Diana Van Lancker Sidtis* and Rachel Wolf

Pragmatic verbal repetition: review and application of a new method of quantification

Abstract: The use of "pragmatic repetition," the iteration of one's own speech or the speech of a co-participant, while known to occur in conversation, has been overlooked in the language sciences. This study presents a method for establishing incidence, characteristics, and functions of pragmatic repetition during conversational exchanges. The method is applied to three discourse samples: a screenplay, a television reality show, and an unscripted telephone conversation. The analysis characterizes each repetition in terms of localness (immediate, delayed, or distant in the discourse); degree of preservation (identical or altered); source (self or other); the linguistic unit (word, phrase, clause, or sentence); and type of phrase (formulaic or novel). Three functional categories were identified: maintaining conversational form, enhancing content, and fostering social purposes. Results indicated that 22% of the telephone conversation and 19% of the reality show conversations constituted repeated material as compared to 9% in the screenplay. Analysis of characteristics and functions of pragmatic repetition revealed significant differences between samples. Findings from this study verify the newly developed quantification methodology, solidify the role of repetition in the pragmatics of language, and lead to better understanding of normal discourse.

Keywords: repetition, pragmatics, pragmatic repetition, discourse, conversation, formulaic language

1 Prologue

The spark for this research was ignited by a compelling experience with a client in the speech clinic. This young adult carries a diagnosis of autism, but, like

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many such individuals, has few typical autistic characteristics and several non-typical ones. Early on, his penchant for verbal repetition was noted (see Appendix). Once a treatment plan was underway, the range of responses by co-participants to the repetition behavior became intriguing. These responses fell into three categories: pleasant satisfaction over a sense of good rapport; concern that repetition was interfering with communication; and annoyance. In some instances, in an effort to support the talk, the clinician repeated the repeated utterance of the client. The ability of repetition to affect the interaction in these different ways lead to such questions as these: Why was the positive response to repetition in conversational interaction with this client so easily refreshed? Why did the clinicians' responses undergo such swings? How did it happen that the clinician also engaged in repetition? The answer must be that a certain amount of repetition by the co-participant is normal and desirable in conversation, and that at a certain point, it becomes a bit too much, and then, way too much.

At the same time, another conversation highlighted the impact of repetition in normal discourse during an exchange between one of the authors (DS) and a stranger at Broadway and Fifth Avenue in Manhattan, New York (example [1], repeated elements in italics).

(1)　　Conversation in Manhattan, NY

DS:　　　Excuse me. Is this Broadway, or is that *Broadway* over there?
Stranger:　*That's Broadway over there*.
DS:　　　It moved. (smiling)
Stranger:　*It moved*. (smiling)
DS:　　　Thank you.

These observations in disordered and normal speech led us to the scholarly literature, where, in addition to standard overviews of pathological repetition, there was supportive commentary that repetition is prevalent and rife with functionality in normal conversation. However, guidelines about how much verbal repetition normally occurs in given discourse contexts did not emerge, nor were there criteria on how to distinguish normal from abnormal repetition.

This study presents a method whereby verbal repetition phenomena can be reliably identified, measured, and characterized, so that more light might be cast on the quantity and types of repetition in normal and abnormal discourse. The paper begins with a review of repetition studies in normal and disordered speech in several domains of the language sciences. A newly devised method of measurement is applied to three texts of normal discourse and, finally, to an excerpt from the non-normal sample that stimulated the study.

2 Introduction and review

Verbal repetition has been treated with varying interest and from disparate viewpoints across the language sciences. In modern generative linguistics, given its goal of establishing the grammar of a language in its abstract representation, repetition has not been a topic of interest. Sociolinguistic research has provided numerous insights about the various kinds of verbal repetition along with descriptive commentary of their function (Johnstone 2002; Norrick 1987; Tannen 1987b; Wong 2000; Labov 1972). But systematic measures of repetition behaviors across different kinds of texts have not been undertaken. In this article, we use the term "pragmatic repetition," to refer to verbal repetition as it occurs during normal language use, or repetition in the pragmatics of communication. We review other uses of repetition in verbal behavior.

Our goal was to clarify the properties of verbal repetition, targeting words, phrases, clauses, and sentences, as characteristic in ordinary language use. Repetition behaviors in normal language use appear in many forms and serve several functions, some of which have been anecdotally described in the sociological literature. While interest in normal repetition has grown, what remains lacking is an empirical method for reliably establishing quantities, characteristics, and functions of repetition in discourse. Repetition is a universal feature of the language arts (Tannen 1990). The Hilburn cartoon in Figure 1 depicts visual as well as verbal repetition. The cartoon shows repetition of the phrase "All very compelling",[1] which in this context enhances the theme of judging the entries and contributes to the gravity of the occasion by implying hesitancy and thoughtfulness in the judgment process.

