SLOPPINESS IN UTTERING STOCK PHRASES

Sieb G. Nooteboom
Utrecht institute of Linguistics, OTS, Utrecht University, the Netherlands

ABSTRACT

In spontaneous speech stock phrases like idioms and clichés are very frequent. It is a reasonable assumption that uttering such stock phrases is more routine than uttering new expressions. The main assumption tested here is that, due to this routine-like character, the production of stock phrases is less closely monitored for speech errors than the production of new expressions. This assumption was tested against a collection of Dutch speech errors. For each error the intended word string was reconstructed and its stockphrasiness subjectively estimated by two linguist observers on a scale from 1 - 10. Statistical analysis convincingly showed among other things that speech errors have a greater chance to remain uncorrected in stock phrases than in new expressions. It is concluded that stock phrases are monitored less closely than new expressions.

1. INTRODUCTION

Imagine you go to a furniture shop and buy an elegant modern new bookshelf for your study. You pay, and the bookshelf, being quite big, is to be delivered. When it finally comes, it comes in many parts, to be assembled by yourself, with the nuts and bolts provided, according to a plan on paper that is also provided. You are confronted with a task that is entirely new to you. In such a situation you will find yourself paying close attention to every action, each time comparing the result of the action with the plan, making many mistakes, and correcting each mistake as soon as you see it. Now imagine that you did not buy a single bookshelf but ten of them. When you finally assemble the tenth bookshelf the job has turned routine. You know exactly what to do, you have to pay less or even no attention to the plan, and there is much less chance of your making a mistake. But note that if now you nevertheless do make a mistake, the chances are that you will not immediately notice. You go on with the job and only find out about your error when the last part turns out to be the wrong one.

When performing a new task, we monitor our actions closely, such that each error being made has a high probability of being observed and corrected immediately. When we perform a routine task, we do not pay much attention to it. This causes a rare error to probably go unnoticed. Of course, speaking is a highly routine task. We may thus expect that errors of speech often go unnoticed. An analysis of Meringer's corpus showed that on average 64% of the errors are corrected [6]. But note that, even in speaking our mother tongue, speaking is not always and in all respects equally routine. Producing speech messages that have never been produced before very likely is much less routine than producing often used expressions such as clichés, idioms, proverbs, and other stock phrases. It has been suggested by Jackendoff [2, 3] that there are many thousands of stock phrases in a language such as English, and the same is very likely true of other languages. If we define an idiom as a word combination having a meaning that cannot be predicted from the meanings of the constituent words, many thousands may be an underestimate. In everyday speech of many speakers, clichés and idioms appear to be at least as common as new expressions. We expect that these new expressions are generally more closely monitored than stock phrases. From this we may expect errors in new expressions to be more frequent and to have a higher probability of being observed and corrected than errors in stock phrases. During the latter the speaker's attention to her or his output speech will be at a lower level, because errors are relatively rare. Thus speech errors will more easily pass unnoticed. This expectation will be tested against a corpus of speech errors in Dutch.

2. SPEECH ERRORS AND STOCK PHRASES

2.1. The corpus

Our corpus of Dutch speech errors contains 2455 errors in Dutch spontaneous speech, collected some twenty to fifteen years ago in the Phonetics Department of Utrecht University [8]. For our purposes it is important to note that the collectors, all staff members of the Phonetics Department, were instructed to write down each error with its correction, if it was corrected.

2.2. Paradigmatic and syntagmatic speech errors

When classifying speech errors we can distinguish between paradigmatic and syntagmatic speech errors [7]. An example of a paradigmatic error is when someone says "a verbal outfit" instead of "a verbal output", where the confusion between two similar words cannot be traced to another element in the speaker's message. Examples of syntagmatic errors are transpositions like "teep a cape" instead of "keep a tape", where two elements in the same message are interchanged, anticipations like "alsho share" instead of "also share", where an element comes earlier than it should, often replacing another element, and perseverations like "John gave the boy" being spoken as "John gave the goy", where an element is mistakenly repeated (all examples taken from [1]).

