (47) MC: (48)			**47 (100%)** **48 (100%)**						
Might be+pp EC: (5) MC: (12)			**5 (100%)** **12 (100%)**						
Might have +pp EC: (0)			(0) **2 (100%)**						

MC: (2)							
Must be +pp EC: (19)			19 (100%) 12(100%)				
MC: (12)							
Must have +pp EC: (0)		0 1 (50%)	0 1 (5o%)				
MC: (2)							
Would have +pp EC: (0)				21(100%)			
MC: (21)							
Be supposed to EC: (1)			1 (100%) 7 (100%)				
MC: (7)							
Could have+ pp EC: (0)		(0) 14 (100%)					
MC: (14)							
Used to EC: (21) MC: (4)				21 (100%) 4(100%			
Going to EC: (53) MC: (4)	11 (20.8%) 3 (75%)					42(79.2%) 1 (25%)	

EC = ELEC
MC = MCUNS

Table (3) displays that the deontic functions are generally more represented than the epistemic ones in the two corpora. For example, can scores deontically (ability) more than epistemically (general possibility), which accords with the general findings reported in corpus work on native English (Leech et el. 2009, Leech, 2004). However, in MCUNS, functions are slightly balanced, with the two functions fairly represented (60.5% and 39.4% for deontic and epistemic functions, respectively). Although this is also in line with pervious studies, the present native English data show that the epistemic sense of can is declining, with may becoming more preferable in expressing possibility than can. In ELEC, the distribution of functions is considerably leaning towards the deontic (ability) more than the epistemic (obligation), scoring 77% and 22.9%, respectively. Learners seem to adhere to the literal/ default meaning of modal verbs. Can, for example, literally means to be able to do a task, rather than conveying the possibility of something.

Could follows the same patterns of can in the corpora, with the epistemic function being less represented in ELEC than MCUNS: 43.9% and 46.4%, respectively. "As could is associated with the past, and we cannot change the past, the ability function of could is avoided," says an Egyptian learner. It is also noticeable that other functions of could such as

requests and permissions are not represented, as they are more used in conversational English.

Possibility is the default epistemic function of may. In MCUNS, this function scores 100%, which is considerably higher than the percentages reported in previous studies. Leech et al.(2009, p.284) compare frequencies of modal verbs in four written corpora of British English (LOB 1961/FLOB 1991) and American English (Brown1961/Frown 1991), and indicate that the epistemic function of may is constantly on the rise from 67% to 75% and from 58% to 73 % in American and British Corpora , respectively . The current figures in MCUNS suggest that may is gearing towards being rather mono-semantic. Egyptian learners seem to use may in this sense too. In MCUNS, might functions are barely diverse (97.1% possibility and 2.9% hypothetical senses).

Frequencies of might in native corpora have shown a slight ongoing decline in COCAAS and other British and American corpora (Mair & Leech, 2006; Leech et al., 2009). This explains the current position in the modal order (see Table: 1)**,** as it occurs 0.8 and 0.5 /1000 words in MCUNS and COCAAS, respectively. Might features in ELEC 0.15/1000 words. Might in ELEC is exclusively used to convey the epistemic possibility (100%). "Might has the same meaning of may but it is associated to the past," says another Egyptian learner.

Appendix (2) demonstrates the percentages of semantic functions in a sample of tokens drawn from COCAAS. The comparison between the percentages of epistemic tokens in MCUNS and COCAAS demonstrates their slightly higher proportions in the latter. Can in COCAAS displays a more balanced distribution of epistemic possibility and deontic ability (43,3% and 50%, respectively) than in MCUNS whose percentages are 39.4% and 60.5%, respectively. These percentages are also higher than those reported in literature. May and might score possibility with 100 % each. The frequency of epistemic would is lower in COCAAS.

In COCAAS, about 97 % of should tokens mark obligation. The reported slight differences between the two native English corpora could be attributed to differences in size and participants' writing experience. MCUNS data are written by undergraduates, while COCAAS' contributors are more likely to have deeper experience in academic writing.

The deontic function of should (obligation) is a default in the two corpora, 88.7 % and 99.2% in MCUNS and ELEC, respectively. Leech et al. (2009, p.284) show the recession of the epistemic function of should: LOB 1961(11%) /FLOB 1991(9%) and Brown1961(10%)/Frown 1991(8%). MCUNS corpus supports the reported direction should has been taking towards developing a mono-semantic meaning. Yet it conflicts with the obligation 55% , hypothetical 36 % and politeness 9 % reported in Mindt (1995). " Should means strong advice, strong recommendations and other related senses, not possibility or necessity. This is the way it is imprinted in our minds since we were young," says an Egyptian learner.