While it is observationally the case that repeated verbal phenomena are frequent and natural in talk, it follows that notions of too much or too little repetition, relative to an established normal range in language practice, can be usefully proposed, but until now no quantitative approaches have appeared. Our purpose in this review is to bring together and discuss these studies and to expand the discourse on verbal repetition. A detailed methodology is offered as a technique for determining incidence and functions of repetition in discourse. Using this method, results from our empirical studies of verbal repetition are presented. It is believed that an understanding of verbal repetition will benefit descriptions of pragmatics in human communication. A major use of repetition

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1 Note also the presence of repetition in this cartoon, as in much of art, music, and literature, occurring as a traditional interplay between theme and variation. This review is not able to include the ubiquitous presence of wholly and partially repeated elements throughout human culture.
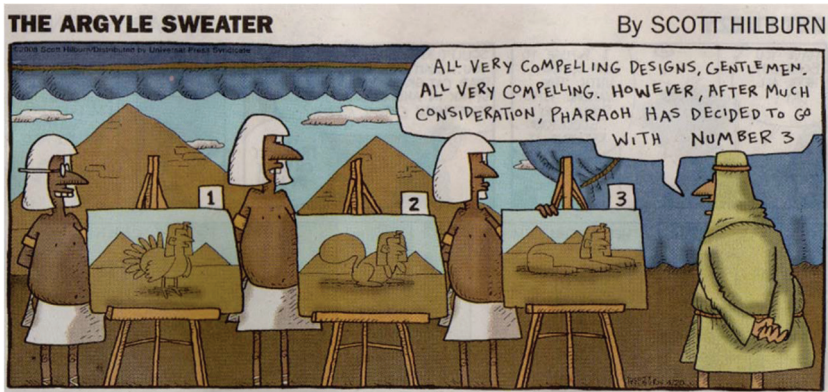
Figure 1: Argyle Sweater cartoon. Repetition of the phrase "All very compelling" in this context enhances content, contributing to the gravity of the occasion, implying hesitancy and thoughtfulness in the judgment process. The verbal repetition mirrors the visual replication.
ARGYLE SWEATER © Scott Hilburn. Used by permission of Universal Uclick. All rights reserved.

is learning new information as a component of first and second language learning and classroom learning. It is a common practice to repeat when trying to memorize or rehearse new material. Rote repetition is not considered here.

2.1 Background on language use and discourse

Pragmatics, the study of the social use of language, has its focus on discourse, which can be defined as units of language greater than a single sentence. In order for discourse to be successful, participants must be aware of the general topic, the purpose of the exchange, the extent and limits of shared knowledge, cultural rules, and means of repairing communicative breakdowns (Myers 1999; Fasold 1990). Acknowledgement of repetitiveness throughout language use has been described (Cook 1994; Labov 1972; Ochs 1979; Stivers 2004), including self-repair (Curl 2005; Rieger 2003; Schegloff 1997) and reported speech (Koven 2001; Kuo 2001).

Examination of conversation reveals that everyday speech is comprised not only of novel expressions, but also of utterances that have been produced in prior instances or contexts. People repeat themselves and others during talk a great deal. Tannen identifies repetition of words, sentences, and patterning as important for "interpersonal involvement" (Tannen 1990: 15). According to Tannen (1989, 2007), it is the interplay between novel and repeated utterances that give language creativity and meaning and the more intimate the conversation, the

more repetitive it becomes. For speech scientists, verbal repetition theoretically provides a measurable strategy in this process of co-participation.

A normal range of repetition is likely to exist depending on factors such as familiarity between speakers, setting, generational concordance, and conversational topic. Thus, familiar individuals, who at a minimum share cultural similarities, may "share knowledge of communicative competence which allows them to anticipate formulae or structures that are used repeatedly in the speech community" (Brody 1994: 4). Instances of deviation from normal repetition behavior may appear in second language speakers, and persons with cognitive dysfunction or neurological impairment. Does pragmatic repetition, alongside imitation, appear in child language? How do second language speakers utilize repetition? Do languages differ in repetition practices? It is these and related questions that were sought for examination, if only briefly, in this review.

2.2 Repetition studies in neurological populations

Abnormal repetition has been described in a variety of neurological deficits, with forms and functions varying greatly with underlying pathology (Ulatowska et al. 2000). The most frequently acknowledged forms of pathological repetition include perseveration (pathological, noncommunicative immediate or delayed repetition of a previous verbal utterance), echolalia (pathological and noncommunicative, often exact, repetition of verbal material spoken by another person in a conversation), and neurogenic stuttering. Sociolinguistic aspects of verbal repetition have been described for Alzheimer's (Blonder et al. 1994; Guendouzi 2006; Hamilton 1994; Ramanathan 1997) and autistic speech (Carey 2001) but explanation of its functions are few (Dobbinson et al. 2003) and adequate comparisons to normal pragmatic repetition are not usually forthcoming. Exceptions include a study comparing rote and pragmatic repetition in a subject with conduction aphasia, where a difference in ability was found. The patient, who, by diagnostic criteria, suffered a reduced ability to repeat on command, was observed to successfully use repetition in conversation (Oelschlager and Damico 1998). Another comes from observations on the narratives of African American individuals with mild aphasia who maintained ethnic repetitions, including repetition for thematic emphasis and semantic effect (Ulatowska et al. 2000). Recent studies in our laboratory of persons with aphasia following left hemisphere damage suggest an enhanced presence of repetition in their speech, possibly arising from preserved pragmatic function associated with intact right hemisphere functioning; these studies are reported in a separate communication (Wolf et al. 2014).

