



Filled Pauses in Writing: What can they Teach us about Speech?

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Abstract

This exploratory study looks at filled pauses (*uh*, *um*) used in blog posts in order to see what light they may shed on pauses in spontaneous speech. Results show that writers use clause-boundary filled pauses in a relatively non-selective manner but use clause-internal filled pauses to highlight low frequency content words. When this written sample is compared with a spoken sample drawn from the Switchboard corpus, the results suggest a hybrid model of filled pause use in speech combining a meaningful, word-like use of filled pauses with an automatic use driven by cognitive processes.

Background

Filled Pause Research

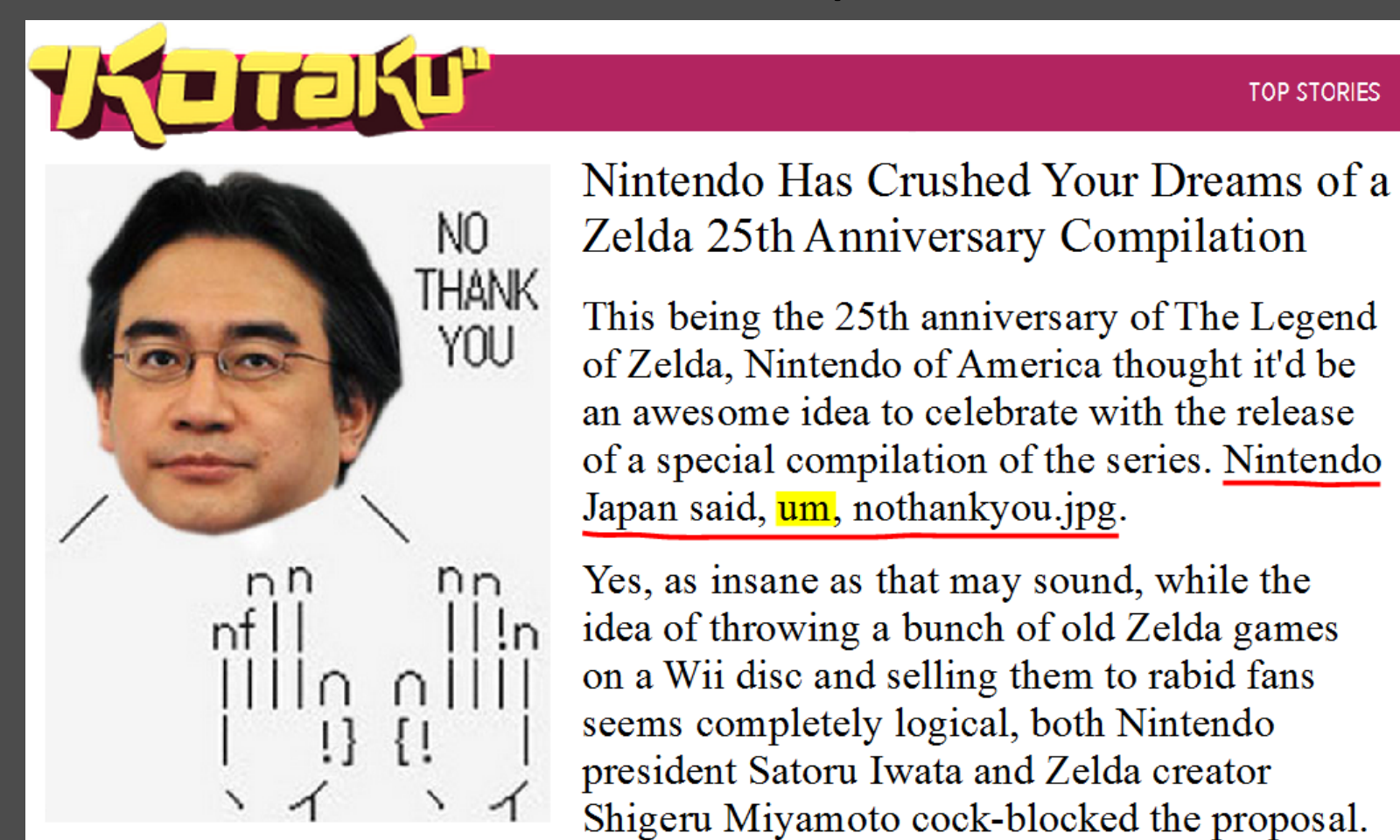
- FPs occur more commonly at clause boundaries than clause-internally (Rose 1998, Swerts 1998).
- FPs occur more commonly before content words than before function words (Maclay and Osgood 1959)
- FPs occur more commonly before low frequency words and before words with low contextual probability (Beattie and Butterworth 1979).
- Open FPs (*uh*) are more likely before shorter silent pauses while closed FPs (*um*) are more likely before longer silent pauses (Clark and Fox Tree 2002).

