AUDITORY ANALYSIS OF COMMUNICATIVE
MEANINGS IN PREVERBAL VOCALIZATIONS

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ABSTRACT
The aim of the research was to investigate the communicative meanings defined in the acts of communication (CM) and intonation of 70 preverbal vocalizations of five Russian 14-22 months old children by means of auditory analysis. The determination of CM in context and in isolation significantly differed for PV of negation, agreement, request but not for emotional PV of displeasure, joy, anger, admiration. There are two types of PV:diffuse and clear-cut.

1. INTRODUCTION
Vocalizations are sounds uttered by a child in the preverbal period. The acoustic approach to the investigation of preverbal vocalizations is being replaced by functional and semiotic approaches (2,5,6). The experiments showed that preverbal babbling is a means of perceived speech prosody mastering (8). When the child is 7-8 months old the parents correctly perceive the vocalizations of request hunger and surprise (5). These works gave us the opportunity of putting forward the hypothesis that in the preverbal period the child masters in vocalizations a number of CMs corresponding to the CMs of verbal utterances. The aim of our research were the following: 1. by auditory analysis to investigate the correspondence between the child vocalization CMs and the CMs of some Russian utterances; 2. to investigate the intonation of the determined PV and compare it with the intonation of the corresponding Russian utterances. In order to achieve the first goal the independent experimentators had to determine the CMs of PVs using the full context and then Russian informants had to recognize different types of PVs in context and in isolation. In order to achieve the second aim the intonation parameters marked by the informants were compared with the intonation of the corresponding types of Russian sentences.

2. PROCEDURE
At child's home the experimentor described in a low voice the situation of the communication, the child's gestures, the expression of his face, the direction of the gaze, his actions and the actions of the adults before and after PVs. Every session lasted 1,5-2 hours. The child's PVs, the speech of the adults and the experimentor's words were

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tape-recorded. 400 communicative acts of 5 children aged 14-22 months were recorded. After the analysis of all the contexts of the communicative acts by two independent experimenters five types of CMs in PVs were determined: agreement or positive answer to somebody's question or request; demand or request; the request to label an object; negative answer to somebody's question; the request to repeat the just spoken sentence.

The vocalizations expressing the following emotions were also singled out by the experimentors who took the full context into consideration: Joy, admiration, displeasure, anger. The experimental corpus consisted of 20 vocalizations with emotional meanings (4,5,6, 5 of every type of the emotional meanings) and 50 vocalizations of the other above mentioned meanings (10 PVs of every type). Both types of PVs were recorded on two tapes in random order.

Forty nine Russian informants took part in the experiment. Twenty one informants listened to 50 PVs and the description of the communicative situation contexts, 25 informants listened to these PVs in isolation. In comparison with the independent experimentors who judged the meanings of PVs using the full context, the context produced for the informants consisted only of the description of the situation, and the words of the adult. The behaviour of the mother and the child after the communicative act and also the child's mimics and gestures when they could point directly to the type of vocali-

zation were not given (for ex.-nods and shakes,angry expression of the face and so on).

The instruction was as follows: - Listen to every vocalization twice and define its CM. The informants were supplied with a list of meanings determined by experimentors. The number of every PV (produced on a card by the experimentor when the PV was perceived) was to be written opposite its meaning in the list if this meaning was determined by an informant. The same instruction and procedure were carried out when the informants listened to the emotional vocalizations.

Three another informants (the graduates of the philological department specializing in phonetics) listened to the PVs in isolation and graphically represented the changes in voice-pitch (rise, fall, rise-fall,fall-rise); tenseness (tense, lax); loudness (loud, soft); the voice register (high, middle, low).