2.3 "Imitation" in language acquisition

In the language acquisition literature, repetition is referred to as imitation. For example, children are seen to imitate an adult model when they do not have a certain competence on their own (Snow 1978; Ely and McCabe 1993; Ramer 1976; Ochs 1975; Speidel and Nelson 1989; Whitehurst and Vasta 1975; Rees 1975). Even in prelinguistic children, imitation has been described (Fontaine 1984; Heimann 1989; Locke 1995; Marcus 2004; Mazur and Eichorst 2002; Meltzoff and Moore 1977; Reissland 1988). However, Bloom et al. (1974) found that children vary considerably in how much they use repetition in language learning. Further, pragmatic repetition has been observed in child speech. Casby (1986: 139) found an important communicative function of repetition in children to be "participation in a dialogue." Our study is focused on adult language samples, but the principles derived from this study have merit for developmental studies in children.

2.4 Formulaic language: a unique role in repetition

Recent studies highlight the prevalence and importance of formulaic language in verbal communication (Wray 2002; Van Lancker Sidtis 2004; Van Lancker Sidtis 2008, Van Lancker Sidtis 2011a; Van Lancker Sidtis 2011b, Van Lancker Sidtis 2012a; Van Lancker Sidtis 2012b). Formulaic expressions, fixed, unitary expressions, which are known and recognized by native speakers as "familiar," include idioms, proverbs, speech formulas (greetings and expletives), and discourse markers (*well, so, like*). Use of formulaic expressions forms an essential part of linguistic competence constituting a native speaker of a language (Fillmore 1979; Pawley 1985). Examination of spoken and written texts indicates that a considerable portion of discourse consists of such expressions (Moon 1988; Perkins 1999; Van Lancker Sidtis and Rallon 2004; Sidtis et al. 2009). Many such expressions are repeated in specified patterns during conversational exchanges. Key examples of connectedness between formulaic expressions and repetition appear in discourse markers (Blyth et al. 1990; Romaine and Lange 1991; Tagliamonte and Hudson 1999; Schiffrin 1987; Underhill 1988). With intimate or personal relationships, "idiomatic communication" increases as relationships intensify and formulaic routines are increasingly shared (Bell and Healey 1992: 307).

    Formulaic language has a unique relationship to repetition. Conversational speech formulas, slang, idioms, expletives, proverbs, and other conventionalized expressions are maintained in the repertory from generation to generation in part through repetition processes. An intimate connection between formulaic

expressions and repetition has been observed (Tannen 1987b, Tannen 1989; Tannen 2007). Tannen (1987a) has proposed that repetition in conversation establishes a sort of local formulaicity, in that expressions that are repeated become temporarily familiar, in the way that formulaic expressions are familiar. Most verbal discourse is comprised of intricate combinations of novel and formulaic language and both kinds of utterances figure importantly in repetition behaviors. One goal in this study is to quantify and precisely describe the relative roles of formulaic and novel language in verbal repetition.

2.5 Second language speakers and cross-linguistic studies

Wong (2000) reported that non-native speakers did not use repetition as a reformulation strategy, and were less successful in using the repetition of words, phrases, or sentences to maintain cohesion during discourse. Similarities as well as differences can be expected in pragmatic repetition practices across different languages and different language families (Johnstone 1994; Tannen and Oztek 1981). These differences can occur in both form and function of repetitions. A cross-cultural study of repetition (Murata 1995) found similar functions for repetition in speakers of British English and Japanese. Brody (1994) examined the use of repetition in the discourse of Tojolab'al Mayan conversations and found use in ritualistic or rhetorical narratives as well as in conversational interactions. Uniquely, in Tojolab'al conversations, repetition is often used in a purposeful and conscientious manner where the participants have a shared knowledge of function. This paper aims to provide a reliable method for assessing form and function of repetition that can be applied across speakers and across languages. The method described here can be utilized in comparing second language discourse and texts from other languages.

2.6 Definition of a repetition

There are several approaches in the literature regarding how to operationally define an instance of repetition (Ochs and Schieffelin 1983). Repetition has been described as patterning of a previous utterance (Johnstone 1994: 3) and as "echoing of prior utterances" (Tannen 1987a: 216). Later, Tannen (2007: 9) described repetition as the recurrence of words and collocations of words. The method developed to examine repetition in texts in this exploratory study utilizes operational definitions of repetition, its characteristics, and its functions in natural language, using the morpheme as elemental unit of measure.

3 Repeated elements: the method

3.1 Morpheme as elemental unit; dependent variables

For the most reliable measurement within these units, the morpheme was utilized; the measure is percentage of morphemes repeated. A morpheme is a minimal unit of meaning in a language. Examples are the plural morpheme (*s, ses, zis*; and a set of irregular forms). In example (2) (below), the negative morpheme *n't* is repeated, changing the shape of the words (*will-wo*) to which it is affixed. To be counted as a repetition, repetitions at the phrase and sentence levels include at least one free morpheme that is an open-class word (e.g., noun, verb, adjective, adverb) and at least 50% of the morphemic content must be recurrent.