Based on such results, many researchers have concluded that speakers use FPs during lexical access when making choices among several different alternatives (Schachter et al 1991) or to warn the listener of impending delay (Clark and Fox Tree 2002).

A continuing debate in the field is the lexical status of FPs. Some have argued that they are words (Clark and Fox Tree 2002, Kjellmer 2003) while others have argued against this (Corley and Stewart 2008).

FPs in Blog Posts

Blog writing often emulates speech in its style and linguistic choice. Many blog writers use FPs in their posts. The choice to use these must be intentional. The present research builds on the assumption that consistent patterns of FP use show conventionalized usage that writers attribute to FPs. Thus, we may be able to draw conclusions about the intended use of FPs in speech.



http://kotaku.com/5812859/nintendo-has-crushed-your-dreams-of-a-zelda-25th-anniversary-compilation

Corpus Investigation

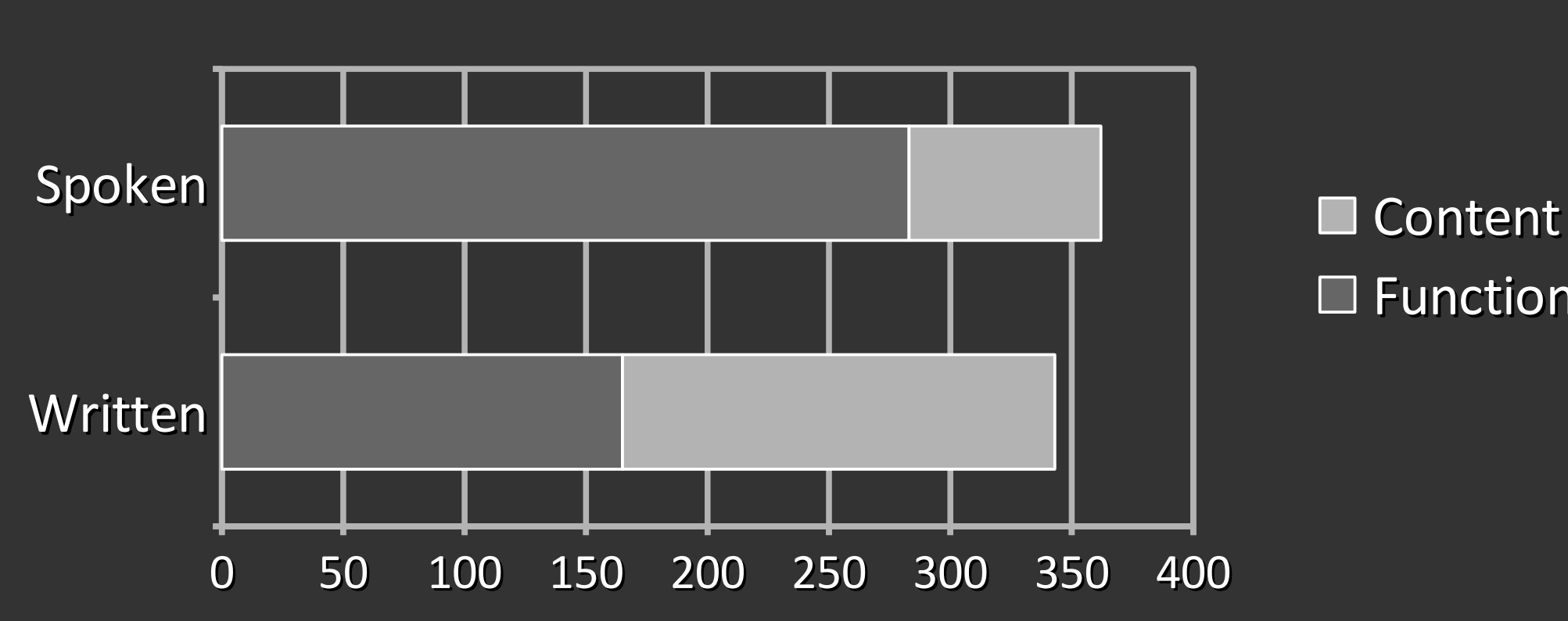
Location	Next Word Type	Spoken Corpus Switchboard Corpus transcripts from Open ANC (American National Corpus) Random sample of utterances with FPs	Written Corpus Top 100 blogs (Wikio/ebuzzing) Blog posts with FPs downloaded daily
Boundary First word of clause (excluding conjunctions)	Content Nouns, verbs, adjectives, adverbs	<ul style="list-style-type: none"> • And, uh, now he 's in NC State penitentiary. • uh well i work as a temporary in the Speech Lab 	<ul style="list-style-type: none"> • Um, didn't Congressman Weiner make his vows before Bill Clinton? • Um, Mr. President, that 's the wrong network.
	Function Pronouns, prepositions, conjunctions articles, ...	<ul style="list-style-type: none"> • Uh, but before that she was in the country, • So, I think, uh, we should be doing OK in about 10 years 	<ul style="list-style-type: none"> • I, uh, I would have done the coffee thing. • So, uh, when are they going to start focusing on that
Internal Second or later word within clause	Content Nouns, verbs, adjectives, adverbs	<ul style="list-style-type: none"> • no, but I remember it, like, um, most of my memories of, of, childhood • so i imagine we will be uh shifting over to that service. 	<ul style="list-style-type: none"> • Jann Wenner's famous pub has gone, um, gaga for Gaga. • We'll be sure to stop by and steal ... er ... take some pictures.
	Function Pronouns, prepositions, conjunctions articles, ...	<ul style="list-style-type: none"> • we 're in uh as i said a small town in Indiana and it • well i 'm uh an engineer so i 'm heartedly in favor of this 	<ul style="list-style-type: none"> • His newest book, called Tomatoland, is about ... er ... the tomato. • It's like Cosmo, but ... uh, for guys.

