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Studies Investigating the Reliablility of the Laban System of Notation

by

Ann Kipling Brown

A THESIS

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(SIGNED) A Kipling Brown .....

PERMANENT ADDRESS:

35 Cowburn Crescent

Regina, Saskatchewan, Canada

DATED April 22, 1991

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled **Studies Investigating the Reliability of the Laban System of Notation** submitted by Ann Kipling Brown in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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Supervisor

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External Examiner

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In both the research and the writing of this dissertation I owe a great deal to many people.

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Very special thanks to Dwight for his patience and love which helped to keep me on task.

ABSTRACT

There is general agreement that dance notation scores permit the preservation and reconstruction of dance works. Many successful attempts to revive, remember, and record dance have been made through various notation scripts. One of these is the Labanotation/Kinetography Laban system. It is a widely used system which has made a major, distinctive and valuable contribution to the study of human movement.

One of the important functions of a notation system is to provide an accurate record of movement so that the content can be revised and repeated. However, there is little evidence to support the claim that notation is an accurate and reliable tool in the analysis and recording of movement and dance. This research has addressed the global issues of reliability and validity in the recording and reconstructing of dance through the use of the Laban system of notation. Reliability was seen as the consistency with which knowledgeable practitioners applied the system to record and reconstruct movement. Validity was identified as the accuracy with which practitioners were able to record and reconstruct in different movement domains.

A series of four studies were designed and implemented to probe the issues of reliability and validity. These studies involved procedures which would test the notation system in both the recording and reconstruction process. The results of the four studies provided positive information regarding both the reliability and validity of the system.

Participants recorded or reconstructed specific dance phrases in these studies. These participants came from varied dance backgrounds and with different levels of experience with the notation system. The participants completed notation scores or

performances which were compared on a feature-by-feature basis, as well as on the total content, to those of the choreographer of the selected dance phrase. Both agreements, disagreements, and omissions of information were tabulated.

The first investigation constituted a pilot study through which an appropriate design and procedure for assessing the reliability of the system was investigated. Even though the reliability was low, the study did provide information regarding the merit of the procedure for assessing the reliability of the system. Once the design and procedure had been confirmed, three further studies were constructed to consider both the recording and reconstructing of selected dance forms.

The second and third studies were implemented specifically to consider the consistency of the notation system in the recording and reconstructing of dance. Study Two replicated the design of the pilot study and was extended to include two dance forms. Both studies clearly established that the system is an accurate and reliable tool in the recording of movement. The third study also provided support for the validity of the system as participants less knowledgeable in the particular dance form used were able to produce an accurate performance of the major features of the dance phrase.

A fourth, and final study, further explored the issue of reliability. As well, it investigated the validity of the Laban system in the recording of movement in a "well-known" (e.g. dance) and less "well-known" (e.g. gymnastics) movement domain. Participants produced a high degree of accuracy in the recording in both movement domains.

Whilst the research in this study provides support for the hypothesis that the Laban system of notation is an accurate and consistent device in recording movement, it is

recommended that further studies are undertaken. These studies should replicate and extend those studies undertaken here to confirm and to show that the system is a reliable and valid tool in the recording and reconstruction of movement in a number of areas.

ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

CHAPTER

LIST OF TABLES

LIST OF FIGURES

APPENDICES

CHAPTER 1

INTRODUCTION

A. Opening Comments

Attempts have been made to revive, remember, and record dance through photographs, word of mouth, memory, film, and various notation systems, as well as with the written word. In general, these methods have not proven adequate in providing a true picture of the content or structure of dance or of a particular dance work. Terry (1981) suggested that the exactness of description can only be achieved by two methods, by film or the recording of "actual performances" and by notation for "recording choreography" (p.226). This discussion will address the second method of description.

Within the literature on both dance and notation there are many references to the uses and applications of notation systems in recording dance and dance works. These are generally used for the preservation and reconstruction purposes. During the past five centuries, many notation systems have been invented and implemented. In the dance world, they have mainly provided a record of the social dances and important choreographies of the day. Most of the earlier systems, and indeed many of the more recent systems, have not spread far beyond the circle of persons directly concerned with a specific dance form and its related notation system. The demands made by dance and movement practitioners upon a notation system have generally prevented the development and widespread use of the majority of these notation systems.

In 1966, Curl made a preliminary inquiry, in the form of a questionnaire, in order to identify the essential features of a good notation system and to describe how

movement is described in two specific notation systems. The specific notation systems described were the Laban and the Benesh Movement notation systems. There were two reasons for this investigation: first, a great deal of interest had been shown in the use of the two systems in physical education; and, second, the information collected would "provide the basis for a more detailed comparative study at some future date" (Introductory Note, p.1.).

Hutchinson Guest's (1984) identification of criteria for a "good system of movement notation" acknowledges the findings of this earlier study. She identified: universality -- the potential to record every form of movement; comprehensiveness -- the potential to record the degree of detail required; movement analysis -- based upon anatomical, scientific, and psychological principles; versatility in movement description -- the potential to record movement in the way it is conceived; flexibility in application -- the potential to record the broadest to the most detailed indication; logicality -- the logical and consistent presentation of rules and symbols; and, visuality, practicability, and legibility -- the potential to clearly read and assess the information (p.189-191). Within the notation world these criteria have provided a basis and a guideline for assessing the design and application of notation systems.

It was through consideration of the above criteria that the potential and success of notation systems has been recognized. Amongst those acknowledged systems is the Laban system of notation, called Labanotation and Kinetography Laban. It was invented and developed by Rudolf Laban (1879 -1958) during the time he was working as a choreographer and teacher. Even though there is evidence that Laban was working on a

notation system in Paris in 1900, it was not until 1928, in a quarterly magazine Schrifttanz, that a discussion of the scope and intent of the notation system took place.

At this time the system was called Kinetography (Kinetographie). The term originated from the Greek words 'kinesis', meaning 'movement', and 'graphien', meaning 'to write'. Two subterms were also used: 'tanzschrift' (dance-script), introducing the use of the notation system as a means for the documentation and preservation of dance, and 'schrifttanz' (script-dance), indicating the use of a notation system for analysis of movement and for the composition of dance. These terms clearly illustrated Laban's intention in the invention and development of his notation system.

Maletic (1987) pointed out in her translation of the German text, Schrifttanz, that Laban's "ultimate aim of Kinetography is not dance-script but script-dance" (p.114). Laban recognized that two different demands would be made of a notation system: firstly, for the preservation and observation of dance; and secondly, for the analysis of movement and composition of dance. What is particularly significant is that Laban considered the script-dance to be the major focus of his notation system. Based on a study of Laban's research into other notation systems, it can be surmised that this was indeed the main focus of the system. The selected principles that he synthesized and adapted from these earlier system support this claim. Further observation of the basic principles of the present Laban system indicate that the system has developed and that it holds to the view that the notation system is to be used by the dancer and the choreographer, for both the analysis of movement and the composition of dance.

Even though this was Laban's purpose, it is significant that developments in the

application of his system of notation have primarily been in the areas of documentation and preservation. Evidence for this statement can be found in the following developments: in the professional status of notators; in the demand that the works of well-known, professional dance choreographers are recorded and reconstructed from notation scores; and, in the importance placed upon the use of the professional notation scores in educational settings.

The particular use of the notation system by the dancer and choreographer as a tool for analysis and composition has not been so clearly developed. This may be due to the particular interests and needs of those experts and practitioners who have continued with Laban's work. However, it must not be ignored that some attention is being given to this particular aspect of the notation system. Dance programmes are beginning to refocus and become aware of its potential. It is now being used in the observation and analysis of dance technique, style, and choreography. This is occurring in both the professional and educational fields.

Discussion of the Validity and Reliability of Labanotation

There is agreement between notation practitioners that Labanotation is based upon a universal framework of analysis. The principles and symbols of the system are seen as logical representations of the functions of the body as it moves within the spatial, temporal, and dynamic ranges (Laban, 1956; Hutchinson Guest, 1970, 1984; Maletic, 1987). Maletic (1987) expanded the scope of Labanotation when she asserted that Laban's classification of movement and his notation system allowed for the description "of any

type of movement or dance style" (p.126).