(2)   Identifying repetition: percentages in a discourse unit (repetitions in italics)

	First utterance	Repeat occurrence	Percentage
1	"*exactly what I want*"	"*exactly what I want*"	100%
2	"*you're* not *going to*"	"*you're going to*"	83%
3	"*It's* just *crazy*"	"*It's crazy*"	75%
4	"*Dad* doesn*'t* want *black*"	"*Dad* won*'t* have *black*"	60%
5	"*weight lifting*"	"*lifting* the *weight*s"	60%
6	"*Charlie* and I are *going to join*"	"*Charlie*'s *going to join*?"	63%
7	"Are *you talking to* me?"	"I'm *talking to you*."	50%
8	"you *think*"	"I *think*"	50%

Five formal variables were selected as promising for a quantitative study of pragmatic repetition in discourse: grammatical unit, localness, preservation, self or other, and phrase type (see Table 1).

Grammatical unit was chosen because repeated elements can occur at lexical, phrasal, clausal, and sentential levels (Frédéric 1985), and these can be expected to vary in impact and function of the repetition. Speakers and texts differ in the grammatical units selected for repetition. Examples are easy to find: The single word "Nevermore" becomes increasing intense due to repetition in the poem "The Raven" by Edgar Allen Poe, as does the noun phrase "honorable man" in Antony's funeral oration in Shakespeare's *Julius Caesar*, and the complete sentence "I have a dream" in the speeches of Martin Luther King.

Secondly, a factor of interest is localness, or proximity of occurrence. If a repetition occurs immediately or on the next turn, it performs differently from those later in the discourse. Distant repetitions may be seen to increase with familiarity between subjects. Our criteria state that delayed repetition occurs 2–5 turns from the original production, and distant repetitions occur after five turns.

Table 1: Dependent variables in repetition analysis.

Localness
  Immediate (next turn)
  Delayed (between 2 and 5 turns)
  Distant (over 5 turns)

Preservation
  Identical
  Altered

Source
  Self
  Other

Unit
  Word
  Phrase
  Clause
  Sentence

Phrase type
  Novel
  Formulaic

Function
  Form

Content
  Social

The preservation variable provides a vehicle to characterize a repetition, a topic of some controversy, by providing precise criteria to describe the extent to which repetitions are identical or altered. Previous research has made a distinction between exact repetition of an initial utterance and paraphrasing of an initial utterance, the latter being referred to as a "redraft" (Bean and Patthey-Chavez 1994: 218) or "reformulation" (Johnstone 1994: 7). Reformulations have been described as a "middle ground between an exact repetition and an entirely new utterance" (Merritt 1994: 30). In the present formulation, an utterance is judged as an altered repetition when 50% or more of the morphemes have been altered. The initial production is considered the prototype and subsequent productions are considered variants of that prototype (see example [3]).

(3)   Identical and altered repetition

Speaker A: *I'm not staying here*   (prototype)
A: *I'm not staying here*   (identical variant)
A: *I'm not* gonna *stay*   (altered variant)

The fourth variable utilized in this study is whether the repetition is of self or other (see example [4]).

(4)   Repetition of self and other

Speaker A: *lose weight*   (prototype)
A: won't *lose weight*   (self)
A: You *won't lose*   (self)
Speaker B: *You* might *lose*   (other)

Depending on analytic purpose, distinctive psychological and neuropsychological implications may arise from the observation that repetitions are predominantly of self or of the interlocutor.

Finally, given the importance of formulaic expressions in discourse, repetitions were classified as either representing a novel or formulaic expression based on criteria described in previous literature. Formulaic expressions fall into different categories based on criteria of form and function (Van Lancker Sidtis 2008; Van Lancker Sidtis and Rallon 2004; Wray 2002). (Consideration of categories of formulaic expressions as they relate to repetition is beyond the scope and purpose of this study.)

In summary, repetitions were classified using the following formal, dependent variables: (a) unit of speech (word, phrase, clause, or sentence); (b) localness: immediate (next turn by either self or other), delayed (between 2 and 5 turns), or distant (over 5 turns); (c) preservation: identical versus altered; (d) self versus other; and (e) phrase type: formulaic versus novel. Functions were also examined (see Table 1).

3.2 Identifying functional categories

Several researchers have described the functions of repetition in conversational speech (Johnstone 1994; Norrick 1987; Tannen 1987a, Tannen 1989). Of the many functions of pragmatic repetition, there are at least three categories that are important and eminently identifiable in samples of talk. These are maintaining form of talk, enhancing content of talk, and socialization.

Maintenance of conversational form is important to the flow of discourse and is the first of three kinds of function treated in this analysis (Ochs et al. 1996). Repetition provides structure to the form of talk, contributing to fluency and efficacy. Resumption or "backchanneling" is a well-researched type of repetition behavior, understood to signal the conversation is being followed, understood, or agreed with (Johnstone 2002), enhancing efficacy of talk. Similarly, there may be instances in a conversation where one speaker will

insert a comment and then a repetition may be used subsequently to resume a prior thought. Repetitions or "recycled words" (e.g., *as for working*; *with the bad weather*) may be used in a similar manner to conjunctions in that they allow for cohesion between turns during everyday conversations (Ochs et al. 1996; Wong 2000). As contributory to the flow of discourse, repetition can also be used to repair erred productions or as a means of self-correction, and to reduce hesitation or pausing during talk. Use of repetition for the purpose of filling pauses has been referred to as disfluencies, which have been described as "automatic reactions to problems in speech planning" (Oomen and Postma 2001: 1002). A classic example of the repeated use of *yeah* to maintain the conversational turn structure is shown in example (5) taken from CALLHOME Transcripts.

