using as an interface to computer an electronic speech analyzer designed for detecting unfilled pauses in speech. The appropriateness evaluation is based on a psycholinguistic approach to the analysis of cognitive processing in speech through its reflection in the temporal structure of oral discourses.

INTRODUCTION

A number of studies of the temporal structure of oral discourses produced by the speakers in their mother tongue showed the relevance of pauses in spontaneous speech to its cognitive processing [1]. The analysis of the local uses of pauses in speech has revealed that they tend to precede relatively unpredictable lexical items [2] and occur with greater than chance frequency at the beginning of phonemic clauses [3]. It has been shown that pauses are associated with intuitively determined "idea boundaries" in speech text [4]. On the basis of these findings it has been concluded that pauses in spontaneous speech are used for lexical selection, holistic planning of phonemic clauses, and for their syntactical structuring [5]. Further research of the temporal organization of spontaneous speech showed that cognitive nature of pauses determines a universal pattern of their distribution in spontaneous speech of different languages with "hesitant" and "fluent" phases following each other in cycles [7]. The hesitate pauses are characterized by longer and more frequent pauses and it is hypothesized that during these pauses speakers make anticipatory decisions of what to say next. The fluent pauses may be relatively random cycles reflect the execution of semantic plans formulated in hesitant phase. These phases are not based free either, but, unlike hesitant phases, in which pauses may be distributed randomly, fluent phases are characterized by the localization of pauses at grammatical boundaries and at the points of lexical selection, where this selection is guided by a preformulated semantic plan. Instead of the predominantly random distribution of pauses in hesitant phases their cognitive nature leaves no doubt. It has been demonstrated experimentally that the mean hesitancy of hesitant phases cannot be diminished without causing a decrement in the quality of the utterance (its ideational content) [6]. Attempts to make speakers consciously modify the number and length of pauses in spontaneous speech were not successful. It resulted in the substitution of pauses by other hesitation phenomena "filled pauses" (monophonic vocalic sequences "er", "em" and the like), repeats, false starts etc. that pauses are necessary for speech planning and that there are no modifiable noncognitive pauses in spontaneous monologue.

This conclusion is also supported by the finding that there is a positive relationship between the duration of speech pauses and difficulty or abstractness of experimental mental tasks involving speech production (except, perhaps, brief pauses at grammatical junctures), their length can exceed in length 250 ms) is positively related to the level of foreign languages proficiency. The higher the level of proficiency in a foreign language the less frequently the speaker has to interrupt his speech by pauses and thus the higher is the degree of continuity of his speech utterance. This claim is based on the following data.

While the difference of level of verbal planning in spontaneous speech of the native speakers of a language is essentially automatic or mainly cognitive, the different proficiency levels of foreign language proficiency are reflected by pauses ratio; 1

2. Since the difference in levels of verbal planning in spontaneous speech of the native speakers of a language is clearly reflected in the length of pauses and not reflected in the degree of continuity of speech, this difference as measured by lengths of pauses uninterrupted by pauses, the latter case can be regarded as an indicating habit strength entering into production of speech.

HYPOTHESES

1. Since all pauses displayed in spontaneous monologues of the native speakers of a language have the cognitive nature, their cognitive nature is very relevant for speech planning (except, perhaps, brief pauses at grammatical junctures) which can be regarded as reflecting the degree of conscious efforts on the part of the speaker in the process of speech generation.
Anticipation planning of speech and to its syntactical structuring (if the latter is not automatized). Mean phonation time/pause ratio denoted the continuity of speech utterance, or the mean length of uninterrupted temporal sequence, ultimately without pauses equal to or exceeding 250 ms. This measure indicates the strength, entering into production of speech. Percentage of long pauses (exceeding 1000 ms) is an additional measure of difficulties, experienced by speakers in the process of planning. These difficulties were believed to be of linguistic rather than extralinguistic nature, since mean pause length in spontaneous speech of the native speakers of a language rarely exceeds 800 ms if they do not experience anxiety or emotional stress. Mean phonation time/pause time ratio variance was chosen to designate sequential temporal patterning of the speech. The higher variance was alleged to be an indicator of spontaneity of speech and the lower - of its previous preparation. The interval of 75 s was chosen not randomly, but on the basis of the observation that hesitant and "fluent" phases in spontaneous speech make cycles lasting approximately for 10-20 s.