3. DATA PROCESSING AND RESULTS

There were 33 tables made dealing with the number of PVs in context and in isolation defined "correctly" - in the same way as experimentors. At first we had to verify whether the informants defined the meanings of the vocalizations at random or according to their stable perceived qualities. If the PVs of every type were guessed at random then not more than two of ten could be guessed correctly because the relation of the number of PVs of every type to the number of PVs of all the types would be 1:5.Statistical testing of the hypothesis about the part of

the variants (7) showed that both in context and in isolation communicative meanings were not guessed at random. Statistical analysis (according to T-White criterion (3) showed that the results of determinig PV meanings in context (except emotional PV significantly (P-0,05) differed from the results of determining these meanings in isolation. The results of determining the emotional meanings in isolation did not differ significantly from the results of the perception in context. The mean number of correct guesses of PV of displeasure in isolation $\bar{x}$-81%;in context-$\bar{x}$-82%; anger-$\bar{x}$-56% (in isolation); $\bar{x}$-66% (in context);joy-$\bar{x}$-84% (in isolation); $\bar{x}$-74% (in context); admiration-$\bar{x}$-68% (in isolation), $\bar{x}$-80% (in context).

4. DISCUSSION

Perceived in isolation the request to repeat the partner's words is the most easily determined PV (the mean number of correct guesses $\bar{x}$-81%).The request to label an object ($\bar{x}$-36%) was being mixed with other requests and demands.Agreement or positive answer ($\bar{x}$-40%) was being mixed with a denial or a negative answer ($\bar{x}$-33%).But the PVs of agreement pronounced with the intonation of Russian utterance "aha"and the PVs of refusal pronounced like Russian utterance "ne-a" were perceived without failures. In order to answer the question why though not being determined at random these kinds of PVs were yet being mixed up and perceived significantly worse than in context one should consider their graphic analysis.

As for emotional PVs in isolation those expressing anger ($\bar{x}$-56%) were being mixed with another negative emotion similar to it but a milder one-displeasure ($\bar{x}$-81%), the same can be said about admiration ($\bar{x}$-68%) and pleasure ($\bar{x}$-68%).
In graphic representations of 3 informants the coincidence in guessing all the parametres was 80% (loudness - $\bar{x}$-80%, tenseness-$\bar{x}$-83%, the changes ih voice-pitch-$\bar{x}$-86%, the voice register-$\bar{x}$-56%).
In order to understand our data we turned to the representation of the intonation of the corresponding types of meanings in Russian utterances (1). The request to repeat the words in Russian is conveyed with the help of a high level rising tone. The same tone was represented in the informants' analysis of PVs. That is why this kind of PV was correctly perceived in isolation.
Short negative answer or refusal in Russian is expressed by a falling tone or a rising-falling tone corresponding to the Russian word /n e ə/ which means "no". The informants represented the intonation of all the negative answers as falling but in case of /e ə/ corresponding to the Russian word /n e ə/ as rise-fall.
The intonation of the request to label an object can be compared with the intonation of Russian questions: And this one? And you?which have a falling tune. The informants also represented this kind of request PV as falling. Requests and demands in Russian have a falling tone for demands and a rising tone-for requests.In the same way they were intoned in PVs. As both the

requests to label an object and the general request have a falling tone they were mixed up.

The tone of agreement or a positive answer in Russian can be falling and rising. The same kinds of tones were defined by the informants in PVs and that is why they were mixed with PVs – negative answers or refusals. In three cases the intonation of PV corresponded to the Russian word /ə'h ʌ/ with the meaning "yes" and had a rise-fall tone.

In the Russian language differentiating features of different types of intonational structures of an utterance are the direction of the vowel tone and the distributions of tone levels of the precentral part centre and postcentral parts. In PVs neither precentral or postcentral parts are observed. That is why the context is necessary to define the meaning of many PVs.

6. CONCLUSION

The results of the data analysis made it possible to draw the conclusion that PVs have diffuse and clear--cut meanings. Diffuse meanings have PVs expressing answer to a question including agreement, positive answer and denial. They have a rising and a falling intonation and are easily mixed up.

Such CMs of PVs as "a request to repeat the words", PVs with the meaning of agreement (Russian /ə'h ʌ /) and with the meaning of denial (Russian /n e ə /) could be determined without any context. Their sensory patterns had been formed and were informative enough to be re-cognized without a precent-

ral or postcentral parts of the utterance. Requests,demands and requests to label should be included into one diffuse group. As for the emotional meanings of the PVs (anger,joy,displeasure, adoration) it appears that their sensory patterns were formed as they were success-fully perceived both in iso-lation and in context.

In this work PVs were analy-sed and compared with the Russian intonation mostly according to voice pitch. The role of tensness,voice register and loudness may be the topic of further in-vestigation.

7.REFERENCES
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