Brief Progress Report: Cantometrics-Choreometrics Projects
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All the musical selections are executed with instrumental introductions. The introduction of the second example was not transcribed, because it was really a variation of the first.

In conclusion, I should like to add that due to my ignorance of the subtle linguistic dialectical expressions and the typical pronunciations of the Bluefields' inhabitants, it became quite impossible for me to understand the words of the songs. That is the reason that so few appear with the music. In the song accompanying the procession, the word "tululo," musical in character, is combined with the term *pasánda*, which comes from the Spanish *paseó* or *paseando*.

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**Brief Progress Report:**

*Cantometrics-Choreometrics Projects*

Since 1962, a long term study of the relation of expressive behavior to culture has been in progress in the Department of Anthropology at Columbia University. With myself and Conrad Arensberg as co-directors, extensive comparative analysis has been made of song performance, orchestral organization, song themes, prosodic patterns, dance and movement style, and conversational style from sizable samples of cultures. The work has been supported by the National Institute of Health, the National Science Foundation, the Ford Foundation, the National Endowment for the Humanities, and others. New methods have their roots in linguistic and para-linguistic analysis, the Kinesic study of verbal communication by Birdwhistell, the Laban effort — shape analysis, Murdock's ethnographic
survey, and the structural approach to culture as formulated by Arensberg, combined with extensive use of the computer to handle large data banks and multi-scaled descriptive systems. All studies have been made within the framework of global culture samples, for which information about social structure was available. The aims of the project were two-fold: 1) to discover how expressive behavior varied with culture and to produce taxonomies of song, dance, etc., 2) to find in what ways performance structure varied with the fundamentals of social structure, thus laying the basis for a scientific social aesthetics.

**CANTOMETRICS** is a coined term for a rating system that describes the main character of recorded song performances so that they may be statistically compared and classified. The system was invented by Alan Lomax and Victor Grauer in the 1960's and has been applied to the analysis of 4000+ songs from 400 cultures coming from most of the main cultural regions. Since its intent is to capture the constant features in a cultural style, rather than to record the differences between songs, small song samples were generally adequate for its analytic purposes. Each cantometric performance style, in fact, generally rests upon a small number of performance models composed of a few outstanding and steady features which are easy to recognize and turn up in a large number of cases per area. Our discovery is that these models have been distributed over continents, indicating the spread of ancient style patterns that have shaped the music of many cultures over hundreds of years.

For many of the cultures studied standard information was available about social structure (derived from the Murdock Ethnographic Atlas) concerning economy, social organization, family type, and other similar standard reserves of social relations. It was thus possible to test for cross-culture correlations between frequencies of social and performance structure. A sizable number of strong relations were found, indicating that song performance symbolizes and reinforces aspects of social structure such as the level of economic development and political organization, the degree of community solidarity, inter-sex complementarity, and the differential socialization of males and females (See review, pp. 155-158 in this volume.)

Recently a large scale factor analysis has confirmed these findings. A global, regional, and areal taxonomy of song style has resulted which shows in detail how song and culture have specialized side by side in many different environments. The addition of data about communication to anthropology's standard measures of community organization has produced new findings about the evolution of culture itself. (See: "Evolutionary Taxonomy of Culture," *Science*, July 21, 1972.) A number of similar methods concerned with the how of performance rather than with the what — with the observable standard of performance rather than with the content of melodies, step patterns, verse, and the like, were reported on in *FOLK SONG & CULTURE*, published by the American Association for the Advancement of
Science, Washington, 1968. (See review in this volume.) Since that time, much further development has taken place in systems for analyzing comparative dance analysis and comparative speech style analysis.

**CHOREOMETRICS** is a rating system for the comparative description of movement style, especially dance. This system, the co-invention of Alan Lomax, Forrestine Paulay, and Irmgard Bartenieff, has come to consist of more than 100 measures that deal with limb use, posture, dynamic qualities, use of space, movement flow, group organization, leadership roles, choreography, step-style, arm style, and the like. Instead of analyzing for a step by step or movement by movement map of dance, it has devised standard rating scales to pick out the differential models of movement style that run through the visible behavior of whole human events or dance.

Since differing frequencies are given numerical ratings, profiles can be calculated and compared by the computer. Again, the results correspond in the main to those found by the cantometrics of song style, thus indicating the existence of style patterns connected with culture and social forces that shape all types of expressive behavior in a given tradition. Correlations between choreometric variables and cultural variables also resemble those uncovering by Cantometrics.

Thirty-seven teaching tapes for Cantometrics have been compiled that produce an average consensus of 82% between judges, enabling serious students to learn the system in a few hours. Further, it might be important to add that the first teaching films for Choreometrics are now in preparation and will be complete by the end of the year. In the meantime, a large collection of dance films is being gathered from the whole range of culture for further testing of the Choreometrics system and for the completion of the first ethnography of movement style. I take this opportunity to appeal to the readers of the *Yearbook* for information about important documents of folk life style and dance. The areas where we most need dance films are:

- Siberia
- Central Asia
- Caucasus
- Iran & Iraq
- Tribal India
- Tribal Southeast Asia
- China
- Indonesian Archipelago
- Old Polynesia
- Tribal North American Indians

For those members of the I.F.M.C. interested in helping in the first global survey of dance, they can write to Choreometrics directly at 215 West 98th Street, New York, NY, 10025, U.S.A., or if they wish to send films for
analysis, shipment can be made through their embassies, through Schenkers International Forwarders, Inc., or through some similar forwarding company. We can take care of shipping expenses and will furnish copies of ratings of the films analyzed to contributors. Work print is preferred. The films will be well taken care of and will be returned within a reasonable period of time.

During the past year a small sample of spoken dialogue has been assembled, representing 100 different languages and language families. These were analyzed in terms of a rating system called Para-linguistics II, resembling the other system discussed earlier. The sample was too small to produce an interesting geographic taxonomy. However, clustering scales from multi-factor analysis formed a set of factors that were closely analogous to sets found in the factor analysis of song and movement. The correlations run with social structure show that these factors also dealt with the level of the technical division of culture: the relative solidarity of the group, sexual roles, and the anxiety produced by socialization. The three studies taken together indicate that, so far as those traits we have been able to compare cross-culturally are concerned, performance in all three media communicate and reinforce a small number of messages about social relations.

The correlational and taxonomic computer program developed by us in the past ten years will be applied in the near future to all the rated data from orchestral types, breathing rates, comparative phonology, speaking style, song style, dance and movement style, as well as culture type. The aim is to produce preliminary classification of culture which involves the aesthetic, the communicative, as well as the social and economic. This will not only give a truer picture of culture, but will show how the several systems work in support of each other to reinforce the basic stylistic models that shape the growth of culture itself. We hope to have our methods published on tapes and films for others who wish to apply them anywhere in the world in similar studies. We are anxious, of course, to round out this preliminary survey of mankind's expressive resources. This year we will compile the information we have gathered in a survey volume. This volume will give many types of performance profiles for many cultures, areal taxonomies of distinctive features, and the many correlations that have been established between stylistic and socio-economic factors. Thus, a preliminary review of expressive performance in a global sense will be available.

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