Those who study science see validity as the appropriate, meaningful, and useful inference made from a series of scores (Messick, 1988, p.34). In the case of Labanotation, is the system actually capturing the movement content. The assumption that Labanotation does capture the movement content is based upon the work of Laban, members of the International Council of Kinetography Laban (ICKL), and specific writers in the field whose work has been refereed by suitably knowledgeable authorities. These agreements provide evidence that the system holds validity in the form of face validity (Babbie, 1989, p.124). The following information expands upon this assumed validity and identifies the need for further investigation.

It is interesting and relevant to note Laban's initial intention in the invention and development of his system. However, based upon subsequent applications of the system, there are specific issues which need to be addressed. It is acknowledged that previously cited criteria for a "good system of movement notation" (Hutchinson Guest, 1984, p.189) have been generally accepted. Even so, it must also be acknowledged that certain aspects have not been formally investigated. One of the major concerns about the use of a notation system has centred on the validity and reliability of the system in capturing and replicating the specific features of the movement content and structure of dance.

There is little research to support the claims that notation is an accurate and reliable tool in the analysis and recording of movement in dance. Such reliability would be reflected in the consistency with which practitioners knowledgeable in the system are able to record and reconstruct dance movement. The International Council of

Kinetography Laban (ICKL), founded in 1959, is the official body and custodian of the Laban system of notation. Its specific objectives are:

> . . . to increase the efficiency and international usage of the system; to guide the unified development of the system; to act as a deciding body with regard to the orthography and principles of the system; to encourage consistent standards of practice; and, to promote research into matters of notation which are likely to increase the efficiency and international usage of the system (Constitution, 1983).

At the biennial conferences of ICKL, particular research concerns regarding the specific principles, orthography, and symbology of the system are addressed. Separate sessions involve presentations of the uses and applications of the system, and are included as matters of interest for the members. As yet, such presentations are not contained within the official business of the Council.

Most assertions that the Laban system of notation has been successful, either in the recording or reconstruction of movement and dance in professional and educational settings, are personal, with reference to a situation being anecdotal and unsubstantiated in formal research methodology. Observations have been made in the literature regarding the actual content of a notation score. Some writers question the accuracy with which the notation system can record movement and dance. Others question the fact that knowledge of the system aids general observation and analytical skills in dance and related movement. Van Zile (1984) debated several questions and related issues in her article What is dance? Implications for dance notation. Amongst the questions she asked were: "can the notation score represent the intended work of the choreographer?; can several

notators produce the same score of the same dance?; should a dance be notated, and by whom?; and what, exactly, should be notated?" (p.12-14). Such questions point to the issues of validity and reliability. They illustrate the need for formal investigation of the use of the notation system in the recording and reconstruction of movement and dance.

B. Statement of the Problem

Even though it is predicated that the Laban system of notation is an established and recognized method of recording dance and dance works, questions continue to be raised about the validity and reliability in the recording and reconstruction contexts. The current literature on the system basically contains position papers, written by practitioners in the field (Papers, ICKL, 1957-1988).

Generally, most of these are personal justifications of the system, descriptions of recordings and reconstructions achieved through the use of the system, and applications of the system in both professional and educational settings. In and of themselves, these writings do not provide substantial and decisive evidence of the system's accuracy.

Therefore, the problem to be addressed in this research involves the confirmation of the validity and reliability of the notation system, through objective and descriptive analysis.

C. Research Question

The proposed research will focus upon the application of the Laban system of notation in the recording and reconstruction of dance. Therefore, the specific question to

be addressed is as follows:

Is the Laban system of notation a valid and reliable tool for the recording and reconstruction of dance?

In order to answer this question it will be necessary to consider the following: the analytical framework upon which the Laban system of notation is based; the principles and symbols of the system; and the scope and role of the notation score.

The requirement and application of a notation system rests upon the demand that dance be recorded. Therefore, it will be necessary to consider the reasons for recording dance, what is involved in notating a dance, and how the notation system represents the content and structure of a dance.

D. Methods

The purpose of this research is to extend the investigations initiated by Van Zile (1982) and Bartenieff, Hackney, True Jones, Van Zile, and Wolz (1984), and to confirm the assertions that the notation system is successful in the recording and reconstruction of dance. In previous studies it has been accepted that a particular symbol, orthography, or principle is valid in its approximation of human movement. This research holds the assumption that the inference is valid; that is if the Laban system of notation is an accurate tool in the recording and reconstructing of movement, then the symbols, orthographies, and principles of the system are valid tools for these purposes. As many dances have been successfully recorded and reconstructed according to the elements of the system, as ICKL has verified these recording and reconstruction processes through its

mission, and as the tool has been successfully applied in a variety of movement domains, the conclusion that the system is valid has been held true. This "modus ponens" deduction has been held as an assumption with those who apply the system. This assumption will be held true in this research in order to examine and analyze the consistency with which practitioners are able to apply the system.

One of the studies in this research also attempts to extend and verify the validity of the system through a content analysis of the elements of the system. The study considers the accuracy of the system in the recording of movement in a different movement domain, that is, other than dance.

Initially, the research involved the design and implementation of a pilot study. The pilot study was completed to particularize procedures for analyzing and assessing the validity and reliability of the notation system. As a result of this pilot study, procedures were established which provided the basis for the design, implementation, and analysis of data of three further studies. In order to clarify the established procedures and to discuss the results of each of the studies, the manuscript has been organized as follows.

This chapter continues with a description of the limitations and delimitations of the four studies and the definition of terms to be used throughout this research. Chapter 2 contains a review of the literature pertinent to the research topic. In Chapter 3, the design and results of the pilot study are reported in order to describe and discuss the overall processes used to implement procedures and analyze data. In Chapter 4, the details of the study implemented to replicate and confirm the procedure and findings of the pilot study are presented. These first two studies focused upon the recording process and

ascertained the degree of reliability in producing notation scores of selected dance phrases. A third study, described in Chapter 5, investigated the process involved in the reconstruction of dance phrases. In Chapter 6, a fourth study is reported. This study attempted to ascertain whether domain knowledge of the movement form notated is integral to the accurate recording of movement. The final chapter, Chapter 7, considered the findings of the four studies from which recommendations for further examination and explorations of the Laban system of notation are made.

E. Further Considerations

1. Limitations of the Studies

The following limitations restricted the thoroughness of the designed studies:

a. In each of the four studies the use of videorecording was unavoidable, and at times essential. Videorecording is used extensively to record and preserve dance works, and is often used to supplement the notation score. Videorecording is used primarily in capturing a single performance of a dance work, and it is recognized that such a single performance is often subject to error and interpretation. It is possible to watch a videorecording many times, to slow down, reverse, and view frame by frame. There are diverse opinions as to whether a videorecording is an adequate means of studying a dance work. As yet, there is little satisfactory evidence to suggest that it is not a useful and worthwhile tool. The reasons for the use of the videorecording in each of the four studies are that:

i. participants who agreed to take part in studies two, three, and four

were not in the same location as the researcher;

ii. a videorecording would provide a standard, repeated performance for recording purposes;

iii. a videorecording would provide a record of a reconstruction; and,

iv. as there could be no discussion with the dancer or choreographer, decisions could only be made through observation.

b. The researcher was both choreographer and notator of the modern dance phrases, and the notator of the ballet phrases. However, all of the notation scores were checked by an independent notator before they were given to the participants.

c. The data analysis was designed and undertaken by the researcher. However, reference was first made to notation texts and then second, collaboration took place with experts in the field of dance and notation, to check the notation scores and methods of analysis. A further interreliability study was undertaken in that the data of all studies was independently analyzed by an expert in the field of Labanotation.

2. Delimitations of the Studies

The following delimitations defined the boundaries of the research:

a. The individuals selected to take part in each of the studies represented a particular, selected part of the population of notation practitioners. These were individuals who have studied and applied the Laban system of notation in both the

recording and reconstruction of dance; and,

b. The dance phrases composed and videorecorded for each of the studies were short. Also, they were either ballet or modern in style. In the fourth study gymnastics was also included.