In syntagmatic speech errors we distinguish between the "source" of the speech error, i.e. the position where a particular element should have been, and the "target", i.e. the position where a misplaced element ends up. Here we will concentrate on syntagmatic errors, because paradigmatic speech errors generally involve only a single word, and we have no way of knowing how much of the embedding string should be taken into account when assessing whether this error occurred in a stock phrase. In syntagmatic errors we know that at least we should take the string of words including both source and target.

Of the 2455 errors in our corpus, there were 1085 syntagmatic errors. We will concentrate on these.

2.3. Length: the distance between source and target

A word string is a stock phrase if this word string is at least partly lexicalized, on its way to being turned into a single, complex lexical element. Although admittedly from time to time new words are created in the act of speaking, most words we encounter in spontaneous speech were already lexical elements. Therefore we exclude from this investigation all speech errors in which source and target belong to the same word. This leaves us with 839 speech errors in our corpus, the smallest distance being two, viz. source plus target, the greatest distance being 10, viz. source plus target plus eight intermediate words. It is reasonable to expect that the probability of a word string forming a close-knit unit on its way towards lexicalization is greater for two than for 10 consecutive words. Generally we expect this probability to decrease with distance:

Prediction 1

The probability of a word string forming a stock phrase decreases with its length

This prediction may seem so self-evident that it is nearly trivial. However, as we will see later, it is not self-evident that we can easily assess the probability that a particular word string is a stock phrase. Therefore, if prediction 1 is borne out, this will be taken as validation for our method of assessing the probability for word strings to be stock phrases.

2.4. Direction: anticipations, perseverations, and transpositions

In a transposition, first an element is anticipated replacing another element, and then this other element is moved to the position of the anticipated element, as exemplified by "to cut the knife with the salami" instead of "to cut the salami with the knife" [1]. When a speaker is in the middle of making such a transposition he or she may observe the error being made, stop and retrace the utterance for correction. So the overt error would then be "To cut the knife with....to cut the salami with the knife". Such a speech error would have been classified as an anticipation-with-correction in our corpus, as in many other corpuses. Therefore, as observed in [6], many anticipations may have originated as impending transpositions corrected after the first and before the second part of the error. If this is correct, one would expect to find that in collections of speech errors anticipations are far more often corrected than transpositions. This because many of the corrected transpositions are classified as anticipations. And likewise one would expect a higher percentage of anticipations to be corrected than perseverations, because the class of corrected anticipations is increased with corrected transpositions, and there is no such increase for perseverations. This is confirmed by the data from Meringer's corpus as shown in [6]. In the present context, it is assumed that the probability of a speech error being corrected is greater for new expressions than for stock phrases. Thus, if an impending transposition is taking place in a new expression, the chances are that the error will be classified as a corrected anticipation. If, however, the impending transposition is being made in a stock phrase, it is likely that the error will be classified as a transposition. The consequence for a collection of speech errors will be that anticipations will have a relatively low and transpositions will have a relatively high probability of occurring in a stock phrase (prediction 2). Another consequence will be that the difference in stockphrasiness between corrected and uncorrected errors is greater for anticipations than for perseverations and transpositions (prediction 3).

Prediction 2

Transpositions will have a greater average stockphrasiness than anticipations and perseverations.

Prediction 3

The difference in stockphrasiness between corrected and uncorrected errors is greater for transpositions than for perseverations and transpositions.

2.5. Level: lexical and phonological speech errors

When classifying syntagmatic errors we have reasons to keep apart lexical and phonological errors. Levelt [4] assumes that in speech production there are separate modules for *grammatical encoding,* where lexical elements are selected according to the intended meaning and syntactic building procedures, and *phonological encoding,* where lexical elements are spelled out in terms of phonemes. The validity of this distinction in level of encoding is confirmed by the fact that in lexical errors source and target always belong to the same syntactic class, whereas phonological errors are not in this way constrained [6]. It is a priori not quite clear how level of encoding would affect the chance of a speech error occurring in a stock phrase, or, for that matter, the chance of a speech error to be corrected. For this reason phonological and lexical errors are kept apart in the further analysis.

