

A STUDY OF THE EFFECT OF "SLOWED SPEECH" ON LISTENING COMPREHENSION OF FRENCH

Philip D. Smith, Jr.

For untold generations language learners have felt that they could perceive and imitate the sounds of a foreign language better if only they could hear it pronounced more slowly. For just as long, foreign language teachers have steadfastly refused to do so. Although teachers have slowed individual words or syllables to make an articulatory explanation a little clearer, it has been felt impossible to slow down the connected speech stream for two reasons: (1) it is unnatural and stilted and (2) it is impossible to present speech slowly without introducing distortion. "It's better for you to hear it as fast as native speakers talk," replies the teacher ominously pushing the button on the tape recorder.

Yet even the most untainted native speaker can be observed to consciously slow his speech when directly addressing a person he knows to be a foreigner. This is usually accompanied by an increase in volume. Therefore, both learners and speakers intuitively feel that slowing down facilitates understanding.

The teacher is correct that slowing down speech introduces unnaturalness, a gruff "What'cha want?" to a neighbor becomes "What do you want?" or even "May I help you?" to a foreigner.

Everyone is familiar with the lowering of pitch and the "dragging" that occurs when speech is played at too slow a speed in a recording device — that is until recently.

New advances in electronics have made possible devices which will now speed up or slow down recorded speech within limits without appreciable distortions. Most often used in the "speeded" speech mode to assist in time saving for executives and the blind/or in reading programs, the "slowed" speech feature seems a natural for the language learner. What would happen if we could really slow down a foreign language without distorting it? Would students learn better? Could we really hear those elusive sounds?

If learner achievement in understanding a foreign language can be made appreciably better by slowing down speech, the teacher should accommodate the student. On the other hand, by setting the standard high and keeping it there, the student may have to accomplish more. The traditional teacher's stance may be correct.

A search of the literature revealed that no research assessing the effect of "slowed speech" on learner achievement in a foreign language has been reported. The potential impact of such study is great with ramifications for every recorded language program. Accordingly, an experiment to assess the effect of "slower speech" on achievement in a modern foreign language was conducted at West Chester State College in the Fall of 1978.

The underlying question was "Do students introduced to a new language presented in a slowed fashion learn to listen and discriminate better than students who are exposed to more rapid speech from the beginning?" The research hypothesis was that there is no difference between students who are exposed to "slowed" speech and those who hear the foreign language at normal speed.

At the heart of the experiment was the LFXICON VARISPEECH, a device which electronically slows or speeds up records of speech. A VARI-SPEECH machine was purchased through a grant from the Faculty Professional Development Fund. As advertised, the VARISPEECH will increase the speed of speech up to two hundred percent (+200%) and slow speech up to fifty percent without distortion. In practice it was found that slowing speech beyond twenty percent (-20%) resulted in levels of distortion unacceptable to language teachers.

Two second semester college level French classes were used as the "Experimental" (N=12) and "Control" (N=11) groups. Both were small classes, taught by the same instructor using the same methods and materials. Both covered the same amount of French during the four months of instruction. The teacher was not informed which class was the "Experimental" class to avoid a potential source of bias. Students were all non-language majors in a basic "service" course. The text used was Lenard's *Parole et Pensee*.

Since all students had some background in French, each was pre-tested using the **Modern Language Association Cooperative Classroom Tests for Listening Comprehension and Reading**. The **Reading** test was given as a parallel measure of "overall" language achievement to prevent generally less achievement by one of the classes to be misinterpreted as being due to slowing the presentation of oral French. The pre-test data is reported in Table I and shows that the Experimental class scored less on the pre-tests in both **Listening Comprehension** and **Reading**. Later analysis (Table II) showed that the initial difference was significantly greater on the Reading test (P. .05) but there was no significant difference in **Listening Comprehension**, the variable being studied.

TABLE I
Experimental Data = Means and Standard Deviations
MLA Cooperative Classroom Tests, Form L.

READING

	Pre-		Post	
	X	s.d.	X	s.d.
Control (N=11)	22.18	8.52	29.64	9.63
Experimental (N=12)	18.50	6.80	20.25	5.96

LISTENING COMPREHENSION

Control (N=11)	26.82	9.50	31.91	9.39
Experimental (N=12)	19.33	6.59	21.83	9.48

French was chosen as the language of the experiment due to its availability and also due to its inherent features. French is a "nucleonic"

language where "words" are often composed of a series of meaning carrying elements — other "words" — compressed into a single unit. Typical is the cliché "you're welcome" which is composed of six separate "words" compressed into a single unit:

il ne y a pas de quoi (ilnyapadkwa)

Would presenting such an utterance in a slowed but undistorted manner permit the learner to more easily perceive separate units and sounds within the larger grouping — in effect to help their minds keep up with their ears?

The greatest potential for "slowed" speech seemed to be in the initial introduction to the language. The students eventually have to be able to understand French at "normal" speed. Both the "Experimental" and "Control" classes were expected to cover twelve units of the basic text with a minimum expectation of one hour spent in listening comprehension and oral practice in the Language Laboratory. Language Laboratory attendance is logged and monitored by computer.