3. Definitions of Terms

The following definitions will used throughout this research:

Labanotation -- Labanotation is a movement script which represents through abstract symbols specific aspects of movement. These aspects are spatial, temporal, and dynamic elements. The Laban system of analysis consists of three areas of description.

a. Motif Description. This part of the system provides a general statement about movement; it pinpoints the motivation of the movement and the movement's idea or intention. General statements are written in the abstract symbols on an open, vertical staff. they may describe details of action, time, space, body parts or relationships and their combinations.

b. Labanotation of Structured description. This aspect circumscribes the process of recording movement on paper and involves the conversion of the elements of space, time, and dynamics, parts of the body and relationships into abstract symbols. The abstract symbols are placed within a three-line, vertical staff and modified according to the required detail of description.

c. Effort-Shape description. This element provides a description of movement in terms of quality and expression. The symbols represent the pattern of movement that reflect the changes of the flow of energy within the body. The symbols are combinations of the effort graph combinations; and, when used alone to describe a movement happening, are placed on a horizontal staff. They may also be placed on the open or three-line staff to emphasize a specific quality or flow of energy.

Notation score -- is the designator of the specific properties of a dance work and contains information regarding the actions and spatial, temporal, and dynamic elements of a work.

Prescriptive score -- is a score which contains the details of actions, and the spatial, temporal, dynamic elements of a dance work.

Descriptive score -- is a score which contains details of every aspect of the actions, spatial, temporal, and dynamic elements as well as the manner of performance of the dancer. Every aspect is recorded with precise detail.

Recording -- is the process of transcription of the actions and elements of movement into abstract symbols of the system.

Reconstruction -- is the process of translation into performance the symbols written in the notation score.

Reliability of the notation system -- is reflected in the consistency with which practitioners knowledgeable in the system are able to record and reconstruct movement.

Validity of the notation system -- that the principles, symbols and orthographies of the system are logical representations of the body as it moves within the spatial, temporal and dynamic ranges. It is reflected in the applications of the system by knowledgeable participants who are able to record and reconstruct in different movement domains.

4. Justification

This research will contribute to the field of Labanotation as it will descriptively consider and analyze the validity and reliability of the notation system in the recording and reconstruction of dance. Not only will establishing validity and reliability assist in the justification of the use of the notation system in dance, but it will also allow further the application of the Laban system of notation to related fields of movement study.

CHAPTER 2

REVIEW OF LITERATURE

1. Introduction

The literature reviewed for this research relate to the need for appropriate recording devices for dance. That is, they are primarily concerned with the recording and reconstruction of dance. Therefore, the scope of notation systems employed and the notation scores produced will be addressed. The role of choreographers, notators, and dancers, all of whom have a significant role to play in the recording and reconstruction process will also be discussed.

2. The notation score

There has been much debate regarding the needs, means, and results of recording and reconstructing movement and dance through a notated script. Beyond being a device to solely record dance, the value of the notation system and score is seen and is recognized as a means of "establishing and preserving the identity of a choreographic work" (Youngerman, 1984, p.101). Cohen (1982) defined the notation score as a "designator of those constituent properties necessary to any realization of a particular work" (p.149). Goodman (1976) supported this claim and added that the primary function of a score is to provide "an authoritative identification of a work, and that it will assist in the recognition of performances which belong to the work and those that do not" (p.127). Van Zile (1984) described the notation score as "an instructional manual" (p.1),

and considered that it might be the "closest ... [thing] ... to a lasting artifact in dance" (p.5).

Even though there appears to be some consensus as to the role of the notation score, there are concerns about the validity of the score, i.e., whether the score can actually and exactly capture the dance. Adshead (1986) stated that "there is a lack of dance artifacts which could be studied and in the lack of general public familiarity with many of its (dance) forms" (p.2). She noted that one of the major reasons why there is little of record of the dance, is the fact "that dance is transient" (p.2). Dance has been explained as "an afterimage" (Croce, 1977, p.9), as "existing at a perpetual vanishing point" (Siegel, 1968, p.1), as "an ephemeral artifact" (Van Zile, 1984, p.86), and as consisting of "virtual powers" (Langer, 1953, p.86). It has been variably described as the "most perishable of the arts", as "essentially of the moment", and "concerned with a single instant" (Cohen, 1982, pp.193-211). De Mille (1990), discussing the choreographer Anthony Tudor, said that " ... his work will last. It's a risky word to use about dancing. Dancing's writ in the air" (Kinberg & Grimm, 1990, Film). It seems from such comments that there is no certainty that a dance work can be grasped. Such definitions and descriptions illustrate one of the major problems encountered when trying to establish a method of documenting dance.

Khatchadourian (1977) criticized definitions which explain dance as consisting "wholly and solely [as] an apparition or perceptual object, an image" (p.25). He argued that a dance work also consists of a series of "physical movements made by ... human bodies" (p.25). A dance work's content becomes known and its artistic merit is judged

through the physical medium, the designs and qualities of the movements, as well as the performance of those movements by the dancer. The role of the dancer as interpreter of the choreographer's intent cannot be ignored. A performance of a work can only be described as an instance of that work, and not as the work itself. If evidence of the work itself can only be provided through the actual medium, that is, the movements themselves, then the role of the notation system and score is clearly confirmed.

However, the dancer's performance has often been the sole basis upon which description and evaluation of a dance work has been made. The critic has concentrated upon the ability and virtuosity of the dancer and has often neglected to mention the content and structure of a dance work. Miller (1987) has identified the process of critical analysis as being: firstly, identifying the component parts of a work; secondly, establishing the essential elements of each part; thirdly, evaluating the components and elements within a work; and, fourthly, communicating the evaluation to an audience. In order to do this the critic must separate the physical details of a dance work from the actual performance. Miller (1987) emphasized that Labanotation has the potential to differentiate the "abstract essence of the dance from its particular performance/s" (p.6). Thus, the use of a notation score by the critic will assist in defining and clarifying the content and structure of a dance work.

The notation score and the performances of it are separate but dependent entities. A performance may occur as a result of the score, and will have a resemblance to it, but each performance will not be the same. This will happen whether there is a score or not. Changes will occur in a dance, either intentionally or accidentally, and for many reasons.

The recording of a work will not prevent this, and neither is it intended to do so. It will provide clear evidence about certain components which should be there, rather then relying upon the choreographer's or dancer's memory.

Armelagos and Sirridge (1978) identified three aspects which can be recorded: (1) the spatial vocabulary, which consists of an "inventory of acceptable positions or position sequences"; (2) the "kinesthetic motivation", which produces the "sense of pattern, the movement flow, the originating impulse, the stresses and transitions" -- named by others as dynamics, effort, energy, or force; and (3) the dancer's "individual manner of execution" (p.131). The detail of such aspects will be recorded according to the purpose of the score. The descriptive score, where each aspect is recorded with precise detail, will provide an historical record of a particular performance of a work. On the other hand, if detail of the actions together with spatial, temporal, and dynamic elements are written, and there are no specific details regarding "manner of execution", a prescriptive score will result.

This discussion directs the question towards the actual treatment of the notation score. On the one hand, the score has been treated as rigidly binding, and on the other hand, as an accepted set of instructions which can be interpreted by the reconstructors and dancers (Cohen, 1982, p.150). The former practice implies that there can be no new interpretations beyond considering the practical problems of restaging and reviving a dance work. The second situation takes into account the individuality and personality of the dancer and allows for individual interpretation by the reconstructor and dancer.

The role of the score is to designate the specific properties of a dance work, that

is, it will contain: information regarding the actions; the spatial, temporal, and dynamic elements of a work. Additional information regarding staging, lighting, set, costumes, previous performances, and dancers is included to provide the complete setting for a work.

As adequate means of recording dance have been variably available to choreographers, it is believed that the essences and styles of many dance forms or particular dance works have been lost. Certain descriptions have been superficial and inadequate for the needs of the choreographer. For instance, Laban (1956) remarked upon the use of words as a means of recording movement and says that "many creations have perished" and thus "we hardly know how the dances of former epochs were presented" (p.25). Specific dance constituents are only partially revealed by general verbal description. It is believed that some esoteric principles of the classical ballet style have been irretrievably lost as a generation did not record the teachings of the great masters. Many folk dances are in great danger of being lost forever because the transmission of the dances has been solely by word of mouth (that is, no permanent records were kept). Ineffective means of passing on the essential foundations of past traditions is often given as the main reason for falling standards, for disinterestedness in the art form, and for eventually and completely losing a style or dance work.