2.6. Correction: sloppiness in stock phrases

The main assumption underlying this paper is that, due to their routine-like character, stock phrases like proverbs, idioms, and clichés are monitored less closely for speech errors, than new expressions. In a corpus of speech errors this will result in uncorrected speech errors having a higher average degree of stockphrasiness than corrected speech errors. This leads to our last and most important prediction.

Prediction 4

Stockphrasiness is greater for uncorrected than for corrected speech errors.

2.7. Testing the predictions.

There are four predictions to be tested, relating the stockphrasiness of a word string to (1) its length, (2) its direction (anticipation vs perseveration vs transposition), (3) the distrib-ution of corrections over its direction, and, last but not least (4) to its being corrected or not.

These predictions could be easily tested against our corpus of speech errors if only for each expression in which a speech error occurred we had a measure for the probability of this expression being in a stock phrase or in a new expression. This was solved in the following way. All 839 syntagmatic speech errors in the Utrecht corpus where source and target were in different words, were corrected back to their intended form. All material preceding the first and following the last word involved in the error was removed. Thus “cut the knife with the salami” would have been turned into “salami with the knife”, “to teep a cape” into “keep a tape”. In this way a list of 839 word strings was obtained without any sign of a speech error. This list was given to two linguist subjects with the instruction to assign to each word string a scale value on a scale from 1 - 10. Scale values indicated the subjective probability for each word string that it formed (part of) a stock phrase or rather was a new expression in the mind of the speaker, 10 meaning certainty that the word string formed a fixed expression in the mind of the speaker, 1 meaning certainty that the expression was new when the speaker uttered it. Expressions like “good morning” “it’s crystal clear”, “believe it or not” would get a high scale value, expressions like “the first president of England” or “apple in your milk” a very low scale value. The scorers were to take into account the possibility that expressions that were new to most native speakers, might be fixed expressions for those who had made the errors. As most speakers had been staff members of the Phonetics Department, expressions like “formant bandwidth” and “vowel triangle” were considered fixed expressions. Table 1 gives the average scale values, broken down for LEVEL (lexical vs phonological), DIRECTION (anticipations vs perseverations vs transpositions), and CORRECTION (corrected vs incorrected). Note that the distribution of corrections very strongly suggests that a great many impending transpositions are classified as corrected anticipations (transpositions: 69% corrections, perseverations 29%, transpositions: 21%).

The data summarized in Table I were submitted to an analysis of variance with repeated measures within observers, with LENGTH as covariate, and CORRECTION, DIRECTION, and LEVEL as fixed factors. Results of the analysis are summarized in Table 2.

-From our first prediction we expect a significant correlation between LENGTH and the estimated probability for each word string of being a stock phrase. This is what is found ($r = 0.26$; $p < 0.0000001$). Apparently the subjective scale values are not completely wild, and show the intended relation with the stockphrasiness of the word strings.

-From our second prediction, stating that transpositions should have a higher probability of having occurred in a stock phrase than anticipations and perseverations, we expect a main effect of DIRECTION. This is also borne out (anticipations: 3.9, perseverations 3.04, transpositions 4.5; $p < 0.00006$).

-Our third prediction, viz. that the difference in stockphrasiness is greater for anticipations than for perseverations and transpositions leads us to expect a significant interaction between DIRECTION and CORRECTION. Although the data in Table I clearly suggest such an interaction, this was not corroborated by the statistical analysis (CORRECTION × DIRECTION: $p < 0.103$). This lack of a significant interaction is probably related to the highly unbalanced design of the analysis. We expect that in a similar analysis of much larger collections of speech errors the predicted interaction will be found.