(5)   Repetition of the word "yeah"; function of maintaining the flow of talk

Speaker B: oh, I forgot about him.
Speaker A: *yeah*.
A: That's that was like the last thing she said to me before I left {laugh}
B: oh.
A: was that we could never live together because of him.
A: Which is fine by me.
B: *yeah*.
A: Because you know when he comes he comes for like three weeks.
B: *yeah*.
A: And I would just go insane.
B: *yeah*.

The second function of pragmatic repetition is enhancing cohesion of theme or language content (Norrick 1987). Repetition can be used to emphasize important points. In this capacity, repetition may occur at the word level through repetition of low frequency words that are related to a particular topic, a practice seen in rhetorical styles. In storytelling, theme and content is typically controlled by repeating selected words and phrases (Casby 1986). In example (1), the stranger produces an exact repetition in saying "That's Broadway over there." This verifies the theme. Another example of enhancing content of talk, as seen in example (6), is taken from the CALLHOME telephone conversations. Two themes, lifting weights and losing weight, are enhanced through near exact repetition.

(6)   Repetition enhancing content of talk

Speaker A: So when I'm still riding the bike she's completely finished her *weight lifting* routine.
A: And that *lifting the weights* won't *lose weight*.

Speaker B: No, I mean you might *lose* some, but that's only when yo-. For a woman who is *lifting* not that much I don't think

B: You do burn a lot of calories an hour though, *lifting weights*.

A: n-, and also *lifting weights* at Bally's means you're standing on line for as much time as you're actually *lifting*.

Thirdly, repetition provides important social functions including mutual affirmation, endorsement of selected talk, humor, bonding, and other expressive effects. Repetition of words and phrases between interlocutors serves a function of endorsing and validating each other. Select repetition of phrases by both speakers signals knowledge and acceptance of a verbal repertoire as it emerges in a given conversation. Persons interactively repeating utterances in a conversation can said to be attributing mental states, in the sense of "knowing" that a repeated phrase will be recognized as such by the co-participant, according to notions of the theory of mind (Goldman 2005) as in example (1) above, in the stranger's repetition of "It moved." The orientation of the avenue is unusual and so this comment has metaphorical meaning in the conversation, but its main role is to provide humor and a moment of bonding between strangers. Repetition has a frequent occurrence in conversational joking (Norrick 1994), sarcasm, mocking, teasing, and word play, all of which impact on rapport between speakers. Repetition for the conveyance of a humorous element is given in example (7), taken from the screenplay *Some Like it Hot*. Here the repetition of "coffee" and "I want a cup of coffee" (as well as "raid") builds in absurdity throughout the exchange.

(7)   Example of social function of repetition, in this case humor

Waiter: What'll it be, *Sir*?

Mulligan: Booze.

Waiter: *Sorry Sir*, we only serve *coffee*.

Mulligan: *Coffee*?

Waiter: Scotch *coffee*, Canadian *coffee*, sour mash *coffee*.

Mulligan: Make it *Scotch*, A demitasse. With a little soda on the side.

Mulligan: Haven't you got another pew–not so close to the band? How about that one?

Waiter: *Sorry Sir*. That's reserved for members of the immediate family.

Drunk: Hey- I want another cup of coffee. *I want another cup of coffee*.

Mulligan: Better bring the check now in case the joint gets raided.

Waiter: Who is going to *raid* a funeral?

Mulligan: Some people got no respect for the dead.

…

Mulligan:	All right everybody, this is a *raid*. I'm a federal agent and you're all under arrest.
Drunk:	*I want another cup of coffee.*

3.3 Method: criteria for establishing repetition

3.3.1 Discourse samples

Three discourse samples were analyzed: a screenplay, a telephone conversation, and a television reality show. All three samples consisted of 10–15 minutes of verbal exchange. Approximately 15 minutes of conversational speech was selected from the screenplay *Some Like it Hot* (Wilder and Diamond 1990 [1959]). The samples consisted of eight distinct conversations occurring between two and five participants. There were a total of 224 conversational turns comprised of 2,034 words. The screenplay *Some Like it Hot* was previously analyzed by Van Lancker Sidtis and Rallon (2004) to identify incidence of formulaic expressions in naturalistic discourse. The movie representing the screenplay has maintained its comedic allure and its scripted material imitates natural conversation (Tannen 1987b, Tannen 1989; Tannen 1990).

The telephone conversation lasted 13 minutes and is comprised of 304 conversational turns with a total word count of 2,858 words. This conversation was selected from a large corpus purchased by the New York University Department of Speech-Language Pathology for research (CALLHOME 2000). The telephone conversation transcripts were represented by the provider as actual, recorded, and unscripted telephone conversations between mutually acquainted speakers without reported pathology using non-southern American English. The specific telephone conversation involved two female speakers who were familiar with each other.

The reality show samples were conversational exchanges from two episodes of the show *Laguna Beach* ("A Black & White Affair" and "Bonfire") directed by G. Plamondon (2004a, 2004b) (see Table 2). There were 12 conversational exchanges

Table 2: Sample size in three discourse samples.

