## DEONTIC MODAL USE IN AMERICAN ENGLISH

by

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B.A., Kansas State University, 2010

## A REPORT

submitted in partial fulfillment of the requirements for the degree

## MASTER OF ARTS

Department of Modern Languages College of Arts and Sciences

KANSAS STATE UNIVERSITY Manhattan, Kansas

2013

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2013

## **Abstract**

Modality, a concept for which linguists have struggled to come to an agreed-upon, comprehensive definition, has been the subject of many linguistic studies over the last several decades. The contemporary English modal system has a long history of semantic and morphological development, or grammaticalization, which currently consists of auxiliary modals that function with lexical verbs to express levels of obligation, necessity, ability, permission, and degrees of certainty. For native speakers of English, determining the appropriate contexts and form of a specific modal verb is second nature. However, grasping the contextual complexity of the English modal system can be difficult for English language learners. Deontic modals such as must, have to, have (got) to and should are often presented to English language learners as relatively equal in meaning and contextual appropriateness, which makes gaining a native-like command of these modals even more difficult. This study, on a small scale, describes contemporary usage through a comparison of similar studies and data from a series of sociolinguistic interviews with native speakers of American English. The participants range from the ages of 25-50. They were chosen from the local population of Manhattan, KS and have lived in Kansas for a minimum of 10 years. Through a quantitative analysis of the tokens, patterns of dialogic use will be extrapolated from the linguistic data. The research questions will seek to find established patterns of deontic modal use that in order to identify practical applications of usagebased research for textbook publishers, curriculum designers, and educators.

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## Acknowledgements

I would like to thank my committee members, Mary Copple, Earl Brown, and Tiffany Kershner for their time and contribution to my M.A. report. As an undergraduate in the Department of Anthropology at Kansas State University, Dr. Kershner, a linguistic anthropologist, was my advisor and I came to have a great deal of respect for her perspective on linguistics and language and I knew her input would be an asset to my report. Dr. Brown was also an immense asset to the research process as he introduced me to R, a software program that made the data extraction almost effortless. Without Dr. Brown I might still be extracting data rather than writing my acknowledgments. I want to thank Dr. Copple for all the guidance and support she has given me. She patiently helped me through this process with wise advice and feedback that made my report what it is and made me a better writer. She was supportive at times when I felt academically and personally overwhelmed. I chose an excellent committee of people who had a genuine interest in not only my topic, but also in helping me succeed.

I want to thank the graduate colleagues and friends I have met along the way. First, Robert Dunn inspired me to challenge myself through his own thesis work. Even after he moved on, I relied upon his input countless times when I needed guidance on my report. Alexander Hutchins kept me sane with his sharp wit and humor; grad school would have been dismal without him. Caroline Warburton may not know this, but upon getting to know her, I, for the first time, felt the desire to push myself harder academically, and I thank her for lighting that fire in me. I am also grateful to have met Ashley Walker, who helped me maneuver around the program my first year. The team of GTAs I worked with, Ryan Cloyd, Carol Lemmons, and Lindsey Lohr are amazing people. I could not have asked for a better group of people to share a small cubicle with. We were the definition of teamwork and camaraderie.

I am grateful to the ELP for allowing me to grow and learn under their guidance. While working with them I discovered the kind of educator I want to be and through Dr. Abby Franchitti's practicum courses I began to develop my identity as a teacher. Most of all, much thanks to Mary Copple for showing me how fascinating the world of linguistics and language can be when you approach it with the kind of infectious excitement she is known and loved for among her students.

## **Deontic Modal Use in American English**

The idea of obligation and necessity can be achieved through various linguistic means; modern English uses a system of auxiliary modals to convey personal and social obligations, as in "You may find that you *have to* go back to the beginning, do some more work and try again," an example pulled from the Corpus of Contemporary American English (COCA; Davies, 2008). In this example, *have to* is the auxiliary modal and expresses the speaker's expectation that an action must be completed. Other common modals of obligation used in English will be discussed in greater detail below. The purpose of this usage-based study is to analyze how native speakers of English use modals of obligation in a conversational setting and to compare those patterns to standard textbook explanations of expressing obligation and necessity.

For English language learners (ELLs), the English modality system is difficult to master due to the fine contextual differences that determine which modal is appropriate within a given conversational setting. Generally, ELLs learn to use modals in a very simplified and structured way since modals are often not contextualized in instruction, but as the data in this study will show, obligational modality is more complex than an explanation in an English textbook is capable of conveying. Recognition of the importance of informing second-language educators, therefore, of the need to incorporate authentic usage patterns into their lesson planning would be the ideal end result of this study.

Modality has been the subject of many linguistic studies over the last several decades and researchers still have not settled upon a comprehensive definition. The struggle to concretely define modality is partly due to the ambiguity of meanings it expresses. Palmer (1986) states that a system of modality is likely found in the grammar of all languages, since the need to express concepts of factuality, implied truth or certainty, obligation, possibility, and necessity would

logically be universal in nature. What can be discerned from the study of modality is that while a concrete definition may not exist, linguists generally agree that modality is "the grammaticization of a speaker's (subjective) attitudes and opinions" (Bybee, Perkins, & Pagliuca, 1994, p. 176).

Within any linguistic system, there are numerous ways to mark modality. For example, modality may be expressed inflectionally on the main verb or through lexical items (Palmer, 1986). Grammatical modality may be marked with clitics and particles, which are grammatical forms that may or may not occur with the verb or the verbal complex. As yet another means of expressing modality, modal auxiliaries may be used, as in English.

Even though modality is expressed through different linguistic means, Bybee et al. (1994) identify four universal types (however, only the first three will be discussed herein): agent-oriented, speaker-oriented, epistemic, and subordinating. Agent-oriented modality "reports the existence of internal and external conditions on an agent with respect to the completion of the action expressed in the main predicate" as in "I just insisted very firmly on calling her Miss Tillman, but one should really call her President" (Bybee et al., 1994, p. 177). There are two subtypes of agent-oriented modality: deontic and dynamic modality. Deontic modality (deonticity) expresses obligation, permission, and necessity as in (1) below; in English, *must, should, may, will* and *need to* are often used. Dynamic modality (dynamicity) expresses ability through the modals *can* and *could*, but will not be discussed further for the purposes of this study. Speaker-oriented modality includes many of the same moods as agent-oriented modality. However, unlike agent-oriented modality, speaker-oriented modality does not place any obligation upon an agent, but rather imposes the existence of a condition upon the addressee (Bybee et al., 1994). Epistemic modality, in this case, is speaker-oriented as it does not place upon an agent any

conditions but instead asserts the inferred certainty, possibility, or probability of truth of a statement; for example, *He must not be home yet* or *It may be that she doesn't know how* are examples of speaker-oriented modality. These types of modality are obviously intertwined. Historically, Fischer (2003) states that deontic and dynamic modals are considered "root modals" as they always precede the epistemic modal forms in the grammaticalization process.