POS-tagging: Stanford Tagger (Toutanova et al 2003) using the provided WSJ tagger model. Lemma frequency: from Corpus of Contemporary American (COCA)

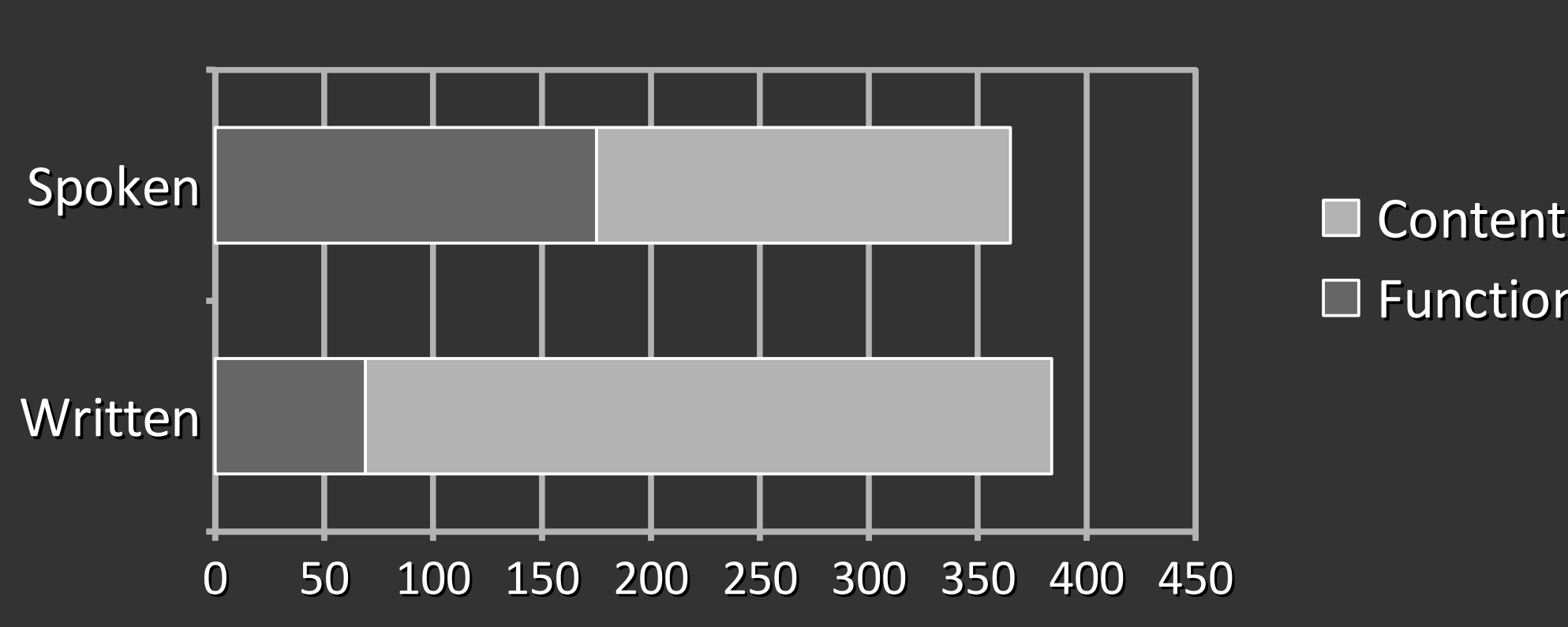
Results

Clause-internal FPs are predominantly used before CONTENT words, but clause boundary FPs are used evenly (interaction between next word type and medium: $\chi^2 = 148.4$, $p < 0.001$).