-Finally the fourth and main prediction, stating that generally uncorrected speech errors have a higher stockphrasiness than corrected speech errors, is convincingly confirmed by a main effect of CORRECTION ($p < 0.0000025$).
Table 2 shows no significant main effect of level. Therefore these data give us no reason to suppose that there is a difference in stockphrasiness between lexical and phonological errors. Also,

DIRECTION:	**anticipations**			**perseverations**			**transpositions**		
CORRECTION: **LEVEL:**	**-corr**	**+corr**	**Δ**	**-corr**	**+corr**	**Δ**	**-corr**	**+corr**	**Δ**
phonological	4.71 *n=276* *l=2.72*	3.73 *n=576* *l=2.78*	**+0.98**	3.09 *n=184* *l=2.87*	2.69 *n=80* *l=2.89*	**+0.4**	4.42 *n=128* *l=2.83*	4.31 *n=42* *l=2.57*	**+0.11**
lexical	3.65 *n=30* *l=3.8*	2.60 *n=100* *l=3.94*	**+1.05**	(2.71) *(n=14)* *(l=3.7)*	(5.00) *(n=4)* *(l=3)*	(-2.29)	4.75 *n=76* *l=3.19*	4.47 *n=14* *l=3.67*	**+0.28**

Table 1. Mean subjective estimates on a scale from 1 - 10 of the probability that a word string is a stock phrase. These values are given separately for word strings involved in phonological or lexical errors (LEVEL), for anticipations, perseverations, and transpositions (DIRECTION), and for uncorrected and corrected speech errors (CORRECTION). The difference between these two values is given under Δ. Lexical perseverations were too few to be included. *n* gives the number of judgements. Each word string was judged by two observers, so the number of speech errors per cell is *n/2*. *l* gives the average length of word strings measured in words. Note that these values cannot be generalized, because the great number of speech errors within one word are excluded.

	df	**F**	**p <**
LENGTH (r = 0.26)	1	72.10	0.00001
CORRECTION	1	22.30	0.00001
DIRECTION	2	9.80	0.00006
LEVEL	1	0.05	0.82
CORRECTION × DIRECTION	2	2.27	0.103

CORRECTION × LEVEL	1	0.68	0.41
DIRECTION × LEVEL	2	2.50	0.08
CORRECTION × DIRECTION × LEVEL	2	0.74	0.48
residuals	1662		

Table 2. Summary of the results of an analysis of variance with repeated measures within observers, with LENGTH as covariate, and CORRECTION, DIRECTION, and LEVEL as fixed factors. Due to the lack of balance in the design, the effect of observer could not be analysed.

there is no significant interaction between CORRECTION and LEVEL. Apparently the amount of attention involved in monitoring for speech errors varies with stockphrasiness in the same way for lexical and phonological errors. This suggests that monitoring for errors is controlled by the same level of awareness on both levels of encoding.

3. DISCUSSION AND CONCLUSIONS

The mental lexicon of a language user contains a great many stock phrases, more or less lexicalized verbal expressions such as proverbs, idioms, collocations and clichés, together with their conceptual, morphosyntactic and lexical structure [2, 3]. On first reflection it may seem reasonable to assume that during the production of complex lexicalized expressions, there is less need of mental computation and mental search than during the production of free expressions. One might think that stock phrases are stored in the mental lexicon more or less as frozen structures, and retrieved from this lexicon as wholes needing very little further computation before articulation. However, the very fact that we find both lexical and phonological errors in stock phrases, and that the kinds of errors are not different from those we find in free expressions, convincingly shows that much computation is going on, both on the grammatical and the phonological level, in preparing stock phrases for articulation.

Apparently, the difference between free expressions and stock phrases is not that there is no mental computation in stock phrases and much computation in free expressions. Rather, mental computation in stock phrases follows well-trodden paths, is more automatized, and therefore can be rapid and smooth, whereas mental computation in free expressions is less automatic, has to find new ways, and therefore may be more error-prone and less smooth. This assumption leads to a number of expectations concerning differences between fixed expressions or stock phrases on the one hand and free or new expressions on the other hand. Among other things one would expect speakers to pay less attention to their speech and rely more on routine in producing stock phrases than in producing free expressions. This expectation leads to some quantitative predictions about collections of speech errors. These predictions, the most important of which is that uncorrected speech errors have a higher degree of stockphrasiness than corrected speech errors, have been tested in the current analysis of a collection of Dutch speech errors. The outcome of this analysis strongly confirms the assumption that stock phrases are monitored for errors less closely than new expressions.