Will features prominently in the two corpora, coming first in ELEC and second in MCUNS. Will also comes second in the four British and American written corpora compared in Leech et al.(2009). The epistemic prediction and the deontic volition are the main functions of will in the study corpora, though with different shares:71.5 % and 86.7 % (prediction), and 27.7 % and 12.5% volition in ELEC and MCUNS respectively. The increasing proportion of prediction will in MCUNS relatively does not accord with other studies. Volition senses feature rather abundantly in other corpora. Other corpus-based studies on learner English report will predominance (Orta, 2010; Khojasteh et al., 2014). In ELEC, will is a future marker more than a modal with other functions. Commonly, will entails a high degree of certainty and determination, and it is stronger than can. Will, being learners' first choice, indicates that Egyptian learners tend to state their propositions clearly, strongly, and rather recklessly. Back (2012) ascribes the prevalence of will in a Korean learner corpus to two main reasons. One is the poor knowledge of writing conventions in L2 which is manifested in "using spoken style hedging devices, as the typical features of spoken-like items" (p.29). The other reason has to do with a deficiency in pragmatic competence. Learners lack sensitivities to the modalization of their messages the way natives do. The Egyptian case could be interpreted similarly. In Egyptian culture, people tend to use hedges and downtoners in conveying their massages, specially when related to prediction, plans, and intentions, as in Prices will not go up , God willing, and I will pick you in an hour, if God permits, which deeply signify lack of desire to make strong intentions, predictions, promises, invitations, etc. Thus, the overuse of will in its strong senses of high certainty and commitment conflicts with the source culture and indicates pragmatic deficiency in L2, in line with (Back, 2012).

Would is a top modal in MCUNS, a finding supported by many previous corpora. Would relatively patterns the same as will. Prediction is its prime semantic function in both corpora: 65.9 % and 91% in ELEC and MCUNS, respectively. Would involves a less degree of prediction force. Other functions of would are also fairly represented such as volition, habitual past , hypothetical would, and obligation. A quick look at Table (3) illustrates the dense area of both will and would, which indicates their general overuse by participants . The low score of would in ELEC could be because learners associate it with the past tense. Like will, would is perceived as a pure grammatical marker of past tense. Many grammarians argue against this overlapping (Coates & Leech, 1980).

Must scores relatively higher in the epistemic function of necessity/certainty in MCUNS than in ELEC (8.3% and 4%, respectively). The reverse is true in the deontic function of obligation (91.7% and 96% in MCUNS and ELEC, respectively). In COCAAS , the frequency of must per 1000 is similar to those reported in the current corpora. Frequencies are: 0.75, 1, and 0.6 in ELEC, MCUNS and COCAAS, respectively. Although must is receding, according to most reference corpora (Leech, 2004), it is still fairly represented in MCUNS. Leech et al.(2009) argue that there is an expansion in the use of semi-modals. ELEC features many examples of must for have to, expressing external obligation or authority.

The rest of verbs in Table (3) are usually termed semi-modals. They are significantly underrepresented in ELEC. The low frequencies of semi-modals are also evident in the native corpora. Leech (2004) indicates that they are gradually replacing core modals. This explains the consistent decline in the use of the latter ones. Leech et al. (2009) argue that these semi-modals are undergoing a process of grammaticalization, where lexical verbs are used as functional, grammatical verbs, acquiring a set of specific senses, and perform a certain grammatical function. Leech (2004) maintains that such forms of current grammaticalization could be attributed to such internal and external forces as colloqualization, democratization (as reflected in the collapse of must), and Americanization (which is manifested in the desert of modal verbs). Historically, all modal verbs were ordinary lexical verbs that develop functional purposes (*).

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* Grammaticalization (coined by Meillet, 1912, cited in Kranich, 2010) refers to the process" by which lexical items become grammatical" (p. 5). Kranich indicates that grammaticalization is the result of a group of mechanisms which do not necessarily work together. Three of such mechanisms have to do with the losses a word undergoes : semantic (desemantization), morphosyntactic (decategorization), and phonetic (erosion). Then, grammaticalization generalizes when the "semantic meaning overrides

Table (3) also displays the considerable representation of have to, be able to and be going to. They are competing with the core modals carrying similar meanings : must, can, will and could. Egyptian learners remarkably use going to more than the native participants. Semantically, volition is the pervasive function (79.2%), and prediction comes second (20,8%). Egyptian learners seem to lack what Back (2012) terms " genre-specific register awareness"(p. 29). Though be going to is on the rise, native writers, unlike learners, still abide to the conventions of written language, and do not risk using forms largely associated with spoken language.