3. Historical overview of notation systems

There is evidence of different methods of movement notation being involved and systematically employed in the recording of dance over the past five centuries

(Hutchinson Guest, 1984). Many dancing masters have designed their own notation systems (for example, Arbeau in 1588) in order to keep a record of their own work and to convey their ideas and dance patterns to their public. As Hutchinson Guest (1984) wrote:

> Centuries ago dances were recorded and published like sheet music, making the latest composition of eminent dance masters available to the educated. (p.42)

The dance score in these cases was for the educated dancing public and, as such, did not always contain every detail of the dance action or style. The dancing master and dancer were aware of the content and style. They would use the score solely as a memory aid or as a shorthand record of a new pattern or a well-known dance.

Not all choreographers were so conscientious. Nor were they able, at times, to protect their ideas and dances. Choreographers such as Petipa (1812-1919) -- a dancer, ballet master, and one of the most famous and productive choreographers of the nineteenth century -- did not record their ballets, but trusted to memory the many ballets they created. Petipa did keep notebooks which included details of, for example, the colours of the flowers the dancers were to carry and which dancer would perform which dance, but rarely information about the actual dance content or structure. This may have been due to changes in the order of the ballet or in step patterns because of practical or budget demands. Changes to the performances due to events such as audience demand to see a ballerina earlier in the ballet, or to character replacement or creation due to injury, are examples of practical demands. Increasing production costs or decreasing resources are examples of budget demand items. Such alterations were often made without

considering the structural entity or content of the dance. It is interesting to note that Petipa made many ballets to the music of Tchaikovsky, and that, whereas the music has been strictly followed, there have been many versions of the actual dance content. In the first case, the music was well documented, whereas there is little information about the actual dancing.

Even today many choreographers do not use a notation system. Although some may not have recognized the value of a notation system, many have felt the need to find a way to record dance. This search has led to the present day situation where some 124 notation systems have been identified. Of these, 53 have been identified as having made a significant contribution to the recording of movement, particularly in the area of dance (Hutchinson Guest, 1984). Most of the references to a notation system are contained within the literature on dance.

Texts devoted to the theory and application of a notation system or systems are a recent development. Most of the early notation systems, and indeed many of the more recent systems, have not spread beyond the circle of persons directly concerned; that is, the dancers or teachers working with the inventor of the notation system. Music notation, which has been in general use by educated musicians for some time, provided an opportunity to exchange ideas about music and encouraged experimentation with melodic and rhythmic structure. In contrast, very few choreographers have recorded their own works or exchanged ideas through the use of a notated score. Early dance notation systems afforded limited possibilities for either innovation or the sharing of ideas. As Chilkovsky Nahumck (1976) stated, notation systems did not explicitly dictate, but

"tended to affirm, define and codify socially acceptable dance behaviour of the feudal elite" (p.32).

Even later, throughout the nineteenth and early twentieth centuries, information regarding many of the ballets was only available through the memories of choreographers and dancers. Notation scores which did exist for any of the major works were simply aids to memory, as the choreographer or repetiteur would already know the work. This has resulted in a lack of dance scores which can be studied or reconstructed. Redfern (1983) indicated that the lack of an adequate notation system "until well into the twentieth century", may also have contributed to the "paucity of information concerning dance works though several ingenious experiments had been tried, some of which provided inspiration for later innovators" (p.16).

From a survey of the development of dance notation systems it has been found that these systems fall into particular classifications (Hutchinson Guest, 1984; Kipling Brown, 1979; White, 1977). These classifications have been formulated according to the type of signs and symbols selected and the processes by which the signs and symbols are used to record movement. The classifications, falling into eight clear areas, have been specified as follows: letters, words, pictures, tracks, music, stick figures, mathematics, and abstracts. There appears to be no chronological patterning to the introduction or development of a particular category. The choice of symbols and the methods of presentation solely reflected the needs of the inventor. Arbeau (1588), Playford (1650), Dufort (1728), Brunet (1839), Menier (1931), and Toth (1952), all inventors of word notation systems, exemplify the fact that a classification of movement has recurred at

several different points in the history of notation systems.

The traditional tools for recording movement -- letters, abbreviations, word notes, stick figure drawings, and photograph -- have left much to be desired. They have often proven to be superficial and inadequate in capturing or describing the dance. Schurman and Leigh Clark (1972) noted this fact in the following statement:

> Because of their very nature they can do only one thing -- describe the design the body makes in space. In other words, they stop the action. Word notes are at best a clumsy translation of lyric expression into pedestrian prose. Such tools therefore cannot describe the elements of speed, duration, accent, flow of energy, and so forth, which are such an important aspect of all movement. (p.vii)

This is a flaw noted by several other writers studying these methods (Cohen, 1982; de Laban, 1946; Hutchinson Guest, 1984; Laban, 1954).

Even so, many notation systems have been employed, but usually for a very short period and often by a very few people. This being so they have nonetheless made some contributions to the history and study of dance. As Hutchinson Guest (1984) noted:

> A historical survey of the development of dance notation systems in the western world reveals incidentally the progression in the development of dance, physically and socially, and the attitude toward the material of dance itself. (p.42)

4. Revivals and reconstructions

Many successful revivals and reconstructions have been made from early notation systems. Terry (1982) described how Anton Dolin managed to capture the essence of the

Romantic style in the revival of "The Dying Swan". A score of this dance existed in the stick figure notation of Arthur Saint-Leon which was first published in 1852. This score provided information regarding the steps and ensemble formations of the dances of that day. Together with lithographs, which illustrated the dress and deportment of the time (and "even the suggestion of the qualities of the movement"), and the descriptions of the critics of the day, it was possible to stage the ballet (p.67). A further example was the revival of the Pas de Six from "La Vivandiere", as it was first performed in Paris in 1848. Hutchinson Guest (1984) translated Saint-Leon's score into Labanotation and then reconstructed the work. It was first danced by the Joffrey II Company and then the main company. More recently, Hutchinson Guest and Jeschke (1989) broke the code of Nijinsky's system, and then translated and reconstructed one of his ballets. Michael (1989) described the inclusion of the ballet in the works of the October, 1989 season of Les Grands Ballets Canadiens. She stated that the performances also "featured a staging of what the company touted as an authentic version of Nijinsky's choreography of "L'Apres-midi d'un Faune" by Debussy (p.38).

It seems that many lost works are reappearing. For instance the following have all been revived: Nijinsky's "Le Sacre du Printemps" (Joffrey Ballet); Massine's "Gaite Parisienne" (American Ballet Theatre) and "Le Beau Danube" (Joffrey Company); and, Nijinska's "Rondo Capricciosco" (Dance Theatre of Harlem) and "Le Train Bleu" (Oakland Ballet) (Garafola, 1990). This interest in the dances of the past is exciting even though their revival is somewhat time consuming. Most of these dances have been recorded from word descriptions, word notes on the musical score, and various

photographs and drawings. The revival of "Le Train Bleu", based on an idea of Jean Cocteau, was made possible because, even though it was "never notated or filmed", there existed "the fullest production records of any Diaghilev-era ballet" (Garafola, 1990). Not only were there Cocteau's four detailed librettos, but also the notes of Diaghilev, his assistant Boris Kochno, and regisseur Serge Grigoriev. These latter notes were made because Cocteau, on seeing a dress rehearsal of the ballet by Nijinska, was "so incensed by what he regarded as a betrayal of his ideas" that he "ordered her to cut some of the dances and substitute pantomime scenes instead" (Garafola, 1990).

It appears that there is a continued need for works from the past to be revived. This interest in our heritage can be seen in the revivals of works of many choreographers, from Petipa to Diaghilev to Balanchine. However, such revivals expose problems for dance regarding the accuracy and authenticity of reconstructed dance works. At best the details for a reconstruction are drawn from word note information about the performers, costumes, staging, and music; but rarely from details of the actual movement content. The notation score can provide an account of the choreographic structure and specific movements of a dance work. Therefore, the documentation of a work needs to include not only such sources as the word notes, music, and photographs, but also information which can be contained within the notated score.