Sample	Number of words	Number of morphemes
1. Screenplay (SLIH)	2,034	2,337
2. Reality show (RS)	2,092	2,391
3. Telephone conversation (TC)	1,858	2,076

between different speakers, which were comprised of 263 conversational turns lasting a total of ten minutes. Eight of the exchanges were between two speakers and four of the exchanges were between three speakers with a total word count of 2,410 words. Although these shows may be edited, the content of the conversation was judged to be actual. The reality show *Laguna Beach* also provides insight into distinct patterns present in adolescent conversational speech. It has been noted that adolescents often form their own dialect, called teenlects, which enhance group identity and synchrony within a conversation (Marsh 1997).

4 Results

Repeated morphemes for the three texts were 205/2,035 for the screenplay, *Some Like it Hot*, 445/2,858 for the reality show, and 341/2,410 for the telephone conversation. Figure 2 displays the proportion of repeated morphemes out of total morphemes for the three texts.
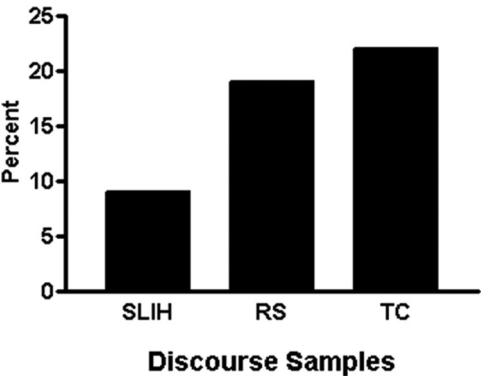

Figure 2: Percentage of repeated morphemes in three discourse samples: the screenplay, *Some Like it Hot* (SLIH), the reality show (RS), and the telephone conversation (TC).

The smallest proportion of repetition occurred in the screenplay sample (9%) compared to the reality show (19%) and the telephone conversation samples (22%). Chi-square statistics were used to compare percentage of repetition across groups. Nonparametric measures were used since assumptions are being made using small samples which were not randomly selected. There were no group differences in the proportion of repeated morphemes between samples, x^2 (df $=2$, $N=44$) $=3.59$, $p=0.166$.

Descriptive information was also obtained for formal factors related to repetition: unit, localness, preservation, source, and formulaicity (see Table 1).

For unit, repetition most frequently occurred at the word or phrase level. In the screenplay sample 60% of repetitions occurred in words. According to chi-square data, x^2 (df $=2$, $N=126)=11.62$, $p=0.003$, the other samples had significantly fewer word repetitions, with 34% of the reality show sample and 32% of the telephone conversation samples comprised of word repetitions. Significant differences were also noted comparing the proportion of phrase repetitions between groups, x^2 (df $=2$, $N=118$), 6.83, $p=0.033$. Proportion of phrase repetition was higher for the reality show sample (45%) and the telephone conversation sample (47%) and lower for the screenplay sample (26%). Lower numbers of repetitions occurred at the clause and sentence levels across groups. Clause repetition occurred most frequently in the telephone conversation sample (9%), with similar proportions to the reality show sample (8%). Clause repetition occurred least frequently in the screenplay sample (4%). Clause and sentence repetitions were not significantly different.

Data on localness of repetition revealed differences between groups for the proportion of immediate, x^2 (df $=2$, $N=118)=23.61$, $p=0.000$, and distant repetitions, x^2 (df $=2$, $N=96)=13.00$, $p=0.002$, but not for delayed repetitions, x^2 (df $=2$, $N=86)=3.65$, $p=0.161$. Immediate repetitions occurred frequently in the reality show sample (56%) and screenplay sample (47%), but less frequently in the telephone conversation sample (15%). However, distant repetitions occurred frequently in the telephone conversation sample (48%) and to a lesser extent in the screenplay sample (28%) and reality show sample (20%) (see Figure 3).
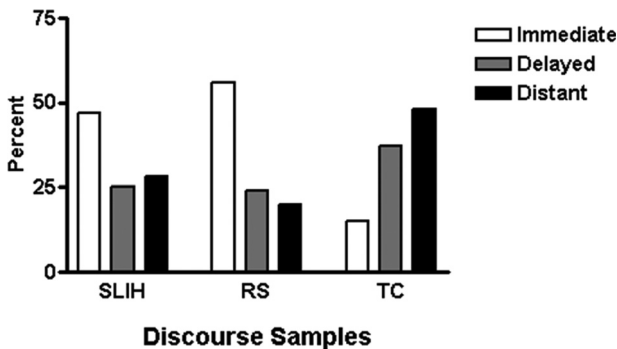

Figure 3: Measures of localness: percentages of repetitions that were immediate, delayed, or distant in three discourse samples: the screenplay, *Some Like it Hot* (SLIH), the reality show (RS), and the telephone conversation (TC).

Preservation of the initially produced form (prototype) was compared between groups. Variants of the initial prototype were most frequently identical, with the telephone conversation sample having the most identical (81%) and the

screenplay and reality show samples having slightly lower proportions of identical productions (63% and 60%, respectively). There was no difference between groups with regard to preservation, x^2 (df = 2, N = 204) = 3.79, p = 0.150.

Results for the source of the repetition (whether repetitions were more likely to be of self or another speaker) did not yield significant contrasts.