4. Discussion and pedagogical implications:

To investigate modal verbs in native and Egyptian learner English, the present corpus-based study attempts to explore: 1) the frequencies of modal verbs in native and Egyptian learner English corpora, and 2) similarities and differences in the semantic functions of modal verbs. The overall frequencies of modal verbs are 1943 in100 000 and 1579 in109 000 words in ELEC and MCUNS, respectively. The lower proportions of modal tokens in the native English corpus confirm the decreasing use in authentic English which Leech et al. (2009) have reported in British and American English from 1961 to 1991. Decline in the use of modal verbs is ongoing, as natives shift to use semi- modals. English native speakers employ a multiplicity of devices to express modality other than or in addition to modal verbs.

Frequencies of modal verbs in learner corpus are higher, but most of the modal verb tokens used in the entire corpus prove to be confined to will which almost represents one quarter. Can is also competing with will in getting the lion share. Coming third is should. The rest of the modals are underused.

The frequency order in the native English corpus is not that polarized. A considerable representation for most modal verbs is evident, despite the ongoing decline in the use of most modal verbs as reported in the present study and previous ones. Would, will, can, could and should constitute over 80 % of the entire modal examples in MCUNS , a percentage close to (Kennedy, 2002). The frequency order of modal verbs in ELEC seems to go consistent with other learner English studies. Khojesteh & Reinders (2013) report a similar prevalence of can and will

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further contexts"(ibid.). Grammaticalization manifests itself in the current use of modals and progressives. [*]

in Malaysian learner corpus. They find that will and can represent 59% of the modals occurring in the textbooks taught to learners. The rest of the modal in the textbook corpus is 41%. Thus, it is not surprising to find learners overusing them and reducing the modal system to only will and can. (Carrió -Pastor, 2014) attributes can dominance, which constitutes 60%. of the entire modal occurrences in a Spanish corpus of written English composition, to the diverse cultural conventions of writing.

Drawing on this, the dominance of the presumptive will and specifically the epistemic sense in ELEC could be explained. As mentioned earlier, Egyptians generally use downtoners and hedges to mitigate the force of their will presumptive, assertive statements. Even so, they do not have the sufficient linguistic and pragmatic knowledge and/or confidence to use L2 dowentoners and hedges. The result is that they may sound impolite, crude, authorial, etc. Further, learners get confused when tense and modality, though inseparable, are not clearly defined. Will is not a modal verb for many learners. Moreover, reducing modality realization to a bunch of confusing modal verbs, which suffer from ongoing recession, escalates the problem. Modality is diversely realized. Modal alternatives such as verbs (think, believe, claim), adjectives (possible, certain, willing), adverbs (probably, possibly, completely), etc. should be highlighted. The frequency of such forms and how they behave in learner English await several corpus-based studies.

As for the semantic functions of modal verbs, the proportions of modal tokens functioning epistemically such as epistemic necessity/ certainty, prediction, and possibility(and probability) are generally lower than those acting deontically. This is not surprising. Leech et al. (2009) report a decline in the epistemic use of should and must. Conversely, the epistemic use of may is on the rise. May tends to exclusively act as an epistemic modal, increasingly developing the monosmous meaning of possibility. In ELEC, the proportion of epistemic modal verbs is rather lower. Can, must, and should hardly sound epistemic to learners. Moreover, the significantly lower proportions of other significant epistemic modal verbs in ELEC than MCUNS, as in may(69/88), might (15/84), could (91/157) would (123/283) lay emphasis on the problem Egyptian learners have with the inappropriate use of epistemic modal verbs. The same is true of many epistemic semi-modals and phrasal modals. Tokens of epistemic perfective modal verbs such as can/could/ would/might/must   be +pp, though rare across corpora, are more underrepresented in ELEC. Most tokens of modals, accordingly, lie in the deontic camp.

On the other hand, the epistemic prediction sense of will is clearly represented in ELEC. The inappropriate use of epistemic modal verbs is mainly illustrated in: a) the low share of epistemic necessity and possibility tokens, and b) the overuse of the epistemic presumptive will on the other. Both indicate a general linguistic and pragmatic deficiency which does not enable learners to understand or convey intricate pragmatic meanings successfully in L2 (Chen, 2010).