The analysis also confirms an earlier suggestion [6] that many corrected anticipations have originated as impending transpositions, which were observed and corrected after the first and before the second part of the transposition. As one would expect, the percentage of corrections is very much lower for transpositions (21%) than for anticipations (69%), and than for perseverations (29%). This also implies that he distribution of overt speech errors, showing the great majority of speech errors to be anticipations, does not correspond to the distribution of covert speech errors, in which apparently the numbers of anticipations, perseverations and transpositions are much more equal. This is in line again with our main assumption, viz. that stock phrases are less closely monitored for speech errors than new expressions.

From the present analysis it also follows that the amount of attention speakers spend on monitoring for speech errors varies in the same way with stockphrasiness for lexical and for phonological errors. This suggests that there is only one single level of awareness for errors, applied to both grammatical and phonological errors.

If indeed stock phrases are produced more automatically than new expressions, one would also expect stock phrases to show fewer hesitations, greater look-ahead, more fluent prosody, and fewer speech errors than free expressions. Such predictions are yet to be tested (but see 9, 10) .

ACKNOWLEDGMENTS

The help given by Gerrit Bloothooft and Hugo Quené in recovering and making accessible again a nearly lost database of speech errors, is gratefully acknowledged. Hugo Quené also assisted in the statistical analysis. My interest in stock phrases came from discussing idioms with Martin Everaert. Comments by Bert Schouten helped to improve this text considerably.

REFERENCES

[1] Fromkin, V.A. 1973. The non-anomalous nature of anomalous utterances, in: Fromkin, V.A. (ed.*), Speech Errors as Linguistic Evidence*, The Hague: Mouton, pp. 215-242.

[2] Jackendoff, R. 1995. The Boundaries of the Lexicon, In: Everaert, M., Van der Linden, E.-J., Schenk, A. and Schreuder, R. (eds.), *Idioms: Structural and Psychological Perspectives*, Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers, pp. 133-166.

[3] Jackendoff, R. 1997. *The Architecture of the Language Faculty*, Cambridge (Massachusetts)/London: MIT Press.

[4] Levelt, W.J.M. 1989. *Speaking: From intention to articulation*, Cambridge (Massachusetts)/London: MIT Press.

[5] Motley, Michael T. 1980. Verification of “Freudian Slips” and Semantic Prearticulatory Editing via Laboratory-Induced Spoonerisms. In: Victoria A. Fromkin (ed.) *Errors in Linguistic Performance. Slips of the Tongue, Ear, Pen, and Hand*. New York etc.:Academic Press, pp. 133-148.

[6] Nooteboom, S.G. 1980. Speaking and unspeaking: detection and correction of phonological and lexical errors of speech. In: V.A.Fromkin (ed.) *Errors in linguistic Performance: Slips of*

the Tongue, Ear, Pen, and Hand, New York etc.: Academic Press, 87-96.
[7] Rossi, M. & Peter-Defare, E. (1998). *Les Lapsus, ou comment notre fourche a langué*, Paris: Presse Universitaire de France.
[8] Schelvis, M. 1985. The collection, categorisation, storage and retrieval of spontaneous speech error material at the Institute of Phonetics, *PRIPU 10*, nr. 1, 3-14, Utrecht.
[9] Van Lancker, D., and Canter, G. 1981. Disambiguation of ditropic sentences, *Journal of speech and hearing research 24*, 64-69.
[10] Van Lancker, D., Canter, G., and Terbeek, D. 1981. Disambiguation of ditropic sentences, *Journal of speech and hearing research 24*, 330-335.