In studies of deontic modality, the primary competing forms have established themselves; the commonly identified strong obligation modal and semi-modals are *must*, *have to*, *have got to*, *need to*, and *got to* (Myhill, 1996; Tagliamonte & D'Arcy, 2007; Tagliamonte & Smith, 2003). Strong deontic modality expresses an obligation that the agent feels strongly compelled to carry out. Examples 1-5 (from COCA unless cited otherwise; Davies, 2008-), show strong deontic modality in English.

- 1. "You *must* play this ten times over" (Bybee et al., 1994, p. 179).
- 2. "These methods *have to* be both rigorous and simple enough to be appropriated."
- 3. "When the firestorm broke out, the president basically said, we *have got to* speed up this process."
- 4. "You *got to* cut him some slack at some point. He's a competitor and he wants the ball."
- 5. "In addition, teacher educators *need to* stay informed about advancements in the fields of technology and engineering."

The level of obligation communicated by the deontic use of *must* in (1) or *have to* in (2) is such that the agent presumably has no other option than to complete the action imposed upon them. Strong deontic modals may convey the same meaning as an order or a command.

In contrast, modals of weak obligation are should and ought to. The examples below

(from COCA; Davies, 2008-), show weak deonticity is used to express a non-immediate obligation or advice (Azar & Hagen, 2006). Weak modals place a sense of obligation upon the agent, but the agent has the option to disregard the obligation, as shown in (6). Weak deonticity also may convey the idea that some action, other than the one taken, could have resulted in a more optimal result, as seen in (7).

- 6. "And I do think readers of those newspapers *ought to* ask, hey, what is going on here."
- 7. "Something wasn't right. And maybe we *should* have done more."

A few of these deontic modal auxiliaries simultaneously have established epistemic functions. As previously discussed, epistemic modality is used when the speaker is not imposing an obligation upon an agent, but rather is imposing the existence of a condition or implied truth, as shown in examples 8-10 below (from COCA unless cited otherwise; Davies, 2008-).

- 8. "I can only imagine how frustrating it *must* be to be a chef in this town."
- 9. "If that's the case, you'll be adding job search to your to-do list, but the outcome *should* more than offset the initial effort."
- 10. "I think English *has to* be one of the hardest languages to learn" (Tagliamonte & D'Arcy 2007, p. 70).

A synchronic study of variation in modal verb usage in U.S. English would be of great value to U.S. English second-language instructors since explanations in textbooks and design of curricula often lag contemporary usage. Selecting the appropriate contexts of a specific modal verb is second nature for a native speaker, but articulating this instinctive contextual understanding that gauges levels of obligation, necessity, ability, and inferred truths can be difficult for teachers of English as a Second Language. Strong modals and semi-modals such as must, have to, have got to, and got to, are often presented to second language learners as

relatively equal in meaning. The weaker modals, *should*, *ought to*, and *had better* are also presented side by side. *Need to* is not mentioned among the modals in two popular ESL textbooks (Azar & Hagen, 2006; Azar & Hagen, 2009). Studying the semantic origins of modal auxiliary verbs and how they have developed semantically and grammatically over time sheds light on how we can describe and, ultimately, for the purposes of this study, incorporate knowledge of these language use patterns into second language teaching.

## **Previous Research**

The process of grammaticalization is a universal phenomenon that can affect many different aspects of language, not just modality. According to Bybee et al. (1994), grammaticalization theory is based upon the idea that a grammatical form originates as a lexical item within a linguistic system and over time becomes less lexical and more functional in its emerging role within that system. Grammaticalized forms were once content words rich in meaning, but through usage developed the properties of a function word. Hopper & Traugott (2003, p. 5) use the example of "pa hwile pe (that time that)," from which developed the temporal connective 'while' as an example of a lexical word or construction that became a grammatical item (Hopper & Traugott, 2003, p. 5). The new grammaticalizing form can coexist and compete with already existing forms, seen later in the discussion about the grammaticalization of English modality. Hopper & Traugott (2003) also state that grammaticalization follows a unidirectional path, leading the changing linguistic item from lexicality to grammaticality. But what is a grammatical form and how do they change? Clines, or observed paths of grammaticalization, describe the process of change that a linguistic item goes through, with a focus on marking the changes in form and function; Hopper & Traugott (2003) explain that a commonly agreed-upon cline of grammaticality would be as follows: "content item > grammatical word > clitic > inflectional affix" (p. 7). The clitic in this cline refers to an obligatory form that is not an affix, but cannot occur without a main word to attach to; morphologically reduced forms in English are examples of clitics: 'll (will), 're (are), or 's (is). Clitics may, according to grammaticalization theory, develop into inflectional affixes and lose their autonomous status. Other clines exist and will vary depending upon the form and the language (Hopper & Traugott, 2003).

In order for grammaticalization to occur, the lexical form in question must be general or generic in meaning. When considering movement verbs, the most commonly used are *go* and *come*. Each of these verbs can be used in a wide variety of contexts, especially *go*, unlike movement verbs such as *gallop*, *leap*, or *stomp*. Overuse then may lead to semantic bleaching, or partial or complete loss of the item's original lexical meaning. In the case of *go*, it may now be used to express non-motion actions such as, 'She's going crazy.' or 'He went all out.' (constructed examples), which was previously not possible. Semantic bleaching will also cause a form to not only be more diversely used; it can also cause the form to lose entirely its previous meaning or linguistic status, as in the case of English modal auxiliaries, which no longer retain the main verb status of their earlier lexical verbs. Since grammatical forms are function words that lack the depth of meaning of a lexical word, this process of overuse and semantic bleaching makes a form ripe for the process of grammaticalization (Bybee et al., 1994).