With regard to proportion of repetitions identified as formulaic, there was a trend toward differences between groups, x^2 (df = 2, N = 187) = 5.91, p = 0.052. Out of the total repeated morphemes, the most formulaic repetitions were found in the telephone conversation sample (75%). Formulaic repetitions were also demonstrated in high proportion in the reality show sample (64%) and to a lesser extent in the screenplay sample (48%).

4.1 Results for functional categories

Repetitions were categorized based on one of three discourse functions: maintain form, enhance content, or foster social aspects of conversation. Form repetitions did not occur in the screenplay sample (0%) most likely due to literary artifice and editing for accuracy and maintaining flow of speech. Form repetitions occurred most frequently in the telephone conversation sample (40%) and to a lesser extent in the reality show sample (14%), yielding a significant difference between groups, x^2 (df = 2, N = 55) = 43.02, p = 0.000.

A significant difference was also noted between groups regarding the proportion of repetitions used to enhance content of talk, x^2 (df = 2, N = 117) = 17.59, p = 0.000. Content repetitions occurred most frequently in the screenplay sample (58%). They were less frequent in the reality show sample (38%) and least frequent in the telephone conversation sample (21%). Significant differences between groups were not demonstrated for use of repetition for the purpose of socialization, x^2 (df = 2, N = 139) = 0.619, p = 0.734. Proportions were similar across groups regarding repetition for socialization in the screenplay (42%), telephone conversation (45%), and reality show (49%) samples (see Figure 4).

5 Discussion

In this paper, the intent was to position normal verbal repetition in the larger context of sociolinguistics, second and child language acquisition, and communicative disorders by providing a brief review of relevant perspectives arising from these disciplines. The term "pragmatic repetition" was coined to distinguish repetition used for pragmatic purpose from repetition featured in classification of aphasia, learning new material, and childhood imitation. Motivated by
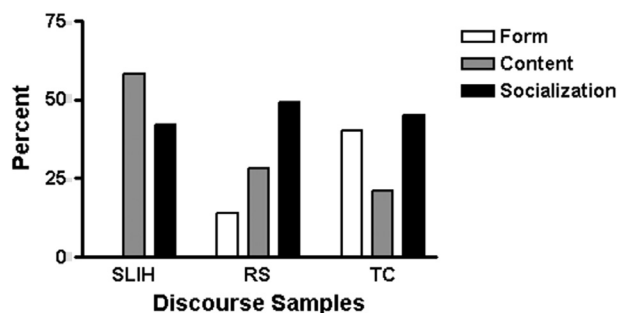
Figure 4: Functions of repetition by discourse sample: the screenplay, *Some Like it Hot* (SLIH), the reality show (RS), and the telephone conversation (TC).

a desire to seek benchmarks for normal and abnormal repetition, a method was designed to quantify repetition in verbal discourse using the morpheme as elemental unit of measurement.

On applying this method to three different discourse texts, it was seen that repeated morphemes made up an average of 15% of total morphemes with a range between 9% and 19%. This finding reveals the actual presence of repetition in naturalistic (or simulated naturalistic) speech, and implies that although human language has the potential to be infinitely creative, in actual practice, it also contains a considerable amount of material which has been previously uttered.

Across the three texts, approximately 68% of the total repetitions were identical to the original utterance, with the highest number, 81%, appearing in the nonscripted telephone conversation. Further, it was seen that large proportions of the repetitions were formulaic expressions: in the telephone conversation transcript, 78% of the repetitions were of formulaic expressions. Together with the fact that formulaic language itself has been estimated to make up about 25% of discourse, the position for all original utterances in naturalistic speech continues to erode (Pinker 1995; Van Lancker Sidtis 2004). The substantial presence of formulaic speech (averaging 25%) as well as repetition of both novel and formulaic utterances (about 17.5% for two spoken texts) add up to a considerable proportion of discourse which is not newly created in these samples.

Analysis of differences between the three discourse samples studied here revealed similarities and differences. The screenplay sample had the smallest percentage of repetition. This lower incidence is likely due to the scripted nature of the text, lacking the spontaneity found in actual conversational speech. Differences were also found for the repetition variables representing form and function. For the screenplay and the reality show samples, repetitions were most

likely to occur immediately following the target word or phrase. In the telephone conversation sample, repetitions were least often immediate and most often distant. The telephone conversation sample confirms the importance of distant repetitions. The distant repetitions appeared to perform social functions, including bonding between subjects and mutual endorsement of the selected verbal repertory. Examination of data on preservation of repetition form revealed high proportions of identical repetitions. Repetition of clauses and sentences occurred in similar proportions across samples. Differences were noted, however, in the proportion of word and phrase repetitions between groups. Once again, the two unscripted samples (reality show and telephone conversation) presented with similarities distinguishing them from the scripted sample (screenplay). Phrase repetitions were used most frequently in the unscripted samples, with word repetitions close behind. In the scripted sample, most repetitions occurred at the word level. These results provide useful information for identifying characteristics which distinguish scripted dialog from actual conversational discourse.