For some time, the professional field of dance and related areas of movement study have recognized the role and practical value of a movement notation system (Clarke and Crisp, 1974; Hutchinson Guest, 1970, 1984; Lange, 1977). It is considered more than a heuristic device or tool for documentation. Notation is a means of capturing and

transferring onto paper, by means of symbols, the expression, the sense, and the purpose of movement. The notation score becomes a visual aid which can facilitate the transposition, comprehension, and composition of movement ideas and content. Youngerman (1984) stated that:

> Notation systems are more than tools for documentation; they are systems of analysis that can be used to illuminate many aspects of the phenomenon of movement. Notation scores embody perceptions of movement. Furthermore, they can provide data, in an unusually revealing form, for research on a variety of topics, including the exploration of the concept of style, of the ways in which movement can be conceptualized, and of the bases for aesthetic evaluations. (p.101)

One of the important functions of a notation system is to provide a record of movement. As Causley (1969) explained it, it is "a common denominator for thinking and communication, independent of any theory, style or technique: in fact it is a 'universal language'" (p.13). Notation systems are being applied and adapted for use in related fields such as anthropology, ethnology, psychology, sport, therapy, and work study.

Three major systems are widely used today: Benesh Movement Notation, Labanotation/Kinetography Laban, and Eshkol-Wachman Movement Notation. Each system demonstrates particular applications in the recording of movement. However, as experts in the varied areas of movement and dance have recognized, the Laban system of notation has made a distinctive and valuable contribution to the study of human movement. It is this system which will be described, discussed, and focused upon in this

research.

5. The Laban system of notation

It has been estimated that the Laban system of notation (called Kinetography Laban and Labanotation), invented by Rudolf Laban (1879-1958), provides "new ways of seeing the human body as an agent of symbolism" (Chilkovsky Nahumck, 1976, p.32). One of the major reasons for this claim is that the Laban system originated as a result of "a much wider search for an understanding of the principles of movement expression, and the value of dance to humanity" (Youngerman, 1984, p.105).

Laban (1956) stated in his text Principles of Movement and Dance Notation that "the inaccessible and valuable content of movement and dance, which cannot be explained in words, needs some form of description" and could only be "based upon the motor facts of bodily action" (p.16). In all of his writings about movement and on the notation system, Laban emphasized that his analysis of bodily actions, in all activities, is based upon the same analysis of movement, that is, on the biomechanical principles of the body, such as pronation, supination, and rotation). It was this principle which provided the common denominator for all of Laban's classification of movement. As Maletic (1987) explained,

> he defined the common denominators of all types of movement, such as behavioral and symbolic, and provided the means of differentiating them through description, classification, and notation. (p.viii)

In order to design his movement notation system Laban studied earlier systems.

He considered the following three approaches to notation: the sign systems (words, letters, numbers); pictorial systems (stick figures); and graphic, abstract systems. Laban (1966) recognized the significance of music notation because, as he noted, it "provides the harmonic relations of sounds, for rhythmic-dynamic sequences, and for expressive execution" (p.8). He was, however, more profoundly influenced by the principles of the French system, Choreographie ou l'art decrire la danse, invented by Beauchamp and published by Feuillet in 1700. Laban derived and developed his system from the following elements of the Feuillet system: the central line which divided the left side of the body from the right; the use of bar lines to indicate time division; the use of particular signs to denote "steps" with direction and some information regarding performance; and the use of signs to indicate arm gestures.

The first mention of Laban's notation system was in the writings of Wigman (1929) and Brandenburg (1917). These writers, amongst others, intimated that Laban began working on his system as early as 1900 in Paris (Maletic, 1987, p.119). Friends and colleagues at that time write that the notation system not only grew out of his personal experience of dance, but also, as Brandenburg (1917) said, "historically from old ballet choreographies, dance music, military tactics, from Delsarte and from modern dance" (Maletic, 1987, p.119). Laban was involved with colleagues and friends in the exploration of two further, major theories connected with the analysis and study of movement. These theories were Choreutics, or Space Harmony (the unity of space and harmony) and Eukinetics, or Effort (the harmonics within kinetic energy). There is no doubt that the theories of harmony dominated the earlier work in Laban's notation system. However, he

later abandoned this relationship and based the system on the basic components of movement.

The selected principles and representational symbologies are also directly related to Laban's intentions and purposes for designing the notation system. He saw the notation system to be useful in certain contexts: most notably in the preservation of dance and in the analysis and composition of dance. These ideas are reflected in the subterms Laban used, in his earlier writings, to describe the notation of movement. "Tanzschrift", or dance-script, a term recognized for many centuries, denotes the documentation and preservation of dance. "Schrifttanz", or script-dance, denotes the use of notation for the analysis and composition of movement. Laban maintained that the "ultimate aim of Kinetography is not dance-script but script-dance", and emphasized this when he named the quarterly magazine Schrifttanz (Maletic, 1987, p.114). This magazine contained the first information published about the development of Laban's system.

Throughout this development, certain universal, analytical criteria were identified. These criteria concerned the anatomical principles of flexion, extension, and rotation; the progression of the body through space; the vertical position of the body; the centre of gravity; and, the three spatial dimensions of up-down, right-left, and forward-backward. The orthography of the system is derived from an understanding of the motor principles of the body (Lange, 1977, p.7). Thus, the major principles of the system and the related representation in the system are as follows. Movement progresses through space rather than through a series of static positions. This is reflected in the use of a continuous, vertical staff. The body is laterally and symmetrically represented in the system by the

central line of the staff dividing the right and left sides of the body. Direction is judged from a vertical constant and the body moves in plastic, three dimensional shapes. This information is conveyed by symbols which contain the information on direction and level. Movement occurs as a temporal sequence with a beginning, middle, and end. This is conveyed by the division of the time line (also identified as the centre line) into units of time and the proportional length of the movement units along the lines. Successive and simultaneous relationships of movement are denoted through the vertical or horizontal placing of the symbols on the staff.

In the same way that a particular word represents a specific part of the spoken language, Labanotation is considered a movement script which is capable of representing specific aspects of movement. Lange (1985) identified Laban's notation as a "movement script which secures the recording of movement progression" and considered the script to be constructed of "a well-thought out basic set of symbols" (p.12-13). Laban's classification of movement and his notation system are considered to offer a precise vocabulary, as well as a means of identifying and recording actions and their combinations. This scheme of analysis "offers us an elaborate and intriguing example of the process that has come to be called concept formation" (Goodman, 1976, p.214). A concept which is essential in the observation and analysis of movement.

Labanotation consists of a representational alphabet of abstract symbols designed to reflect particular movements. These symbols fall into categories, with each member of a category possessing the ability to be freely exchanged for another without any syntactical effect. The symbols found in these categories can be modified as the

complexity and subtlety of the movement demands. A movement or sequence of movements is depicted on a graph and condensed on paper into a relatively small space which can be seen at a glance. Movement is written vertically on a three line staff, the centre line of which denotes both the centre line of the body and the passage of time.

In reference to his choice of symbols, Laban (1954) stated that:

> . . . the motion characters of the script are compounded according to simple orthographical considerations which we have learned to appreciate in the long experience of our experimental notation activity. (p.20)

The shape of the basic symbol indicates action or direction; for example, the basic symbol for direction is modified to specify a particular direction. In Figure 1, the dancer is asked to perform forward  , backward  , sideway  , and diagonal  movements. The shading of the symbol refers to the level of the movement and the notated phrase contains examples of the three levels,  low,  medium, and  high.

The placement of the symbols on the three line staff directs the movement of a specific body part. The staff represents the body, the centre line being the centre line of the body or spine, dividing the right side from the left. Vertical columns on each side of the centre line are used for the main parts of the body. Thus, movement of the legs and feet are written within the three line staff and movements of the torso, arms and head are written outside of the staff. Therefore, in the notated example, the dancer is instructed to begin with arms low to the sides of the body, to then lift them forward low to medium, and finally to a position high above the head and out to the sides at a medium level (bars 1-3).

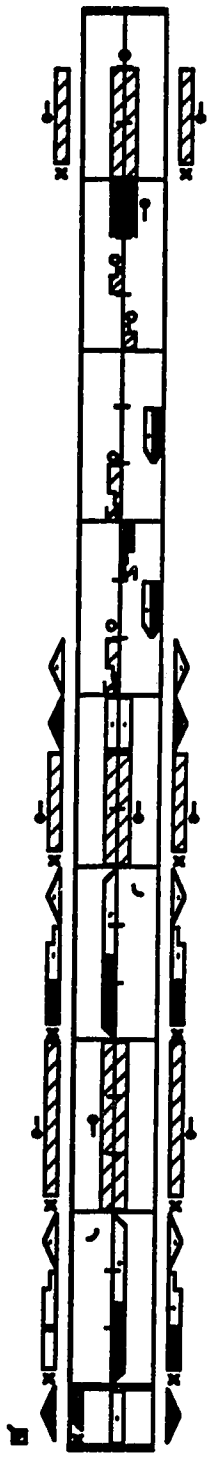

Figure 1. A Notated Example

The staff is read vertically revealing succession in time. The notated phrase involves eight bars in 3/4 time signature. Reading the staff horizontally reveals simultaneous occurring actions; for instance, in bar two, the dancer rises and at the same time lifts the arms and turns the head to the right.