Grammaticalization may be viewed through a diachronic or synchronic lens – each perspective supplying useful knowledge to the researcher about linguistic change. Diachronic studies examine linguistic change as it occurs throughout history, as in the case of Fischer's (2003) study of modal development from Old English to contemporary English. Diachronic studies present grammaticalization as the process by which a lexical item becomes increasingly

grammatical. Synchronic studies analyze language as a snapshot in time, which allows researchers to study variation among different dialects and linguistic groups (Hopper & Traugott, 2003). Tagliamonte & D'Arcy (2007) conducted a corpus-based synchronic study of modal variation in Canadian English that shed light on developing modality patterns and Tagliamonte & Smith (2003) conducted a similar study on English varieties in the U.K. The current study employs a synchronic approach to study variation in the use of deontic modals of obligation/necessity describing contemporary usage through an analysis of sociolinguistic interviews of native speakers of American English.

Studying the grammatical and semantic origins of contemporary modals is essential to understanding the competition that exists among contemporary modal forms. Fischer (2003) describes how contemporary auxiliary modals have developed from Old English verbs that enjoyed the range of semantic, morphological, and syntactic features that accompany full verb status. Fischer (2003) argues that modals did not change abruptly, or radically, but grammaticalized gradually over long periods of time as part of a continual "modality cycle." It was during the Old English (500-1066) and Middle English (1066-1500) periods that the grammaticalization from full verb status to auxiliary verbs began its process. She goes on to explain that the subjunctive forms (subjunctive verb affixes) in Old English became less efficient for expressing modality due to "syncretism with indicative forms in the Late Old English and early Middle English periods" (Fischer, 2003, p. 18; c.f. Tagliamonte & D'Arcy, 2007).

In response to the subjunctive forms' weakening, those inflected subjunctive forms were strengthened by the presence of root modals, which were initially used along with the subjunctive form for emphasis or clarification of the deontic meaning, The root modals in their Old English and Modern English (1500-Present) forms are: *willan/will*, *cunnan/can*,

sculan/shall, magan/may, mot/must (Fischer, 2003; Tagliamonte & D'Arcy, 2007). The Old English forms are also often referred to as pre-modals, since in their original sense they did not always function as modern English modals (Fischer 2003). In order to assume the burden of expressing deontic meaning, however, the pre-modals must have already exhibited usage patterns that would encourage this shift in meaning. Fischer (2003) makes the case for their gradual grammaticalization by arguing that while there was a shift from full verb status to auxiliary, the modals continued to exhibit many of the same properties as full verbs well into Middle English. One of the properties that distinguish a lexical verb from an auxiliary is that auxiliaries cannot pair with a direct object or have an infinitival or participle form. Fischer (2003) presents examples of pre-modals in Old English being used both as full lexical verbs and as modality markers. In example (11), willan appears in its participle form (willende); in (12), the verb sculan appears in its participle form with a direct object (him), thus showing full verb status. However, example (13) shows two pre-modals (magan and cunnen) used together to express possibility, a sense their contemporary auxiliary counterparts may and can are used to convey. (p. 25)

11. "Se ðe bið butan willan besmiten oððe se ðe *willende* on slæpe gefyrenað, singe <XXIV> sealma."

"Whoever is defiled against his will or who, willingly, fornicates in his sleep, let him sing twenty-four psalms."

12. "He cwæð þæt he sceolde him hundteontig mitten hwætes."

"He said that he owed him (a) hundred bushels of wheat."

## 13. "& hwu muge we bone weig cunnen?"

"and how can we know the way?"

Thus, the pre-modals once functioned as full lexical verbs, but as the subjunctive fell out of use in the Middle English period, the modal function of these pre-modals became more established and more frequent. As a result, the lexical verb forms fell out of use and the modal forms developed over time into their current auxiliary status.

According to Tagliamonte & Smith (2003), *mot* in Old English expressed permission or possibility, but its form developed into *must* by Middle English and the aspect of permission was lost. Deonticity were expressed by *must* and *have to* (and epistemicity via *must*), until, according to Tagliamonte & D'Arcy (2007), Modern English introduced *have got to, got to*, and much more recently, *need to*. During the Middle English period, as Fischer (2003) claims, the older modals (*shall, can, will, may, must*) had established themselves in usage, and semi-modals, such as *have to, have (got) to*, and even *had better*, began to appear. She notes that even within these semi-modals the process of grammaticalization can be seen in that *have to* was able to express an epistemic sense on par with *must* (Fischer, 2003). Fischer's diachronic perspective on modal grammaticalization emphasizes the gradual integration of forms – pre-modals, core modals, and semi-modals – into the modal system.

Tagliamonte and D'Arcy's (2007) variationist study of Canadian English deontic modality provides an in-depth description of the contemporary use of modals of strong obligation. They examine data from corpora of both spoken and written language from Toronto, Canada. The results are compared with other varieties of English. Tagliamonte & D'Arcy (2007) consider many conditioning factors in the selection of a particular modal, but the factors that seem most pertinent to this study are how education affects the selection of a modal and which competing

forms are falling out of use. It was found that Toronto speakers used *have to* and *got to* more than any other form, and of those two, *have to* occurred almost 90% (N=949/1314) of the time. However, when considering education as a factor, persons with less education consistently used the form *have got to*, which was considered stigmatized due to its association with the less-educated. The competing forms *must* and *have got to* appear to be falling into disuse, due to *have to* dominating as the deontic modal of choice, even replacing *must* in formulaic expressions with speakers under 60 years of age, see example (14a & 14b) (Tagliamonte & D'Arcy, 2007, p. 73).

- 14. a) "Which was a relief, I must say."
  - b) "Yeah, that really blew my mind I have to say."

The distribution of deontic modals in Tagliamonte & D'Arcy's (2007) study showed that *must* within Canadian English has grammaticalized to the extent that it is rarely used in its original deontic sense, but rather frequently expresses an epistemic sense that implies logical necessity. In 1,314 instances of deontic modality (see examples 1-5), *must* accounted for only 2% (22 occurrences) of the data set. The modals *have got to* and *got to* convey similar deontic meaning as *have to*, but are favored in speech over writing, in informal registers, and may carry a social stigma due to their use by speakers from lower educational backgrounds. Overall, they appear less frequently than *have to*, accounting for 6% (*have got to*) and 12% (*got to*) of deontic modality. Interestingly, in the epistemic sense, *have got to* and *have to* were equally favored, each appearing 21 times (18%), while *got to* appeared only 6 times (5%) epistemically. In epistemic modality (see examples 8-10), *must* is clearly favored with 64 of the 116 (55%) epistemic modal occurrences. When examining English in the U.K., epistemic modality was overwhelmingly expressed through *must*, in many areas it was at 100% (Tagliamonte & Smith 2006).