Ratio of Types of Word Following Clause Boundary FPs

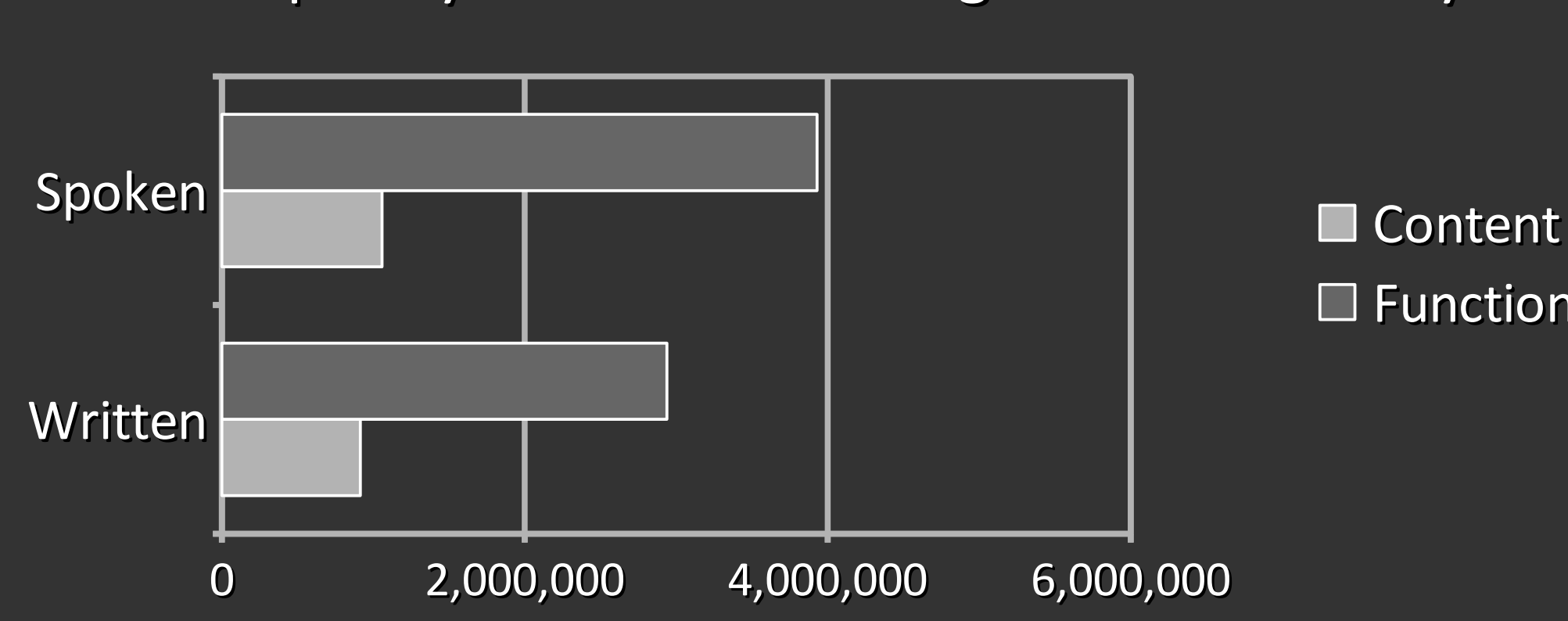


Ratio of Types of Word Following Clause-Internal FPs

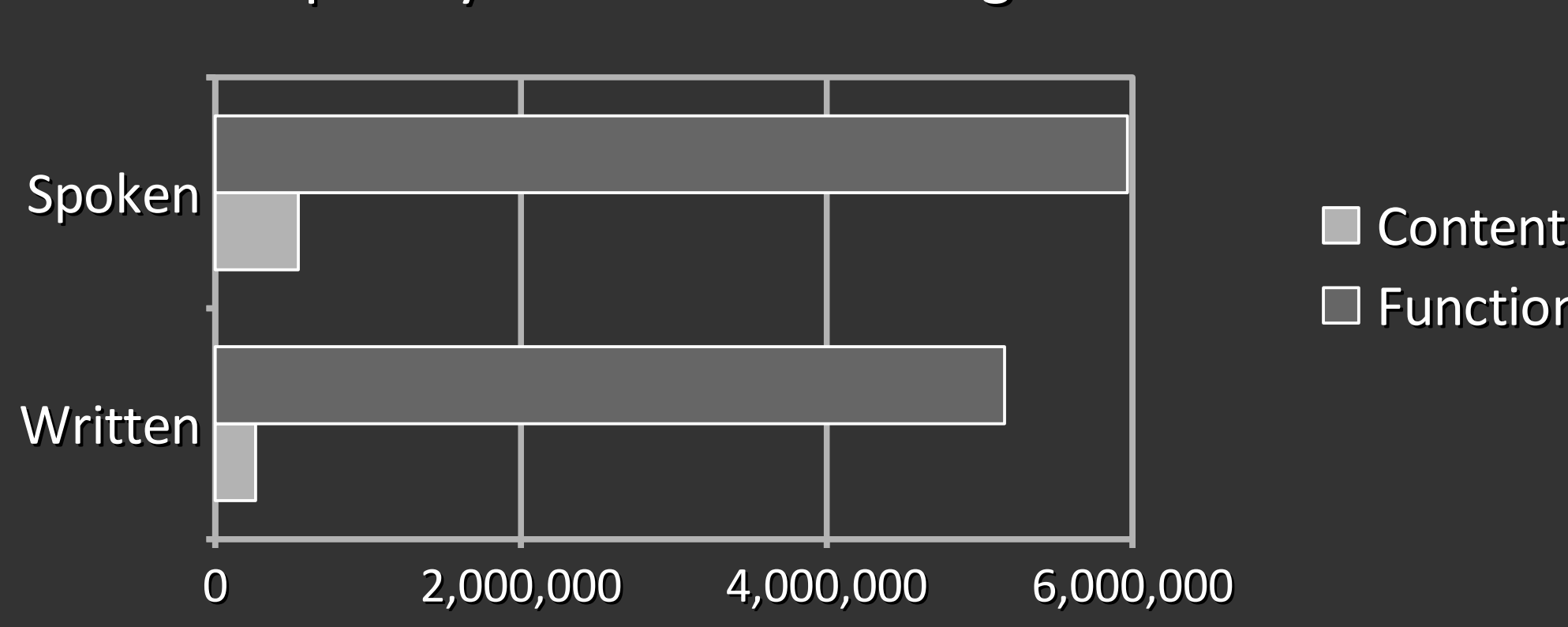


Compared to boundary FPs, internal FPs occur before low frequency content words and high frequency function words (interaction between location and next word type $F(1,1446) = 38.2$, $p < 0.001$).