The dynamic content of the action is revealed by the physical proximity of the symbols; for instance, the first four bars contain smoother movements than the second four bars.

Thus the direction, level, timing, and quality of an action or series of actions can be captured within a few symbols. As Youngerman (1984) stated,

> sequencing of movement, the distribution of body weight, the configuration of movement in the body, the relationship between movers, and the orientation of the whole within the performing space can be rapidly grasped. (p.106)

The classification of movement together with the symbology of the system offer a precise vocabulary for the identification and recording of movement. It is recognized that it is based upon a western methodological framework of analysis; that is, it is based upon conceptions and terminology where dance is regarded as actions of the body within accompanying spatial, temporal, and dynamic ranges.

As such, the Laban system of notation has been used primarily to record and reconstruct western theatrical dance. However, there have been successful endeavours to implement the system in additional dance traditions and other movement areas.

6. The applications of Labanotation

There is considerable evidence that Labanotation plays a valuable role in the professional theatre, where "the preservation and reperformance of dance works is a difficult and exigent practical concern (Armelagos and Sirridge, 1978, p.130). The provision of a permanent historical record of a dance work has always been seen as a major function of a notation system. Such historical records provide a dance literature which can be studied and danced. Many more works can be added to a company's repertoire. Even though there are accepted and expected changes from one period to another, the integrity of the original work can be safeguarded.

Some choreographers have been reluctant to have their works recorded, not trusting the notation system to capture the true essence of the dance. Gradually, choreographers are seeing that the notation system is both practical and advantageous in the reconstruction context. For instance, Massine (1895-1979), one of the major choreographers of this century, observed his ballet "Le Tricorne" being taught to the London Festival Ballet from a Labanotation score. The score was subsequently used in the rehearsal of the ballet in Dusseldorf. Hutchinson Guest (1984) recalled the interviews with Massine (1957, 1973) in which he expressed "his amazement at the detailed description in the score in the handling of props and of the quality and dynamics of the movements" (p.77). Hutchinson Guest (1984) continued, "this led him to acknowledge the superiority of the Laban system" (p.77). Examples of choreographers who have had their works recorded in Labanotation are: Balanchine, Cunningham, Graham, Humphrey, Limon, Sokolow, Taylor, and Tudor.

The notation scores, like music scores, are also available to the dance student and provide a means of studying dance. Miles (1960) felt that dancers have been at a "disadvantage as compared with musicians who could learn the history of their art by studying the notated works of its masters" (p.31). Through the use of a notation system, the student is provided with an objective tool to observe and study the essential features of a composition or the stylistic components of a particular work. Hutchinson Guest (1984) considered that "dancers and dance scholars" can become not only better acquainted with choreographic works but they can "also derive greater enjoyment and benefit from seeing performances of them" (p.40).

Teachers, such as Barry (1984), Chilkovsky Nahumck (1980), Intravia (1978), Kipling Brown (1986), Venable (1978), and Van Zile (1984), have described the purposes and successful applications of the system in both the educational and performance contexts. In the educational context, notation is seen as being able to fulfil important goals, including development of an awareness of the elements of movement; expansion of student knowledge and understanding of movement and dance; provision of a means to codify dance; and, provision of a framework for the exploration of movement possibilities. Barry (1984), convinced of the educational values that can be derived from the process of reconstruction, has suggested ideas for incorporating a reconstruction of Doris Humphrey's "Air for the G String" into a dance curriculum. Particular assignments were designed for the following classes: Laban movement analysis; technique; choreography; anatomy; dance history/criticism; art/design; dance production; and music for dance. Tasks from the anatomy class illustrate the scope of this approach:

> Analyze the posture of the dance, looking at the non-vertical alignment, tilted pelvis, and backward arching of the upper body. Study and practice the manner of weight transference required to achieve the quality of the walk. Look at the use of the back of the arms, the amount of turn-out and articulation of the feet. (p.34)

Labanotation has also been applied to other areas of movement study, providing a useful tool for analyzing and collecting data. Research in anthropology, ethnology, and folklore has expanded beyond documentation of the artifacts, study of language and social customs, and anatomical body typing, to now include detailed body movement phenomena. Many research documents have long excluded dance information as there was no means of analyzing and recording observations. Now Labanotation is being used as a tool to describe general movement behaviour and the content and style of dances. For instance, Bartenieff (1980) discussed the work of Kaeppler (1972), who made a structural analysis of Tongan dance by utilizing Labanotation to identify the basic units and motifs in the dances. Bartenieff and Paulay (1965) assisted Lomax in the development of a dance-work rating scale which included the use of Laban's effort analysis and notation. Through Laban's system, they were able to define movement performance features and consequently to cross-culturally differentiate one style of dance from another. Blum (1984), studying the dance of Ghana, recorded "representative dances from as many different groups as possible, both as a record of the tremendous variety which exists and also to find the shared elements that might constitute a West African dance style" (p.1). Blum found that the Labanotation score assisted her in the study of "style with regard to the interaction among dancers, about Body, Space, Rhythmic elements of dance, as well

as those Dynamic aspects that relate to Time" (p.1). Kurath (1960, 1966, 1980) has written extensively in the area of dance ethnology and has used the Laban system of notation consistently in her explanations and descriptions of the movement content.

In the area of sport, notation systems have been devised to record particular moves and strategies within the game. The position of players in a soccer game and the pattern made by swimmers in a synchronized pattern are examples of this usage. Where the efficiency and organization of features within a body action have become the focus some activities, such as in gymnastics, figure skating, swimming, and tennis, coaches and instructors have implemented Labanotation in the analysis and recording of the movement content. Marion (1985), in one such study, recorded the main features of selected Karate moves, such as the "Short One Kata" and the "Kimono Grab".

In clinical settings, Labanotation has been used for physical and mental rehabilitation (Bartenieff, 1972; Siegel, 1968; North, 1972). Bartenieff and Lewis (1980) acknowledged that Laban's vocabulary made it possible to describe many aspects of non-verbal behaviour. As a result, a personal and objective approach to dance therapy, with its own movement terms, evolved. Ryman, Patla, and Calvert (1983) found that the symbolic language of Labanotation provided a "unique solution" to notating the movement characteristics of human gait (p.127). Abbie (1978) found that the system assisted in the treatment of clumsy children. Physiotherapists used the system to not only quickly record the "unusual positions or abnormalities in timing" of a child's performance, but also to present and explain an activity to the children. The latter often resulted in a better performance of the activity (p.112-113).

7. Summary

The first section of this chapter described the role and scope of the notation score and explained the problems encountered in identifying a dance work for the purposes of recording and reconstructing dance. In a brief overview the history and applications of notation systems were discussed. Following this, a description of the principles and symbology of Laban system of notation and finally, the applications of the Laban system of notation, were recorded.

Laban Bibliography

Bartenieff, I. & Hutchinson, A. (1940). A tribute to Rudolf Laban. Dance Observer. 145.

Bartenieff, I. & Paulay F. (1968). Choreometric profiles. Folk song and culture by A Lomax. Washington: American Association for the Advancement of Science.

Bartenieff, I. (1972). The root of Laban theory: aesthetics and beyond. Four adaptations of effort theory in research and teaching dance. New York: Dance Notation Bureau Publications.

Bartenieff, I. & Lewis, D. (1980) Body movement: coping with the environment. New York: Gordon & Breach Science Publishers.

Bodmer, S. & Ullmann, L. (1982). The Laban lecture. Movement & Dance Magazine of the Laban Guild. No.68. May. pp. 5-9.

Copra, F. (1982). The turning point. New York: Simon & Schuster.

Curl, G. (1966). Philosophic foundations (Part 1). Laban Art of Movement Guild Magazine.37. pp. 7-15.