A higher percentage of self-repetition was seen in the telephone conversation sample, involving only two speakers, whereas the reality show and screenplay exhibited more repetition of other. For example, in the telephone conversation sample, stereotypical utterances were repetitively used by one speaker, possibly to perform the social function of asserting self in the conversation. In contrast, speakers also repeated expressions initiated by other speakers, likely performing the function of bonding, in the sense of acknowledging the choice of vocabulary of the other speaker. In this sample, each speaker repeated expressions used by the other. This type of repetition may be said to convey endorsement of the choice of words of each speaker, signaling mutual affirmation. This process can also be seen as attributing mental states, as in the theory of mind in human interaction. Example (8) provides instances of this phenomenon from the telephone conversation sample. Repetitions were both distant and delayed and constituted formulaic expressions (*pretty crazy, it's crazy*).

(8)   Social function of repetition using formulaic expressions

Speaker A: the weeknights is *pretty crazy*.
Speaker B: um and like like fruit and oh my god *it's just crazy*
B: *It's crazy* how much he eats.
A: That's *pretty crazy*.
B: Now wait. What, got so much furniture in this tiny apartment. *It's crazy*.

In the screenplay, repetitions were used to enhance form of talk significantly less than the other two samples. Form repetitions were used most frequently in the unedited and unscripted telephone conversation sample. Repetitions to enhance

the content of speech were least likely to occur in the telephone conversation. This emphasizes the casual nature of the conversation and reinforces the notion that during casual conversation, informational content may be less important than the social aspects of the interaction. In contrast, in the screenplay and reality show samples, content repetitions were more prevalent. This is likely related to storylines that need to be conveyed for entertainment purposes. Repetitions to enhance content of talk also included repetitions for emphasis, agreement, and echo questions as described by Parker and Pickeral (1985).

All three samples used high proportions of repetition for the function of socialization and percentages were similar across groups. In the reality show and telephone conversation samples, repetition for socialization was used more frequently than for form or content. The screenplay also used a high proportion of repetition for socialization. This was largely due to the comedic nature of the script. Several of the repetitions fell into the subcategory of humor, while the socialization repetitions in the reality show and telephone conversation samples fell mainly into the subcategories of bonding and assertion of self as well as acknowledgment of the other.

A trend toward differences was noted in the proportion of repetitions categorized as formulaic. In the telephone conversation sample 75% of repetitions were formulaic, in the reality show sample 64% of repetitions were formulaic, and in the screenplay sample, 48% of repetitions were formulaic. It is likely that the spontaneous, informal nature of the telephone conversation sample increased the use of stereotypical expressions.

The findings of this exploratory study have helped establish repetition as a vital and measurable pragmatic component of language. The similarities and differences between samples allow for a better understanding of pragmatic repetition during conversational discourse. Incidence of repetition was similar across samples. Similarities between samples were most evident when comparing the reality show and telephone conversation which were unscripted. Many of the differences between samples arise from the status of *Some Like It Hot* as a screenplay. This work is in agreement with previous studies (Tannen 1982, Tannen 1989) showing how scripted text is uniquely different from actual spontaneous productions. Overall, the findings of this study provide a substantive foundation for future quantitative research on pragmatic repetition.

6 Postlogue

This research responded to a need to establish normal incidence and functionality of verbal repetition. The need arose from a relationship of a speech-language pathologist with a client who conversed amicably and cooperatively

with elementary cognitive competence, but who repeated his own and the clinician's utterances to his detriment. Repetition in client's speech sample given in Appendix I was easily quantified: of 117 morphemes in the excerpted sample, 84 were repeated, yielding a proportion of 72% repetition, well above the values (averaging 15%) reported for the three normal samples used in this analysis. The goal of the methodology described here is to allow language scientists to evaluate repetition behaviors in discourse of all kinds: normal (extending to various styles of spoken and written text), developmentally anomalous, and neurogenically disordered, and to identify key characteristics and functions of this important component of human communication.

Appendix

Transcript from adult client with diagnosis of autism in conversation with a clinician. Repetitions are in italics.

Clinician:	So (X), tell me what you've been doing?
Client:	*What I've been doing*
Client:	*What I've been doing*
Client:	I'll try. *What I've been doing*
Clinician:	*What have you been doing?*
Client:	*What I have been doing*
Client:	I stay home.
Clinician:	Yeah?
Client:	*Yeah I stay home.*
Client:	*I stay home* and I eat breakfast.
Client:	*I eat breakfast.*
Clinician:	mhumh
Client:	And *and* I went to (XX) YMCA.
Clinician:	*(XX) YMCA?*
Client:	*(XX) YMCA.*
Clinician:	Oh
Client:	*(XX) YMCA*
Clinician:	Where is that?
Client:	*Where is that*...in Manhattan.
Client:	*In Manhattan.*
Clinician:	Yeah?
Client:	*Yeah.*
Clinician:	*Yeah* and what did you do there?
Client:	*Yeah and what did I do there.*
Client:	There I was folding towels and I put them in the cart.

Clinician:	You did what?
Client:	*I was folding towels.*
Clinician:	*Folding towels.*
Client:	*Folding towels.*
Client:	*Folding towels.*
Client:	*I put them in the cart.*
Clinician:	*Put them in the cart.*
Client:	*In the cart.*
Clinician:	How long did you do that?
Client:	For 5 minutes.
Clinician:	mhumh
Client:	*For 5 minutes.*
Clinician:	That's not very long.
Client:	*That's not very long.*

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