Not introduced into the deontic modality system until relatively recently, *need to*, did not reflect any major fluctuations of use between generations in language patterns, which is exceptional in comparison to the other deontic modals. In the deontic modal data, *need to* represented only 8% (108 occurrences), and in the epistemic modal data, it was even less frequent at 3% (4 occurrences). What Tagliamonte & D'Arcy (2007) found to be unique about *need to* is that over apparent time trajectories, its frequency of use stays steady, unlike the other deontic modals which either increased in frequency through successive generations (*have to*) or decreased (*must, got to, have got to*). They state that, at least in their data set, *need to* "may simply be maintaining its own functional niche in the modal system (i.e. internally motivated compulsion)" (Tagliamonte & D'Arcy 2007, p. 72). This study will use these trends as a point of comparison to determine if U.S. English speakers follow the same patterns as the Canadian speakers from Toronto.

So why do some modals appear more frequently in epistemic senses than in deontic senses, especially modals such as *must* which have traditionally been taught as deontic to English language learners? Epistemic senses develop later and out of agent-oriented senses. In regard to deonticity, strong obligation gives way to inferred certainty and weak obligation gives way to probability (Tagliamonte & D'Arcy, 2007; Bybee et al., 1994). This can be seen in the previous examples of deontic and epistemic *must*, *have to*, and *should*. *Must*, the oldest deontic form (as will be seen in the following section), is increasingly losing its deontic function across English varieties; in regions like England, Northern Ireland and Scotland, the deontic sense has been lost entirely, with only the epistemic sense occurring. In these varieties *have to* is the dominant deontic modal and has also developed an epistemic sense as well (Tagliamonte & Smith, 2006). Bybee et al. (1994) explains that the diachronic trajectory for epistemic and polysemous modals

is that the agent-oriented senses always precede the speaker-oriented and epistemic senses, a phenomenon that has been found cross-linguistically. This means that in usage, agent-oriented modality typically occurs first, and through the process of grammaticalization modals can become polysemous, or have concurrent agent-oriented and epistemic usages, and their original agent-oriented use becomes increasingly less frequent until the modal becomes entirely epistemic. This is due to the "conventionalization of implicature, by which the inferences that can be made from the meaning of a particular modal become part of the meaning for that modal" (Bybee et al., 1994, p. 196). When a modal has its original deontic meaning, in order to change, the modal must occasionally be used in a sense where the inference is assumed to be part of the meaning of the modal, thus the existence of polysemous modals; these modals may eventually develop a strictly epistemic sense, as in the case of *must* in some varieties. So, in other words, epistemicity is the grammaticalization of inference in agent-oriented modalities (Bybee et al., 1994).

Few studies have examined modal use in U.S. English. John Myhill (1996) studied strong obligation and modality in written dialogue in plays between 1824 and 1995. He documents how usage patterns of strong deontic modality differentiate the meaning of individual obligation/responsibility versus societal obligation/responsibility. Myhill (1996) attempts to connect the different modals to the subject through levels of emotional involvement, feeling of personal obligation, feeling of societal obligation, and even self-interest. The data for Myhill's research were drawn from written, dramatic dialogue and not spontaneous speech, so it is perhaps more reflective of how speakers think modals should be used, rather than how modals are actually used. What Myhill (1996) found is that modals he associates with individual action, interests, investment, and desire (got to and have to) increased significantly over time, in

particular after World War II. <sup>1</sup> *Got to*, marked by Myhill (1996) as a modal that focuses on self-interest, did not appear in his data until after the Civil War, and increased in use even more after World War II. Other modals that he identifies as focused on individual interest (*gonna* and *should*) reflect these same patterns. Conversely, *must*, which reflects a strong sense of external responsibility, a lack of self-interest, and a benefit to others, has fallen proportionately out of use. He remarks that its modal counterparts *will* and *ought to* follow the same pattern as *must*. Ultimately, Myhill argues that his study could provide another perspective on the process of grammaticalization, which suggests that grammatical developments occur in large semantic groupings, so when a society decides to focus more on the individual, they naturally begin to use modals and other elements of language that reflect that change in cultural perspective (Myhill, 1996). Myhill's findings on U.S. English modality will also be compared with my own results in order to possibly find some overarching patterns of modal use.

As we have seen in this section, the English modal system has been studied to a great extent in Canadian and U.K. dialects, but an equivalent quantitative study in U.S. English has not been conducted, which is what this report will attempt on a small scale.

## Research Questions

This study seeks to describe usage patterns in Midwestern U.S. English for many of the same auxiliary modals as seen in previous studies.

- 1. What is the relative frequency of the competing strong obligational modals and the weak obligational modals?
  - a. I hypothesize that in deontic modality in American English deontic *must* has all

<sup>1</sup> The U.S. Civil War occurred from 1861 to 1865. World War II occurred from 1939 to 1945. Myhill chose these wars as they were key points in the cultural evolution of the U.S.

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but disappeared from use and within conversational settings is only used in an epistemic sense.

- b. It is hypothesized that in place of *must*, *have to* and *need to* are believed to occur with greater frequency than the other strong obligation modals.
- c. In regard to weak obligation, *should* is hypothesized to occur with greater frequency than *ought to* and *had better*, in both deontic and epistemic senses.

This study will also analyze what linguistic and extralinguistic factors determine which modal a speaker employs in a given context. One overarching interest in this study is the apparent disappearance of the deontic modal *must* in most conversational settings in varieties of English, a usage-pattern that is not reflected in ESL materials. Finally, this study will analyze the role of *need to* as a modal of strong obligation, as it is typically not included in ESL materials on modals.

## Methodology

This study analyzes the contexts of use for particular modals and seeks to describe patterns in U.S. English native speakers' deontic modality usage. It will also compare the frequency of deontic and epistemic meanings among the modals. The following section will explain the data collection and analysis process in order to provide insight on the framework under which the study was conducted. All examples were pulled from the data so as to contextualize the linguistic coding process.

## **Participants**

The participants (N=8) are native speakers of U.S. English who have been residents of Kansas for a minimum of 10 years prior to the interview. Participants were classified by age: between a) 25-32 years of age, b) between 33-39 years of age, and c) between 40-50 years of

age. There were 4 female participants and 4 male participants.

#### Data Collection

Prior to contacting any potential participants, an Institutional Review Board (IRB) process was initiated, and approval of the University Research Compliance Office (URCO) at Kansas State University gained in order to conduct sociolinguistic interviews with human subjects. Participants were chosen from the researcher's social network (c.f. Tagliamonte, 2006) and were asked if they would like to take part in a study that analyzes how native speakers of U.S. English use a particular element of language. The participants were not informed beforehand of the element of language the researcher was studying in order to collect the most natural speech possible. Every participant was provided an Informed Consent packet to read and sign before the start of the interview. The packet reviewed their legal rights as participants, including an explanation that their identity would be kept anonymous, as well as a consent waiver to record the interview. Before each interview, the participant responded to a demographic survey asking their sex, age, educational level, how long they had lived in Kansas, the residence (city and state) they had lived in the longest and its approximate population. All interviews were recorded with a digital voice recorder.

