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NEW DATA ON THE CHARACTERIZATION OF EMOTIONAL SPEECH

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Introduction

This research is related to the site Voiced Sounds of the Romanian Language, to the priority research of Romanian Academy, grant “Sisteme cognitive” and to CEEX grant “Sistem automat de diagnostic paraclinic în sindromul disfuncțional al sistemului stomatognat”.

The aim is to determine the relationship between normal and pathological emotions speech and formant parameters.

Method

We refer to the sentence “Vine mama”. Subjects have been recorded according to the protocol. The formants have been determined using four tools: the Praat™, Wasp™, Klatt analyzer™ and GlodWave™.

Results

We found that the central frequency of the formants is related to emotions but not for all values; the “i” vowel and unaccentuated final “a” is less related values.

Subject fury neutral tone	F0			F1			F2		
	e	a1	a2	e	a1	a2	e	a1	a2
20048f	±	+	-	+	+	+	+	+	-
01312f	+	±	±	+	+	+	+	+	±
55555f	±	+	±	+	+	+	+	+	+
123456f	+	+	+	±	±	±	-	+	+
77777m	+	+	-	+	±	±	±	±	±
26315m	+	+	+	+	+	+	-	+	-

Subject happiness neutral tone	F0			F1			F2		
	e	a1	a2	e	a1	a2	e	a1	a2
20048f	+	+	+	-	-	+	-	-	+
01312f	+	±	±	-	+	+	±	+	+
55555f	±	+	+	+	±	-	-	+	+
123456f	+	+	+	+	+	+	-	±	±
77777m	±	+	+	±	±	±	+	±	+
26315m	+	+	+	+	+	-	+	+	+

Subject happiness fury	F0			F1			F2		
	e	a1	a2	e	a1	a2	e	a1	a2
20048f	+	+	+	-	-	+	-	-	+
01312f	+	±	+	-	+	±	±	+	+
55555f	-	±	±	-	±	-	-	±	±
123456f	+	+	+	+	+	±	+	-	±
77777m	±	±	+	±	±	±	+	+	+
26315m	±	+	±	±	+	-	+	+	+

Conclusions

The couples of states happiness vs. sadness, respectively fury vs. sadness can be easily distinguished in all cases. It is more difficult to distinguish between happiness and fury.

The intra-speaker emotional states can be easily distinguished. It is more difficult to specify the inter-speaker emotional states.

Website: http://www.iit.tuiasi.ro/sped2007/