Curl, G. (1966). Philosophic foundations. (Part 2). Laban Art of Movement Guild Magazine. 38. pp. 7-17.

Curl, G. (1966). Philosphic foundations. (Part 3). Laban Art of Movement Guild Magazine. 39. pp. 25-34.

Curl, G. (1966). Philosophic foundations. (Part 4). Laban Art of Movement Guild Magazine. 40. pp.27-37.

Curl, G. (1966). Philosophic foundations. (Part 5). Laban Art of Movement Guild Magazine. 41. pp.23-29.

Curl, G, (1966). Philosophic foundations. (Part 6). Laban Art of Movement Guild Magazine. 43. pp.27-44.

Davis, M. (1975). Towards understanding the intrinsic in body movement. New York: Arno Press.

Dell, C. (1970). A primer for movement description. New York: Dance Notation Bureau, Inc.

Dewey, R.M. (1961). The significance of Rudolf Laban's Studies in Human Movement. Laban Art of Movement Guild Magazine. 26. pp.25-31.

Dunn, M. (1982). The Laban Lecture: Sylvia Bodmer and Lisa Ullmann. Laban Art of

Movement Guild Magazine. 68. pp.5-9.

Francis, N.R. (1979). The use of Laban's analysis in the correlation of creative dance with other art forms. Journal of Canadian Association of Health. Physical Education & Recreation. Vol. 46. No.1. pp.31-33.

Foster, J. (1975). Architecture and freemasonary - elements of Laban's ideological depth. Laban Art of Movement Guild Magazine. 55. November. pp.18-23.

Foster, J. (1977). The influences of Rudolf Laban. London: Lepus Books.

Gaumer, D. (1971). Laban. His contribution to the world of movement. Focus on Dance II. Bette Jane Wooton (ed). National Section on Dance.

Gleisner, M. (1980). Conversations between Laban and myself in 1926. Laban Art of Movement Guild Magazine. 65. pp.16-19.

Holbrook, J. (1983). Laban, Wagner and the Gesamtkunstwerk. Movement and Dance. Magazine of the Laban Guild. Vol.7. pp.17-23.

Johnstone, J. (1977). The influence of Rudolf Laban on physical education. Paper presented at the VIth International H.I.S.P.A. Congress.

Jooss, K. (1939). Rudolf Von Laban on his 60th birthday. Dancing Times. pp.129-131.

Jordan, D. (1969). Rudolf Laban - teacher. Laban Art of Movement Guild Magazine. 42. pp.9-12.

Johnstone, J. (1977). The influence of Rudolf Laban on developments in British physical education. Paper presented at the VIth International H.I.S.P.A. Congress.

Kennedy, D. (1966). Laban lecture: roots of artistic expression. Laban Art of Guild Magazine. 36. pp.55-56.

Knust, A. (1958) The roots of Laban notation. Dance Notation Record: Rudolf Laban Memorial Issue. Vol. IX.

Knust, A. (1976). History of Laban. Unpublished manuscript.

Knust, A. (1979). Dictionary of Kinetography Laban (Labanotation). Vol. I 7 II. London: Macdonald and Evans.

Kraus, R. & Chapman, S. (1981). History of dance as art and education. New Jersey: Prentice-Hall.

Laban, R. & Lawrence, F.C. (1947). Effort. London: Macdonald & Evans.

Laban, R. (1948). Modern educational dance. London: Macdonald & Evans.

Laban, R. (1955). The three r's of the art of movement. Laban Art of Guild Magazine. 14. pp. 13-17.

Laban, R. (1956). Principles of dance and movement notation. London: Macdonald & Evans.

Laban, R. (1957). The objective assessment of subjective movement and action. Laban Art of Movement Guild Magazine. 57. pp.12-16.

Laban, R. (1958). The world of rhythm and harmony. Laban Art of Movement Guild Magazine. 20. pp.6-9.

Laban, R. (1959, 1960). The rhythm of effort and recovery. Parts I & II. Laban Art of Movement Guild Magazine. 23 & 24. pp.18-23, 12-18.

Laban, R. (1960). Light-Darkness. Laban Art of Movement Guild Magazine. 25. pp.13-17.

Laban, R. (1960). The mastery of movement. (2nd ed.) Lisa Ullmann (ed.) London: Macdonald & Evans, Ltd.

Laban, R. (1961). Dance in general. Laban Art of Movement Guild Magazine. 26. pp. 11-24.

Laban, R. (1963). Modern educational dance. (2nd ed. rev.). New York: Praeger.

Laban, R. (1966). Choreutics. Annotated and edited by Lisa Ullmann. London: Macdonald & Evans.

Laban, R. (1971). The mastery of movement on stage. (3rd ed. rev.). Lisa Ullmann (ed.). Boston: Plays.

Laban, R. (1974). Extract from an address held by Mr. Laban at a meeting for community-dance in 1936. Laban Art of Movement Guild Magazine. 52. pp.6-11.

Laban, R. (1974). Effort. economy of human movement. (2nd ed.). London: Macdonald & Evans.

Laban, R. (1974). A life for dance: reminiscences. London: Macdonald & Evans.

Laban, R. (1980). The mastery of movement on stage. Lisa Ullmann. (4th ed.rev.). London: Macdonald & Evans.

Laban, R. (1984). A vision of dynamic space. London Laban Archives, in association with the Falmer Press.

Lamb, W. (1965). Posture and gesture: an introduction to the study of physical behaviour. London: Duckworth & Co.

Lange, R. (1969). Philosophic foundations and Laban's theory of movement. Laban Art of Movement Guild Magazine. 43. pp. 9-16.

Lawrence, F.C. (1959) Your move - my move. Laban Art of Movement Guild Magazine. 23. pp.24-26.

Leiper, J.M. (1977). The influence of British "movement education" on Canadian school physical education. Paper presented at the VIth International H.I.S.P.A. Congress.

Maletic, V. (1987). Body-space-expression. The development of Rudolf Laban's movement and dance concepts. Berlin: Mouton de Gruyter.

Mauldon, E. (1975). Oskar Sclemmer - Rudolf Laban. Similarities and Contrasts. Laban Art of Movement Guild Magazine. 54. pp.7-17.

North, M. (1959). A simple guide to movement teaching. London: Marion North.

North, M. (1961). Composing movement sequences. London: Marion North.

North, M. (1972). Personality assessment through movement. London: Macdonald and Evans.

Partsch-Bergsohn, I. (1986). Rudolf Laban: Magician/Scientist. Dance Theatre Journal. Vol.4. No.3. pp.15,16,25,26,27,33.

Partsch-Bergsohn, I. (1987). Dance theatre from Rudolf Laban to Pina Bausch. Dance Theatre Journal. Vol. 6. No. 2. pp.34-36.

Preston-Dunlop, V. (1980). A handbook for dance in education. (2nd ed). London: Macdonald & Evans.

Preston-Dunlop, V. (1988). Laban and the Nazis. Dance Theatre Journal. Vol. 6. No. 2. pp.4-8.

Preston-Dunlop, V. & Purkis, C. (1989). Rudolf Laban. The making of modern dance. The seminal years in Munich. Parts I & II. Dance Theatre Journal. Vol. 7. No. 3. pp.11-26. Vol. 7. No. 4. pp.10-13.

Proyer, V. A. (1973). Laban - used, miused, confused and abused. Journal of the Association of Health, Physical Education & Recreation. pp.4-12.

Ramsden, P. (1973). Top team planning. A study of the power individual motivation in management. London: Associated Business Programmes Ltd.

Redfern, H.B. (1965). Introducing Laban art of movement. London: Macdonald & Evans.

Redfern, B. (1976). Rudolf Laban and the aesthetics of dance. British Journal of Aesthetics. 16. pp.61-67.

Redfern, H.B. (1982). Concepts in modern educational dance. (2nd ed.). Kimpton, London.

Salter, A. (1979). An art of movement. Laban Centenary Symposium Report.

Salter, A. (1984). Movement and mind. Movement and Dance: Magazine of the Laban Guild. No.73.

Saxe, F. (1940). Rudolf Von Laban. Dance Observer. Vol.7 No.8. pp. 115-117.

Thornton, S. (1971). A movement perspective of Rudolf Laban. London: Macdonald & Evans.

Tolley, J. (1982). Effort analysis and "The Tempest". Movement and Dance: Magazine of the Laban Guild. 69. pp.35-51.