The sociolinguistic interview format was selected because it allows for natural conversation within an interview setting. The interviews took place in relaxed, casual settings that fomented the feeling of naturally-occurring social conversation. Each interview included 50-55 minutes of recorded conversation. Some topics of conversation during each interview were geared toward questions about obligations (future plans, etc.), but the participants were allowed to talk freely about any subject they felt like discussing. The goal was to elicit as natural of speech patterns as possible since the element of language under study is so frequently occurring

in speech (Tagliamonte, 2006). Three frequently asked questions were:

- 1. What is a typical busy day for you like?
- 2. What is a funny or interesting story from your past?
- 3. What are your plans or hopes for the future?

After each interview was concluded and the recording ended, the participants were given a debriefing form which explained what aspect of their language would be analyzed. All copies of the signed consent forms, as well as copies of the anonymous transcriptions and audio recordings are kept in a secure location. The transcriptions and audio recordings will be shared with Kansas State University for their use in future research.

## Data Extraction and Coding

The data was extracted using R, software used, among other uses, to scan documents for linguistic data. The original data set consisted of 271 tokens. The tokens were manually sorted in order to identify which needed to be deleted. In the case of *have (got) to*, R was programmed to pull from the transcripts *have got to* and *got to*, although they were grouped together in the final data set as *have (got) to* due to their small representation overall. As a result, dynamic *got to* tokens such as, "I liked it because I got to connect with families" that R extracted from the transcripts were deleted because they are dynamic modals that express ability or permission rather than obligation or necessity. Other tokens that were excluded from the data were all modals used by the interviewer so as not to skew the results. The final data set consisted of 166 tokens.

Each modal was then coded for tense, polarity, and whether or not it was used in a deontic or epistemic context. A token was identified as deontic if it expressed a sense of obligation upon the agent or addressee (15), whereas it was identified as epistemic if the meaning

expressed an implied truth and no obligation was placed upon the agent, as in (16). Epistemic and deontic tokens will be discussed separately in the analysis section.

#### Deontic token:

15. "Isn't it stupid that you *have to*, you know, pay such a large amount of money to pay for things?"

## Epistemic token:

16. "Hm. Okay. So that *must* be the case."

Each deontic token was also coded for temporality of the event described. In these data, two sorts of temporal reference were found: those describing an immediate obligation (i.e. due to be completed soon), as in example (17), or those with an atemporal value in which the speaker was discussing a habitual obligation or general expectation, see (18). Deontic tokens were coded as immediate or atemporal; however, epistemic tokens were by default considered atemporal because they imply a truth and not an obligation.

#### Immediate:

17. "I saw you walking forward and then you stopped and then you turned around then, I *need to* email her back!"

## Atemporal:

18. "And that, you know, every site where they stop I think *has to* be handicap accessible."

The accompanying subject of each modal was coded for grammatical person and if the subject was generic or specific. The main verb appearing with the modal was coded to detect transitivity, semantic class, and lexical aspect. Within the larger context, each deontic token was then coded to detect if the obligation was externally or internally imposed. Epistemic tokens

were not coded for imposition as they do not impose an obligation upon the agent. Deontic tokens were coded as externally imposed if the obligation came from a source other than the agent, as seen in example (19).

20. "Anything that's out on that sidewalk, City *has to* okay it."

Internal imposition was coded when the obligation expressed was personally imposed by the agent upon him or herself, as in example (21).

21. "I think this is something we *need to* incorporate."

This study also considers the social factors of age and sex.

## **Data Analysis**

This section will be an analysis and discussion of the relative frequency and distribution of the modals that appeared in the data set. The analysis will attempt to find and explain frequent patterns of use among the various modals so those patterns can be compared with current presentations in second language education. The data set consists of 166 tokens; the modals that appeared include *have to, have got to, got to, need to, must,* and *should*; *ought to* and *had better* did not appear in the data. Table 1 below shows the distribution of the tokens by modal verb and sense. First, the deontic tokens will be discussed, followed by a discussion of the eight epistemic tokens (*must, should,* and *have to*).

Table 1. Distribution of each verb in a deontic and epistemic sense.

	То	tal Representation	of Tokens	
		Deontic		Epistemic
Modal	N	%	N	%
Have to	99	63%	1	12%
Should	28	18%	5	63%
Need to	24	15%	0	0%
Have (got) to	7	4%	0	0%
Must	0	0%	2	25%
Total	158	100%	8	100%
chi-squared = 5	1.93, df 4, <i>p</i>	≤ .001, Cramer's V	V = .56	I

The most frequently used deontic modals are *have to* (99 tokens), *need to* (24 tokens), and *should* (28 tokens). *Have to* and *need to* express a sense of strong deonticity, or place a strong sense of obligation upon the agent in an utterance. *Have to* comprises 75% of the strong deontic modals, making it the most preferred strong deontic modal (see Chart 1 below). Interestingly, *need to*, which is not typically presented in language learning textbooks as a modal of obligation, is the second most frequent modal for expressing strong deonticity with 24 tokens, or 15% of the data. In contrast with those two, have (*got*) to represent 4% of the data and *must* does not appear deontically. Importantly, even though *have* (*got*) to and *must* are significantly less frequent in use than *need to*, English language textbooks present them as equal in appropriateness as *have to* while as previously stated *need to* is often not presented as a modal at all.

The small number of tokens of *have* (*got*) *to* could be due to it developing a specific niche within the obligation modal system. A preliminary evaluation of *have* (*got*) *to* indicates that this modal may be becoming associated with either a very immediate obligation or to convey

reported speech. Since the format of the interviews precluded the interviewee having an immediate obligation (i.e. the interviewee had agreed to set aside time for the interview, thus should not have planned other obligations), immediate obligation was most often expressed in the speakers' use of narratives and quotatives. Five of the seven *have* (*got*) *to* tokens were used in a quotative context to report speech, as in (22) and (23). A larger data set is necessary to see if *have* (*got*) *to*'s limited use is due to decreasing use overall, or the development of a niche purpose.