As for the deontic functions, the obligation function of must features similarly. The remarkable proportions of can tokens in ELEC is possibly due to learners' assimilation of many modal functions to can. More commonly used in spoken English, be going to and have to are also more used by Egyptian learners, which is another indication of learners' poor pragmatic competence. Nevertheless, results show some aspects of similarity. Frequency of obligation should is similar in corpora.

Considering the current findings in relation to those of various studies on the use of modal verbs by learners from different L1 backgrounds, as illustrated in the review of literature , indicates that L2 learners employ fewer number of modal verbs. It seems to be a global phenomenon. It is true that there are cultural variations in how people use modals, which are transferred to L2 in degrees determined by their L2 proficiency. Yet, it seems that the problem has to do with modal teaching (Hu &Li, 2015). Due to their peculiar morphological, structural semantic and pragmatic properties, as well as the deviant modal systems in L1s, teaching modal verbs in L2 is one of the toughest tasks (Celce-Murcia & Larsen-Freeman 1999).

Textbooks are also to blame for the limited and confusing semantic and pragmatic functions of modal verbs. Epistemic modal verbs are not adequately covered in textbooks. The same is true of deontic functions. Morn (2009) finds that the textbooks and authors set the function priorities. For instance, most tokens of can and could in Swedish textbooks tackle ability through examples conveying that it is confined to "physical abilities" (p.12). The mismatches between real and school English pose a recurrent problem, as shown above. Thus, one can conclude that since the textbooks taught globally have similar priorities, contents, approaches, tests, as parts of the EFL and ESL big and lucrative industry, the output would be similar learning outcomes by learners from various L1 backgrounds. Modal instruction should observe the cultural peculiarities of source culture and language. The uniform pedagogic treatment of modals in L2 English proves to be largely unsuccessful.

Authors and teachers have to do corpus work to set the priorities in teaching modal verbs. Textbooks need not be stuffed by hideous discussions of complicated semantic details on modality and modal verbs. Infrequent and archaic modals, for instance, could also be almost ignored, sparing teachers and learners the pains of their teaching and learning. The current study shows that Egyptian learners need assistance with the epistemic modals. They also need to acquire more semantic senses of other modals. All these tasks should involve some corpus work.

Corpus linguistics has been employed in teaching modals in many directions. One is to conduct corpus-based comparative studies between real English and learner English (Chen, 2010). The second direction has to do corpus research on form and function of modal verbs in textbooks with the aim of seeing how similar or different real and school English are (Römer, 2004). A top cause of the deviant use of grammatical constructions, Khojasteh et al. (2014, p.179) argue, lies in "the mismatch found in corpus studies between the language presented in the prescribed textbooks and real language use".

The third direction is manifested in the corpus work on modal verbs in textbooks and learner English. The frequencies and functions of modals in textbooks extremely determine the frequencies and functions of learner modal verbs (Khojesteh & Reinders, 2013). For instance, it is found that epistemic modals rarely receive due attention. Enhancing intercultural pragmatic competence through "cultural-sensitive curricula and explicit pragmatic instructions in writing classrooms" is urgently needed. (Chen,2010, p.27).

Another semi-missing aspect of writing courses is tone, genre and audience awareness. Students write for the teachers and the intercultural sensitivity is poor. The result is that learners ' writings may sound pragmatically odd . In line with Tenuta et al. (2105), as modality in general and modal verbs in particular are core issues in language, and people cannot do without them , the study suggests integrating teaching grammar, pragmatics, semantics and writing.

Finally, many issues in the use of modal verbs in (learner) English await further corpus research. First, one of the study limitations is that the topics of written composition were left to participants to choose in ELEC, and the randomly selected articles in MCUNS were on diverse topics. So, it is not certain that the results obtained would be the same if composition topics are controlled. Second, little is unfortunately known about the frequencies and order of modal verbs in the textbooks taught in the

Egyptian context. Their investigation would explain Egyptian learners' modal behaviour. Third, the growing use of can, and the continuous decline of modal tokens in native corpora should be tracked in the future to see if modal verbs would continue to be mono-semantic, and, therefore, would behave similarly to modals in non-native Englishes. Last but not least, it is equally important to track more thoroughly the rising impact of popular culture, regional dialects and various forms of transculturalism on the mainstream use of English modal verbs, as this would eventually impact learner English.