**RESULTS**

Oral discourses of the speakers, included into a high-level-of-foreign languages proficiency group, were characterised by the highest mean, phonation time/pause time ratio; lowest duration of hesitancy pauses, and lowest percentage of pauses, exceeding 1000 ms, as compared with the data found for other groups. High level of foreign languages proficiency also finds reflection in the process of spontaneous speech. Tempo, pauses, prosody, the pauses, are more distributed between pauses, the higher is the percentage of long pauses, as well as in the greater number of visual transformations of oral speech synchronised with the verbal content of the speech. The higher is the level of foreign languages proficiency, the more parity is associated with hesitation pauses within the boundaries of phonemic clauses not only in hesitant "hesitant" phase, but also in the process of a "fluent" phase. Pauses of the same duration at grammatical junctures, found in the speech of the subjects with higher level of oral proficiency, are less detrimental to the textual cohesion of speech. The gain in fluency of preliminary planned discourses, as compared with spontaneous one, is also characterized by the higher level of foreign languages proficiency. The more pronounced is the difference in tempo/pause time ratio; longest continuous uninterrupted preliminary planned discourses, the higher is foreign languages proficiency. It is noticeable that the value of 1000 ms in the preliminary plan (thought over) speech of foreign languages learners, who have not yet achieved a sufficiently high degree of proficiency, the duration of hesitancy pauses, and of "hesitant" phases, during which the speakers make decisions of the "what-to-say" type, while in the "fluent" phases pauses remain fairly long. The thing is that the speakers with low degree of foreign languages proficiency cannot perform lexico-grammatical processing of their oral discourses automatically enough. That is why the variance of the mean duration of hesitancy pauses in their speech is less pronounced than in the speech of the learners with higher degree of foreign languages proficiency.

The above described data revealed a statistically significant difference in the temporal structures of oral discourses, produced by the speakers with considerate difference in foreign languages proficiency. It is evident that foreign languages proficiency, like any other, is associated with the better command of the language, they teach, than the students, who are being taught, particularly those who do not major in a foreign language and who take it as a subject, but not as a profession. Will temporal structures of oral discourses differ significantly if the levels of foreign languages proficiency of the speakers are not as strikingly different as in the case referred to above? To answer this question we have carried out an additional experiment. This time the subjects were not students, but foreign language learners, who were not as strongly interested in learning the foreign language as the students, but self-motivated in the process of learning the foreign language. The average percentage of pauses, exceeding 1000 ms, as measured by phonation time/pause time ratio, also revealed statistically significant at p<0.005 and of group "A" 49.3% - in group "B" 66.3% and of group "C" 54.8%. A difference in mean duration of hesitation pauses in the above mentioned proficiency groups, the subjects, who made up group "A", paused longer. Their mean phonation length as measured by phonation time/pause time ratio 24.4% - for group "A", 49.4% - for group "B" and 69.7% - for group "C". It is noteworthy that the corresponding data (mean pause time/pause time ratio) of different oral proficiency levels of the same subjects in their mother tongue revealed practically the same level of proficiencyassignments correctly. Those, included into group "B", paused longer. The average percentage of correct responses in group "A" was equal to 79%, in group "B" - 70% and for group "C" - 57%. Average grammatical competence test scores displayed a similar picture with 89.2% of correct answers in group "A", 71.6% in group "B", and 61.3% in group "C". Auditory comprehension tests also revealedisostratifying the significant difference among the above mentioned proficiency groups. The subjects, who made up group "A", paused longer. Their mean phonation time/pause time ratio 24.4% - for group "A", 50.7% - in group "B" and 69.7% - for group "C". Average percentage of long pauses varies from 18.3 to 18.7 for group "A", 34.7% - for group "B" and 40.2% - for group "C". The subjects, included into group "A" (50 persons), fulfilled 78% of the test, while the corresponding data for group "B" (50 persons), managed to fulfill correctly only 72% of all examination assignments suggested. The difference between the results of groups "A" and "C" is statistically significant at p<0.05.

Thus the difference in levels of foreign languages proficiency among the above mentioned proficiency groups, the subjects, included into group "A", paused longer. Their mean phonation length as measured by phonation time/pause time ratio 24.4% - for group "A", 50.7% - in group "B" and 69.7% - for group "C". Average percentage of long pauses varies from 18.3 to 18.7 for group "A", 34.7% - for group "B" and 40.2% - for group "C". The subjects, included into group "A" (50 persons), fulfilled 78% of the test, while the corresponding data for group "B" (50 persons), managed to fulfill correctly only 72% of all examination assignments suggested. The difference between the results of groups "A" and "C" is statistically significant at p<0.05.

**CONCLUSION**

Temporal structure of oral speech as an analysis in terms of continuity of speech utterance, phonation time/pause time ratio and frequency of pauses of various length is indicative both of the level of foreign languages proficiency, gained by the learner, and of spontaneity of his speech utterance. Since temporal peculiarities of oral speech can be easily subject to computer analysis the method of foreign language proficiency evaluation, based on the assessment of temporal structure of oral discourses, appears to be most economical.

**REFERENCES**