- 22. "And I was like, 'One of these days I have got to get a picture of this."
- 23. "And he's like, 'Yeah.' And I was like, 'Ah, you got to go. I'm sorry."

When looking at weak deontic modality, the only weak modal that appears in the data is should (N=28), even though ought to and had better were included as possible variants in the data collection since they commonly appear in language learning textbooks. Weak deontic modality often conveys an obligation that is optional or not pressing, it also is used to express advice. What can be gathered from the data is that should is the dominant weak deontic modal; a larger data set would be necessary in order to analyze the frequency and patterns of use for ought to and had better.

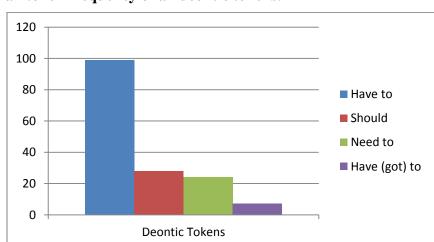


Chart 1. Overall token frequency of all deontic tokens.

When looking at temporality in the deontic tokens, atemporal tokens were much more frequent as the speakers referred to habitual/daily obligations or social expectations rather than immediate obligations.. As can be seen in Table 2, the strong deontic modals *need to* and *have* (got) to exhibit a relatively even distribution of use in the two identified temporal contexts, whereas *have to* shows a marked preference for atemporal contexts. This could indicate that *need to* and *have* (got) to have established themselves as modals of immediate obligation, while *have to* maintains a sense of general obligation or expectation. The data for *should*, the weak deontic modal, also indicate a strong preference for atemporal contexts of use. This atemporal preference with *should* will be further discussed when looking at how *should* functions within the realm of epistemicity. While in my data *have to* only occurs once epistemically, it does occur with greater epistemic frequency in the previously discussed studies, so therefore its relationship to atemporality is akin to that of deontic, atemporal *should* and epistemic *should*.

Table 2. Relative frequency of the deontic modals in relation to temporality.

	Atemporal		Immediate	
	N	%	N	%
Have to	72	73%	27	27%
Need to	13	54%	11	46%
Have (got) to	4	57%	3	43%
Should	25	89%	3	11%
chi-squared = 8.7	6, df 3, $p \le .03$ , C	ramer's $V = .24$		

An analysis of obligation, that is, whether it is externally or internally placed upon the agent showed that internal obligation accounted for about 35% (N=55) of the tokens. Internal obligation is particularly frequent with a first person subject, 67% (N=103) of internal obligation tokens. Logically, expression of internal obligation is most likely in a first person context.

Overall, all of the deontic variants occurred more frequently in externally imposed contexts, but *need to* and *have (got) to* more strongly preferred external imposition, as seen in Table 3 below. The results for *have (got) to* are inconclusive due to the low number of tokens, but *need to* and *have (got) to*'s role as the preferred modals for immediate obligation may be related to their clear preference for external imposition. Perhaps if an obligation is felt to be externally imposed, the speaker feels a more immediate need to fulfill it. In regard to *need to*, its preference for external imposition was surprising, as the idea of expressing a need might indicate that the speaker feels an internal obligation to complete the task. In Tagliamonte & D'Arcy's study of Canadian English, *need to* was low in frequency and did not favor a particular context, but as this study indicates, it is used differently in U.S. English; *need to* is the second most commonly used strong deontic modal and it appears frequently in externally imposed contexts. *Have to* indicates a preference for external imposition two-thirds of the time, but *should*, on the other hand, has a relatively more even distribution. A larger data set would provide a more detailed description of how external and internal imposition relate to which modals speakers prefer in a given context.

Table 3. Relative frequency of the deontic modals in relation to imposition.

	External vs. In	ternal Imposition	1		
	Ext	External		Internal	
	N	%	N	%	
Have to	65	65%	34	35%	
Have (got) to	5	71%	2	29%	
Need to	17	71%	7	29%	
Should	16	57%	12	43%	
chi-squared = $1.27$ , df $3$ , $p$	≤ .7, Cramer's V	= .09	•	•	

## Social factors

The strong deontic modals were evenly distributed across the two sexes, however the male speakers used *should* more often than the female speakers with 19 *should* tokens used by men and 9 used by women. This anomaly, however, may be due to the topics of conversation rather than a gendered preference for the modal *should*; a larger data set would likely show a more even distribution or allow for more in-depth analysis of gendered patterns of use. Men also used deontic modals in an atemporal context at a higher frequency than women; men spoke atemporally about 83% of the time while women only 63% of the time. Immediate obligation appeared most frequently in contexts where the speaker was telling a narrative and/or using quotatives because within the context of the story or the re-created speech, the obligation is very immediate. This may indicate that men prefer to speak about obligation in a general sense, rather than relating or including statements of obligation in narratives via the use of quotatives and story-telling. A larger data set and more in-depth qualitative analysis of the context for each token would provide greater insight, particularly seeking out a correlation between the expression of immediate obligation in the use of narratives and/or quotatives.

The other social factor considered was age. When analyzing by age groups, the results were somewhat unexpected in that the younger speakers used fewer modal variants. The youngest age group (25-32 years old) only used have to, need to, and should. The next age group (33-39 years old) used the previous modal set and added have (got) to. The oldest age group (40-50 years old) used the entire range of variants represented in the data: have to, have (got) to, need to, must, and should. The reduced set of variants in the younger speakers' speech suggests that some variants may be falling out of use or specializing for use in more restricted contexts. The data (and also the previous research) clearly show that must's role in the modality system (in regard to conversational English) has become highly infrequent. Must is also the oldest modal in

the data and has clearly evolved to an epistemic rather than deontic meaning. As *got to* and *have got to* (represented overall as *have* (*got*) *to*) are younger than the other modals, it would be expected that younger generations of speakers would be more likely, not less likely, to use them in conversation. However, as discussed earlier, a larger data set is necessary to determine if *have* (*got*) *to*'s infrequent use is due to falling out of use or developing a specific usage pattern.

