

MECHANISMS OF ADOLESCENT VOICE CHANGE

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In the past, a large number of studies have been carried out investigating adolescent voice change (AVC) and puberty. Most phoneticians who have studied these processes have tended to concentrate primarily upon voice features -- only occasionally including other variables. Further, most investigators have utilized relatively small populations and have employed a cross-sectional approach; hence, they have found it virtually impossible to provide information for individual subjects relative to any pubescent related process. Finally, most investigators have utilized primarily descriptive approaches when attempting to define and explain the nature of adolescent voice change -- and puberty.

In this investigation, attempts are made to meet these problems. The data-base was obtained from a relatively large group of males (N=48) studied longitudinally at bi-monthly intervals for a period of over four years. Fourteen variables were studied: age, five voice parameters and eight body dimensions. Finally, a cluster analysis statistical technique was utilized in order to permit 1) pre-, neo- and post-adolescent categories to be generated, 2) both group and individual pubescent status to be identified and 3) the classifications to be compared to those developed by traditional methods.

The cluster approach provided the three expected categories with the neo-adolescent group remaining stable and robust no matter how many clusters were specified. Tentative group predictions were established for American youths, and the status of a new subject can be determined by comparing his data to the various categories. Finally, when this method was compared to a traditional category approach, a higher mean neo-adolescent speaking fundamental frequency (SFF) (217 vs 178 Hz) was found but mean age was somewhat lower than that previously specified (13.5 vs 14.3 years). It can be concluded that the approach here utilized is useful as it permits the pubescent categories to be specified on the basis of easily applied group means and variabilities.