While the central class covered twelve audio programs at "normal" tempo, the Experimental class was given specially prepared tapes in three steps: four slowed 20%, four slowed 10% and the final four at standard speed. The students were not aware that they were part of an experiment.

At the end of the semester of experimental instruction, both classes were once again given the **MLA Cooperative Classroom Test (L) in Listening Comprehension and Reading** as an experimental post-measure. Means and standard deviations were reported in Table I.

Pre- and post -tests were then compared to see if the presentation of "slowed" French had any measureable effect on achievement using an Analysis of Covariance which statistically "evens" out the two classes on initial differences. The gains pre- to post- on the **Reading** test are compared in Table II. They indicate that the initially significant difference between the groups continued throughout the semester. When the analysis of covariance statistically adjusted post-experimental scores on the pre-test measure no significant difference existed between the two groups ($F=1.65$ at 1,21d.f.) — i.e. the Experimental group was overall not as good but they progressed at a rate comparable to the control group.

TABLE II
ANALYSIS OF COVARIANCE
READING

Control Group N=11		Experimental Group N=12		
A. Analysis of Variance for Pre-Measure				
VARIATION	D/F	SUM SQS.	MEAN SQ.	F-RATIO
Between	1	321.52	321.52	4.46 p. . 05
Within	21	1514.30	72.11	
Total	22	1835.83	83.45	

B. Analysis of Variance for Post-Measure

VARIATION	D/F	SUM SQS.	MEAN SQ.	F-RATIO
Between	1	582.64	582.64	6.54 p. . 05
Within	21	1840.58	89.08	
Total	22	2453.22	111.51	

C. Means

	PRE-EXPERIMENTAL	POST-EXPERIMENTAL	ADJUSTED
Control Group	26.82	31.91	28.21
Experimental Group	19.33	21.83	25.22

D. Analysis of Covariance

VARIATION	D/F	SUM SQS.	MEAN SQ.	F-RATIO
Between	1	42.33	42.33	1.65
Within	20	513.60	25.68	
Total	21	555.93	26.47	

The results of the comparison of pre-post experimental gain on the **Listening Comprehension** test are illustrated in Table III. It can be seen that despite no significant difference between the two groups on the pre-experimental Listening Comprehension test there was a very significant difference on the post-test in favor of the Control class (p. .01). When adjusted on the pre-test, the difference is even greater ($f=13.85$ at 1,21 d.f.). This would indicate that the presentation of a series of graduated "slower" speech programs to the Experimental class had a negative effect on their scores on the criterion **MLA Cogenerative Classroom Listening Comprehension Test**.

The computer program automatically retests the data with a Finney t-test. It gave a $t=3.72$ at 20 d.f. (p. .01) — "slowed" speech apparently inhibited **Listening Comprehension** achievement.

TABLE III
ANALYSIS OF COVARIANCE
LISTENING COMPREHENSION

	Control Group N=11	Experimental Group N=13	
A. Analysis of Variance for Pre-Measure			
VARIATION	D/F	SUM SQS.	MEAN SQ. F-RATIO
Between	1	77.80	77.80 1.21
Within	21	1352.64	64.41
Total	22	1430.44	65.02
B. Analysis of Variance for Post-Measure			
VARIATION	D/F	SUM SQS.	MEAN SQ. F-RATIO
Between	1	505.64	505.64 8.06 p. . 01
Within	21	1316.80	62.70
Total	22	1822.44	82.84

C. Means

	PRE-EXPERIMENTAL	POST-EXPERIMENTAL	ADJUSTED
Control Group	22.18	29.64	27.97
Experimental Groups	18.50	20.25	21.78

D. Analysis of Covariance

VARIATION	D/F	SUM SQS.	MEAN SQ.	F-RATIO
Between	1	208.32	208.32	13.85 p. . 01
Within	20	300.92	25.05	
Total	21	509.23	24.25	

E. Finney T-Test for the Means

t=3.72 at 20 d.f. p. . 01.

CONCLUSION:

The results of the experiment are contrary to the basic premise that slowing down a foreign language initially might tend to foster greater overall listening comprehension later. The reverse was true of the Experimental class — the presentation of French in a slowed format in the first two-thirds of the course resulted in significantly less overall achievement.

IMPLICATIONS:

The experiment with slowed speech presentation unquestionably needs to be replicated with greater numbers, in other languages and greater control. A future experiment in which the classrooms variable can be eliminated and the learning entirely dependent on the audio presentation would be better. It might also be of value to present the foreign language at a slightly faster than normal tempo so that students find "real" language at normal speed easier.

Until such work is done and found to be significant, the study reported here seems to give credibility to the teacher who says, "Slow down? Sorry, its better for you in the long run if I don't."

Philip D. Smith, Jr.
Center for Language
Research and Services
West Chester State College
West Chester, PA 193
(215) 436-2636