## Epistemic modality

Epistemic modality, which is used to express an implied truth, accounted for only eight of the 166 tokens in the data set (5% of overall total). Epistemicity was expressed only with should (5 tokens), must (2 tokens), and have to (1 token). Notably, must was only used in epistemic contexts, and then only twice among the 8 epistemic tokens. This is important because *must* is traditionally presented as the core deontic modal and is frequently taught in language learning classrooms as a strong deontic modal equal to have to. However, in this and previous studies, the data reflect that *must* is no longer favored by native English speakers to express obligation. When used in speech, must is almost exclusively a modal to express epistemicity. Have to appeared once as an epistemic modal (1% of the entire have to tokens), which shows that speakers still prefer to use have to in a deontic context. In these data, the preferred modal for expressing epistemicity was should. Should appeared a total of 33 times in the data, and 5 of those instances were epistemic; comparatively then, epistemic should tokens are 15% of total should tokens, and 62.5% of total epistemic tokens. Should's frequent use to express epistemicity may also be related to its role as a weak deontic modal; within deontic contexts, should was used in an atemporal context 89% of the time. There is a relationship between atemporality and epistemicity in that the obligation or implied truths exist, but are not immediate or necessarily placed upon the agent; the meaning expressed in both is often generic in nature, rather than an

immediate, specific obligation<sup>2</sup>. However, a larger data set is needed to gain a comprehensive description of epistemic modality.

#### Conclusions

When considering how these data results compare to previous research on deontic modality, there are certain patterns that are more significant to the field of English language instruction than others. First, the role of *must* as a deontic modal is clearly shown to be a thing of the past. Must, in every data set reviewed in this report, is rarely, if at all, used to express obligation; it is used almost exclusively by speakers to talk about implied truths, and within my personal data, its appearance as an epistemic modal was infrequent as well. Second, need to is the second most commonly occurring modal in my data, representing 15% of the deontic tokens, and in Tagliamonte & D'Arcy's (2007) study of Canadian English, represented 8% of the deontic tokens; this finding suggests that *need to* is much more relevant to expressing obligation than must, yet must is still presented in the English language textbooks reviewed here (Azar & Hagen, 2006; Azar & Hagen, 2009) as equal to have to (the most common deontic modal), while need to is not presented at all. Third, in those English language textbooks, the complexity of should is neglected. In spite of the limited data in this report, should still showed that its usage patterns are more diverse (both weak deonticity and epistemicity) than those represented in textbooks (see Figure 1). Myhill's (1996) qualitative analysis attributes the increasing use of should to social factors such as society's increasing concern with the individual over the other, however, a comprehensive quantitative analysis of should would provide useful insight into how speakers actually use should.

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<sup>&</sup>lt;sup>2</sup> It is hypothesized that this atemporal quality may have led to *have to*'s extension to epistemic contexts as well, but data are sparse in this set.

Using Azar & Hagen's (2006) *Basic English Grammar* as an example of how English language textbooks present deontic and epistemic modality to students, see Figure 1 below, *should* is the first deontic modal presented to ELLs. It is described as being used for giving advice, but does not provide any information on how it can be used in an epistemic sense to convey possibility or clearly explain how it may be used to convey speaker-oriented weak obligation (as we generally do not conceptualize advice as something given to ourselves).

Figure 1. Azar & Hagen's (2006, p. 379) introduction of should.

13-1 USING SHOULD	
<ul> <li>(a) My clothes are dirty. I should wash them.</li> <li>(b) Tom is sleepy. He should go to bed.</li> <li>(c) You're sick. You should see a doctor.</li> </ul>	Should means "This is a good idea. This is good advice."
(d) I You She He It We They	Should is followed by the simple form of a verb.  INCORRECT: He should goes. INCORRECT: He should to go.
<ul> <li>(e) You should not leave your grammar book at home. You need it in class.</li> <li>(f) You shouldn't leave your grammar book at home.</li> </ul>	NEGATIVE: should not  CONTRACTION: should + not = shouldn't

In Figure 2 we see the introduction of *have to* as the means to express a need. This presentation is interesting because it uses the idea of *need to* to explain when to use *have to*, but *need to* is never presented as an option to express that same deontic sense of necessity or obligation.

Figure 2. Azar & Hagen's (2006, p. 383) introduce have to.

(a) People need to eat food. (b) People have to eat food.	(a) and (b) have basically the same meaning.
Jack needs to study for his test.     Jack has to study for his test.	(c) and (d) have basically the same meaning.  Have + infinitive has a special meaning: it expresses the same idea as need.
(e) I had to study last night.	PAST FORM: had + infinitive.
(f) Do you have to leave now?  (g) What time does Jim have to leave?  (h) Why did they have to leave yesterday?	QUESTION FORM: do, does, or did is used in questions with have to.
<ul> <li>(i) I don't have to study tonight.</li> <li>(j) The concert was free. We didn't have to buy tickets.</li> </ul>	NEGATIVE FORM: don't, doesn't, or didn't is used with have to.

Finally, Figure 3 introduces *must*; there are several presentational points in this figure that would indicate to a learner that *must* is a valid and relevant modal of obligation, which, as previously discussed, is not reflected in native speaker data. First, *must* is introduced as *have to*'s interchangeable counterpart, which is not accurate as *must* in place of *have to* in most deontic contexts makes the speaker sound stilted or unnatural. Second, the explicit comparison of obligational strength of *should* to *must*, but not *have to* implies that *must* is the modal of choice when choosing to express obligational strength. Third, this table introduces various uses of *should* in its comparison of obligational strength, but does not explain how they are different; for example, (g) expresses weak obligation, (i) and (k) express advice.

Figure 3. Azar & Hagen's (2006, p. 387) presentation of must.

(a) Poonle need food Doonle L	3 73 1001 1	
<ul><li>(a) People need food. People have to eat food.</li><li>(b) People need food. People must eat food.</li></ul>	the state of the s	
(c) I You She He It We They	Must is followed by the simple form of a verb.  INCORRECT: He must works.  INCORRECT: He must to work.	
(d) You must not be late for work if you wan to keep your job.	must not = Don't do this! You don't have a choice.	
(e) You don't have to go to the movie with u if you don't want to.	don't have to = It's not necessary; you have a choice.	
Compare the following examples. Notice the c	lifference between must and should.	
MUST	SHOULD	
SOMETHING IS VERY IMPORTANT. SOMETHING IS NECESSARY. YOU DO NOT HA A CHOICE.	SOMETHING IS A GOOD IDEA, BUT YOU HAVE A CHOICE.	
(f) I must study tonight. I'm going to take a very important test tomorrow.	(g) I should study tonight. I have some homework to do, but I'm tired. I'll study tomorrow morning. I'm going to go to bee now.	
(h) You must take an English course. You	You should take an English course. It will help you.	
cannot graduate without it.	map Jou.	