Mean Frequency of Word Following Clause Boundary FPs

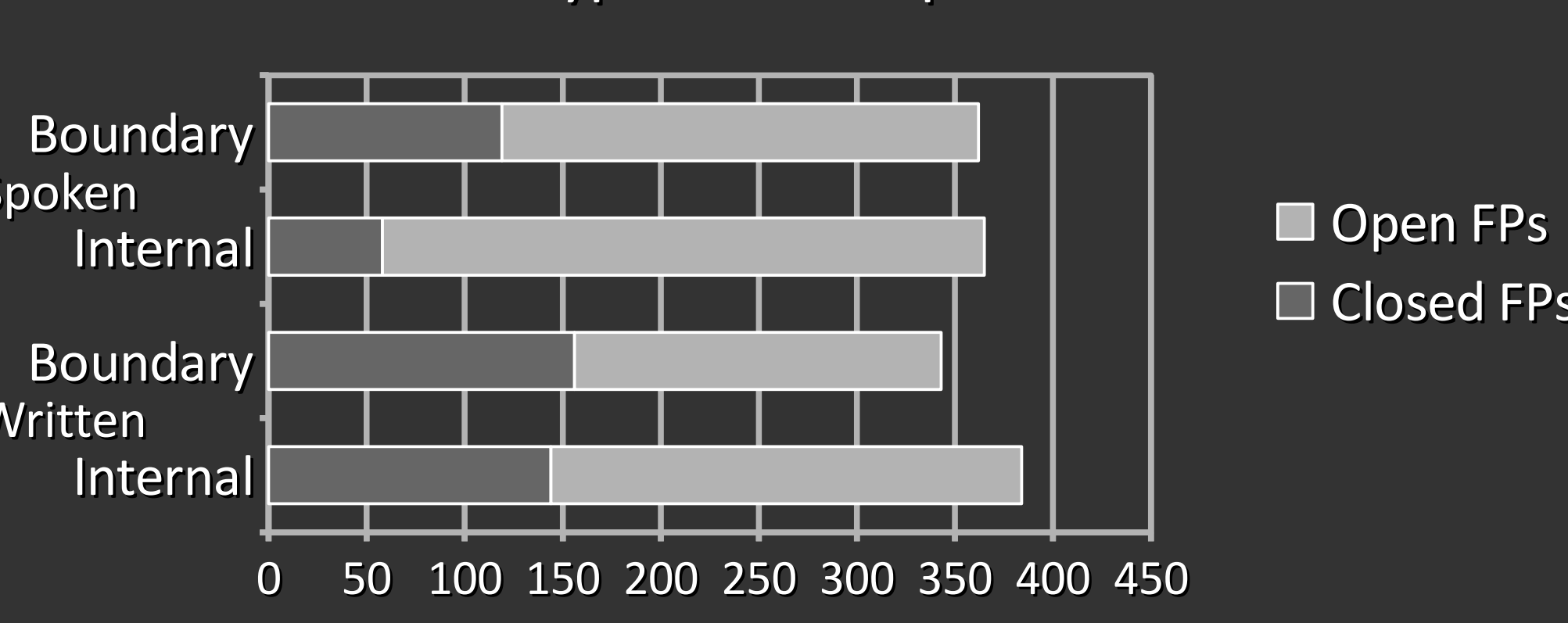


Mean Frequency of Word Following Clause-Internal FPs

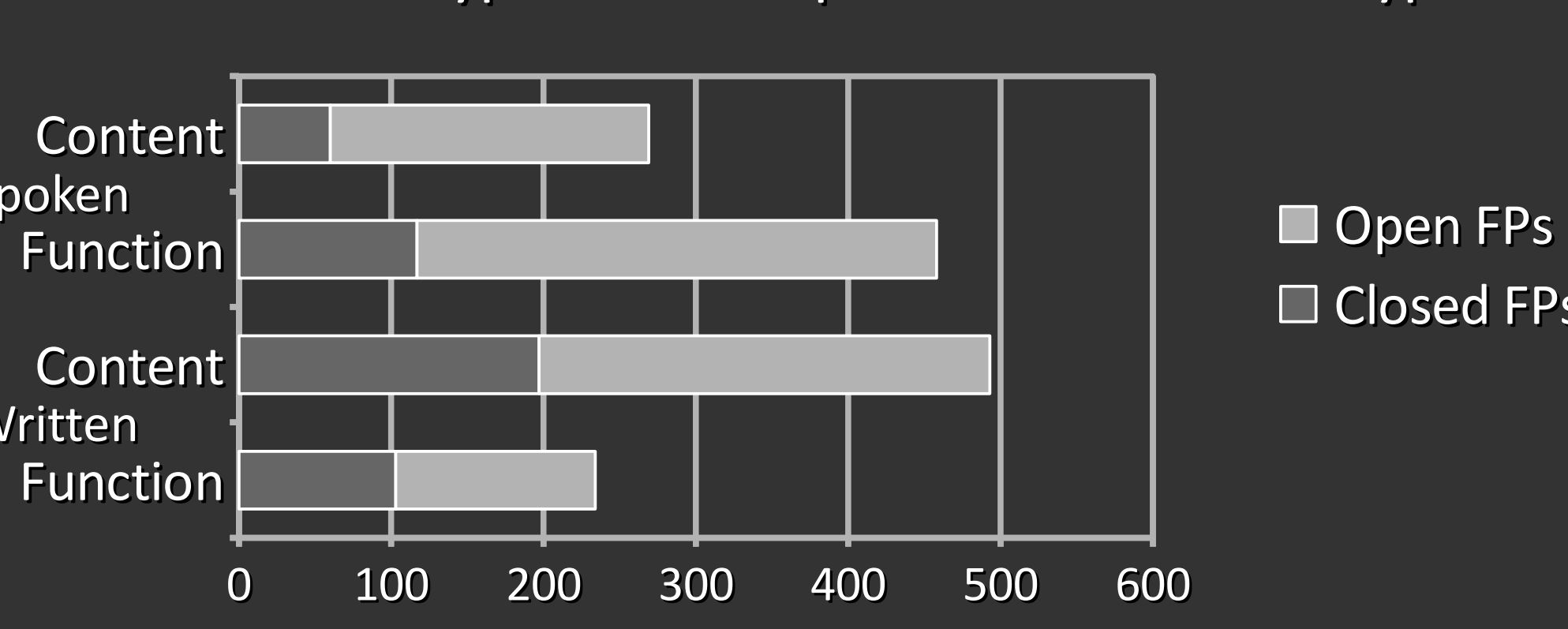


Open FPs are generally more common than closed FPs ($\chi^2 = 175.5$, $p < 0.001$), especially so in the spoken corpus ($\chi^2 = 44.4$, $p < 0.001$), particularly clause-internally ($\chi^2 = 6.8$, $p < 0.01$), but not with respect to next word type ($\chi^2 = 0.7$, n.s.).

Ratio of FP Types with respect to Location



Ratio of FP Types with respect to Next Word Type



Discussion

Writers highlight low-frequency words with FPs. Results from the written corpus consistently show that blog writers see the dominant use of clause-internal FPs as co-occurring with low-frequency content words. Writers seem to be using FPs in order to highlight low-frequency words. This is consistent with and supports the idea that FPs are used at times when lexical access is difficult (cf., Maclay and Osgood 1959, inter alia).

Writers highlight whole clauses with FPs. For clause boundary FPs, the written corpus suggests that FPs are used with no influence from the next word type, suggesting that the internal structure of the clause (or at least the first constituent) is not relevant to the use of FP. This contrasts sharply with the spoken corpus results.

Writers show little distinction between uh and um. While the spoken corpus reflects speaker preference for the open FP over the closed FP, writers do not show this preference. Thus, any distinction between the two is not salient to writers.

A hybrid model of FP use in speech. The difference between the spoken and written corpora results suggests a hybridized account of FPs: Some FPs are used in a conventionalized (i.e., word-like) manner to give a meta-comment on the upcoming utterance or some larger unit of the discourse, or to draw special attention to the next word for some reason. Other FPs thus occur in an automatic manner—as a function of cognitive processes or strategies (e.g., repairs in Levelt 1983).

Future Work

- Explicitly test the hybrid model of FP use.
- Examine ways to identify the difference between conventionalized and automatic FPs in spontaneous speech.
- Examine the role that lexical density plays in the use of FPs in order to test word choice hypothesis.

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