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Appendix 1:

Figures 1 &2 Screenshots of must and would concordances In ELEC (top) and MCUNS (bottom).
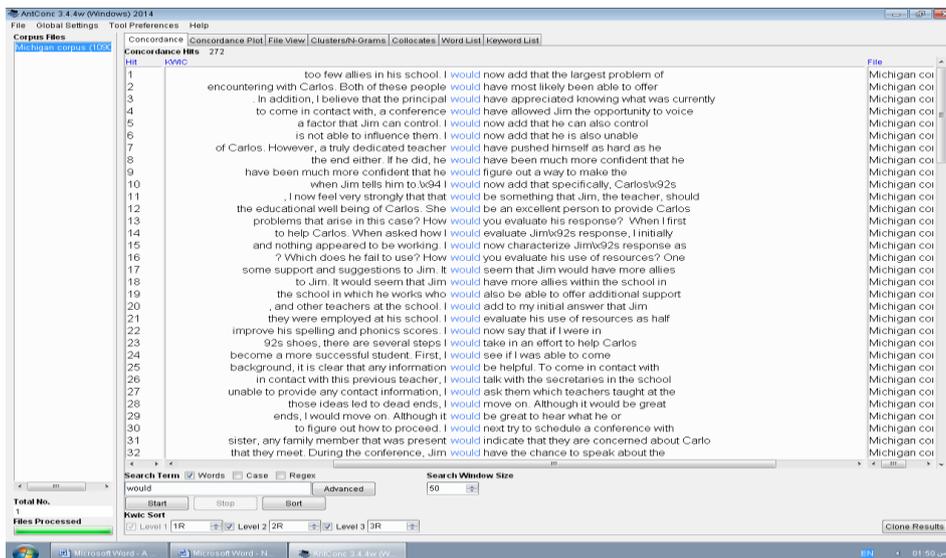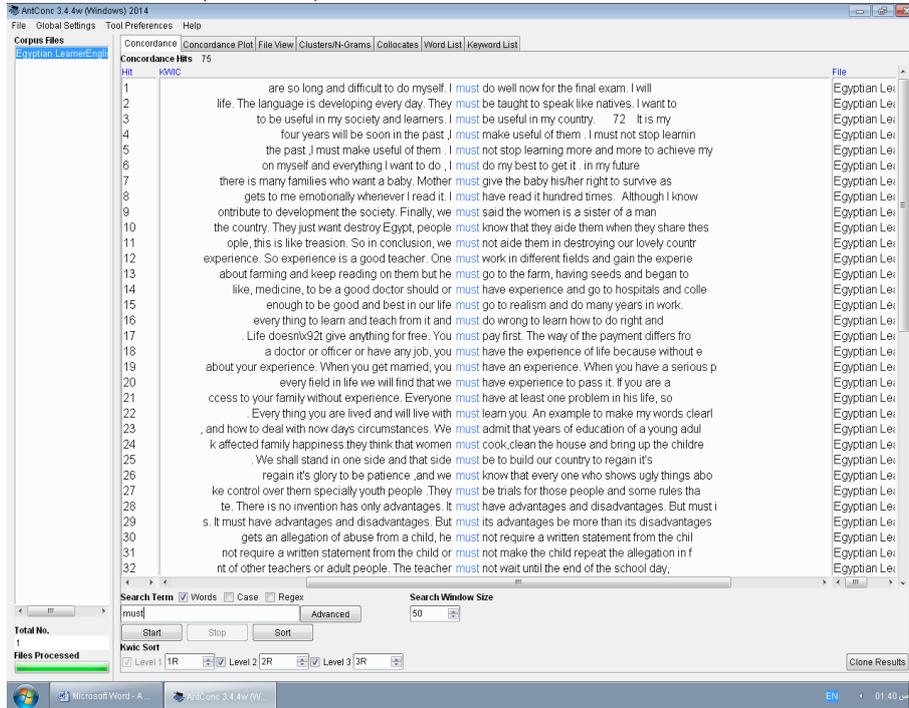
Appendix 2
Percentages of semantic functions in COCAAS

	Necessity certainty	Prediction Not completely certain	possibility	Obligation Prohibition recommendation	Habitual Past	Hypothetical	Volition	Suggestions/ Permissions	ability
Can			43.3%					6.7%	50%
Could			48%						52%
May			100%						
Might			100%						
Shall		46%		21%			33%		
Should			3.3%	96.7%					
Will		64%					36%		
Would			56.7%		3.3%	13.3%	26.7%		
Must	13%			87%					
Ought to				100%					
Able to									100%
Have to				100%					
Can be			57%						43%
Might be			100%						
Might have been			100%						
Must be	22%			78%					
Must have	100%								

been									
Be supposed to				100%					
Could be			58%					11%	31%
Could have been			100%						
Used to					100%				
Going to		24%					76%		