Figures 1-3 are from a textbook for novice-level ELLs; in contrast, Azar & Hagen's (2009) *Understanding and Using English Grammar* (UUEG) approaches modality at an intermediate level, see Figure 4. Here we see that UUEG does provide a more in-depth explanation of some of the factors that determine the appropriateness of the three modals presented, *must*, *have to*, and *have got to*. There is a short blurb about *must*'s rare use in conversation at the bottom of the second column, second row. However, overall, *must* is clearly presented as equal to *have to* and the following activities ask students to use these modals interchangeably, thereby invalidating the explanation that *must* is highly infrequent in this context.

Figure 4. UUEG strong deontic modality for intermediate ELLs (Azar & Hagen, 2009, p. 164).

M	ust, Have To	
	All applicants <i>must take</i> an entrance exam.  All applicants <i>have to take</i> an entrance exam.	Must and have to both express necessity. The meaning is the same in (a) and (b): It is necessary for every applicant to take an entrance exam. There is no other choice. The exam is required.
(c)	(c) I'm looking for Sue. I have to talk to her about our lunch date tomorrow. I can't meet her for	In everyday statements of necessity, have to is used more commonly than must.
Ca.	lunch because I have to go to a business meeting at 1:00.	Must is usually stronger than have to and can indicate urgency or stress importance.
(a)	Where's Sue? I must talk to her right away. I have an urgent message for her.	The meaning in (c): I need to do this, and I need to do that.
		The meaning in (d) is stronger: This is very important!
	Because it is a strong word, <i>must</i> (meaning necessity) is relatively rare in conversation. It is usually found in legal or academic writing.	
(e) (f)	I have to ("hafta") be home by eight. He has to ("hasta") go to a meeting tonight.	NOTE: Native speakers often say "hafta" and "hasta," as in (e) and (f).
На	ve Got To	
	I have got to go now. I have a class in ten minutes.	Have got to also expresses the idea of necessity: (g) and (h) have the same meaning.
(h)	I have to go now. I have a class in ten minutes.	Have got to is informal and is used primarily in spoken English.
		Have to is used in both formal and informal English.
(i)	I have got to go ("I've gotta go / I gotta go") now.	The usual pronunciation of <i>got to</i> is "gotta." Sometimes have is dropped in speech: "I gotta do it."
Pas	st Necessity	
	PRESENT OF FUTURE	Had to expresses past necessity.
	I have to / have got to / must study tonight.	In (j): had to = needed to: I needed to study last night.
	I had to study last night.	There is no other past form for must (when it means necessity) or have got to.

Figure 4 is taken from Chapter 9 of UUEG, which covers a variety of modalities. Epistemic modality, described as degrees of certainty by the authors, is covered in Chapter 10 of UUEG. Figure 5 shows the presentation of epistemicity (or certainty). Interesting to note is that *have to* and *should* are not included as options even though this and previous research has shown that they (especially *should*) are used epistemically.

Figure 5. UUEG's presentation of epistemic modals of certainty (Azar & Hagen, 2009, p. 180).

— Why isn't John in class?  100% sure: He is sick.  95% sure: He must be sick.  50% sure or less: He might be sick.  He might be sick.  He could be sick.  NOTE: These percentages are approximate.	Degree of certainty refers to how sure we are — what we think the chances are — that something is true. If we are sure something is true in the present, we don't need to use a modal. For example, if I say, "John is sick," am sure; I am stating a fact that I am sure is true. My degree of certainty is 100%.
Why isn't John in class?  (a) He must be sick. (Usually he is in class every day, but when I saw him last night, he wasn't feeling good.	Must expresses a strong degree of certainty about a present situation, but the degree of certainty is still less than 100%.
So my best guess is that he is sick today. I can't think of another possibility.)	In (a): The speaker is saying, "Probably John is sick. I have evidence to make me believe that he is sick. That is my logical conclusion, but I do not know for certain."
- Why isn't John in class?  (b) He may be sick.  (c) He might be sick.	May, might, and could express a weak degree of certainty.
(d) He could be sick. (I don't really know. He may be at home watching TV. He might be at the library. He could be out of town.)	In (b), (c), and (d): The meanings are all the same. The speaker is saying, "Perhaps, maybe," possibly John is sick. I am only making a guess. I can think of other possibilities."

As a future English language instructor, I know that I will frequently have to work with textbooks that may not adequately contextualize language or represent authentic usage patterns; therefore, incorporating context and authenticity into lesson planning is a necessary part of teaching a language. When introducing the topic of modals, I will discuss how some forms are more common than others and which are the preferred forms. Textbooks are designed to appeal to a mass demographic, so individualizing the lessons to suit the needs of the students is the obligation of the teacher; a teacher's greatest resources in this day and age are the internet and their own creativity. When teaching grammar to ELLs, creating mechanical activities that are contextualized can be done through the use of online corpora. Pulling actual language from corpora and creating activities such as information gap or dialogue completion activities would allow students to practice grammatical forms using real language. When asking students to produce the target forms they have been practicing, the instructor could provide a framework that

will only permit them to use the most common forms, but also allow them to practice using the less frequent forms in their distinct contexts. For example, short writing activities could be designed that would require the student to discuss daily obligations, create a dialogue, give advice, or write rules for incoming international students. For each type of writing activity, the students would only be allowed to use the common forms in the context provided; so a paragraph about daily obligations would use *have to, need to, should,* etc., but never *must.* By using a variety of topics, the students could use the forms they've been practicing in the appropriate contexts. Through explicit and repeated verbal instruction and implementation of contextualized mechanical and production activities, I would teach with the purpose of developing students' sense of natural English usage patterns.

Through recognition and implementation of natural usage patterns, English language educators can augment their teaching. A large scale quantitative study of deontic modality, and epistemic modality by relation, through the use of corpora, in the manner of Tagliamonte & D'Arcy's (2007), would provide a larger database from which to draw conclusive results about how deontic modals are used in American English. Future research rooted in identifying usage patterns is essential to providing English language educators and textbook publishers with up-to-date data on how actual speakers use English, rather than relying on a constructed and idealized version English. Studies applying a restructured approach to teaching modals are also necessary to know if teaching students with real language according to established usage patterns results in an improved grasp of how to use modals successfully and in the manner of a native speaker of English. The results of classroom studies such as that could provide the necessary data to textbook publishers and curriculum developers to place a greater emphasis on the value of real language, rather than idealized language, as the benchmark for valid and effective English

language instruction. Incorporating actual language (language spoken or written by native speakers) to teach ELLs would provide them with a context in which to appropriately use the grammatical forms and vocabulary they are expected to learn. While it will take time for English language textbooks and curriculum designing to catch up with the idea of taking advantage of actual language and usage patterns, teachers, can and should work these concepts into their daily lesson planning as supplemental input for the students.

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