Ullmann, L. (1969). Laban's concepts of movement. Report of the 6th Conference of the International Council of Kinetography Laban.

Ullmann, L. (1971). Some preparatory stages for the study of space harmony in the art of movement. A reprint of six articles. Laban Art of Movement Guild Magazine. 1952-1955.

Ullmann, L. (1975). Architecture and Freemasonary - elements of Laban's ideological debt. Laban Art of Guild Magazine. 55. pp.18-43.

Wigman, M. (1954). My teacher Laban. Laban Art of Movement Guild Magazine Special Birthday Number. pp.5-28.

Wooten, B. J. (ed.). (1971). Laban. His contribution to the world of movement. Focus on Dance II. National Section on Dance.

Movement and Dance Study Bibliography

Babbie, E. (1989). Social research. (5th ed.). Belmont, Ca: Wadsworth Publishing Company.

Bartenieff, I. & Lewis, D. (1980). Body movement. Coping with the environment. New York: Gordon and Breach Science Publishers.

Bodmer, S. (1983). Harmonies in space. Movement & Dance Magazine of the Laban Guild. No. 71. November. pp. 10-18.

Boorman. J. (1974). Our non-verbal selves. Katimavok. Vol. 1. No. 3. Summer.

Broer, M. R. (1966). Efficiency of human movement. (2nd. ed.). Philadelphia: W.B. Saunders Company.

Cameron, H. & Kendall, D. (1986). Kinetic sensory studies: a movement program for children.

Craft, A.H. (1977). The teaching of skills for the observation of movement: Inquiry into a model. Report of a study directed by Dr. Kate R. Barrett. pp.207 ff.

Cheney, G. & Strader, J. (1969). Modern dance. Boston: Allyn & Bacon.

Cohen, R. (1986). The dance workshop. A guide to fundamentals of movement. New York: Simon & Schuster.

Clarkson, P. M. & Skrinar, M. (1988). Science of dance training. Illinois: Human Kinetics Publishers.

Deci, E.L., Spiegel, N.H., Ryan, R.M. Koestner, R., Kauffman. (1982). Effects of performance standards on teaching styles: behaviour of controlling teachers. Journal of Educational Psychology. Vol. 74. No.6. pp.852-859.

Davis, M. (1975). Towards and understanding of the intrinsic in body movement. New York: Arno Press.

Docherty, D. & Van Gyn, G. H. (1985). Skill acquisition and creative dance. A conflict in goals. Runner. Vol. XXIII. No. 4. pp.23-27.

Fortin, S. (1988). Feedback as perceived by experiences students in modern dance. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.57-67.

Foster, R. (1960). The analysis of movement - a current conception and the reasons for it. Laban Art of Movement Guild Magazine. No. 25. November. pp. 23-29.

Goddard, J. (1988). Liason: an approach to dance coaching through Laban movement analysis

and Bartenieff fundamentals. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance conference. Toronto, Canada. pp. 89-95.

H'Doubler, M. N. (1946). Movement and its rhythmic structure. Wisconsin: Kramer Business Service.

Henney, L.M. (1986). Theory and practice of visual sociology. The Journal of the International Sociological Associ[illegible] 34. No. 3. Sage Publications.

Holmes, O. (1982). Motion [illegible]dance reviews of H.T. Parker. Connecticut: Wesleyan University Press.

Hutchinson Guest, A. (1983). The language of dance. Movement & Dance: Magazine of the Laban Guild. No. 70. May. pp. 9-15.

Irey, C. (1973). (ed.). Research in dance. II. The American Association for Health, Physical Education and Recreation.

Jacobs W. J., Blackburn, J. R., Buttrick, M., Harpur, T. J., Kennedy, D., Mana, M. J., MacDonald, M. A., McPherson, L. M., Paul, D., & Pfaus, J. G. (1987). Observations. Paper submitted to Behavioural and Brain sciences.

Jowitt, D. (1985). The dance. Profiles and reviews, 1976-83. Boston: David R. Godine.

Kalish, B. (1971). A study of non verbal interaction in the classroom. Monograph. No. 1. pp.16-36.

Kirby, M. (1980). Dance/movement. The Drama Review. 24. pp.2-102.

Kleinman, S. (1984). The significance of human movement: a phenomenological approach. Sport & the Body: A Philosophical Symposium.

Laws, K. (1984). The physics of dance. New York: A Division of Macmillan.

Leigh Foster, S. (1986). Reading dancing: bodies and subjects in contemporary American dance. California: University of California Press.

Lewis, D. (1984). The illustrated dance technique of Jose Limon. New York: Harper & Row Publishers.

Lindley, S. & Crisp, F. (1987). Motor versus recall of ballet sequences by young expert dancers. Journal of Sport Psychology. 9. pp.231-248.

Macauley, A. (1987). Classicism. Dance Theatre Journal. Vol. 5. No. 2. Summer.

Macduff, N.C. (1972). Effects of music and rhythm on the biomechanics of a specific dance movement. Unpublished master's thesis in Physical Education: Pennsylvania State University.

McCall, G.J. & Simmons, J.L. (1969). The nature of participant observation. In Issues in Participant Observation: A Text and Reader. Addison-Wesley Publishing Co. pp.1-27.

Melcer F.H. (1968). (ed.). Research in dance. I. The American Association for Health, Physical Education & Recreation.

Miller, G. (1987). The notion of critical analysis. Dance Notation Journal. Vol. 5. No. 1. pp.5-10.

Messick, S. (1988). The once and future issues of valididty: Assessing the meaning and consequences of measurement. In H. Wainer & H. I. Braun (Eds.), Test Validity. Hillsdale, NJ: Erlbaum.

Patla, A.E. & Clouse, S.D. (1987). Visual assessment of human gait: reliability and validity. Manuscript submitted for publication.

Peterson, D. Lapenskie, G. & Taylor, A. W. (eds.). (1985). The medical aspects of dance. Proceedings of a Conference held May 23-25, 1985 at the University of western Ontario, London, Canada.

Peterson Royce, A. (1984). Movement and meaning, creativity and interpretation in ballet. Bloomington: Indiana University Press.

Petrakis, E. (1987). Analysis of visual search patterns of dance teachers. Journal of Teaching in Physical Education. 6. pp.149-156.

Reeve, T.G. & Mainor, R. (1983). Effects of movement context on the encoding of kinesthetic spatial information. Research Quarterly for Exercise and Sport. Vol. 54. No. 4. pp.352-363.

Sanchez-Colberg, A.R. (1988). Stle and the dance: classification of the concept of style as applied to dance and a methodology for its research. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance. Toronto, Canada. pp.149-160.

Sanderson, P. (1988). A methodology for the measurement of attitudes to dance. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.161-165.

Shell, C. G. (ed.). (1984). The dancer as athlete. 1984 Olympic Scientific Congress proceedings. Vol. 8.

Schick, J., Strover, L.J. & Jette, N. (1983). Relationship between modern-dance experience and balancing performance. Research Quarterly for Exercise and Sport. 54 (1). pp.79-82.

Siegel, M. B. (1968). E/S and the therapeutic community. Dance Magazine. June. pp. 56-59, 71-73.

Siegel, M. B. (1972). At the vanishing point. A critic looks at dance. New York: Saturday Review Press.

Smith, M.F.R. (1978). An observational system for the analysis of coaching behavior. Research Project No. 125 submitted to Health and Welfare Canada Fitness and Amateur Sport Branch.

Siegel, M. B. (1979). The shapes of change. New York: Avon Books.

Stodette, E. (1978). The dance technique of Doris Humphrey and its creative potential. New Jersey: Princeton Book Company.

Toole, T. & Arink, E.A. (1982). Movement education: its effect on motorskill performance. Research Quarterly for Exercise and Sport. Vol. 53. No. 2. pp.156-162.

Van Den Berg, J. H. (1962). The human body and the significance of human movement. In H. M. Rintenbeek (ed.) Psychoanalysis & Existential Philosophy. New York: F. P. Dutton. pp.90-129.

Watkins, J. (1987). Qualitative movement analysis. The British Journal of Physical Education. Vol.18. No.4. July/August. pp.177-179.

Weiss, M.R. & Klint, K.A. (1987). "Show and tell" in the gymnasium: an investigation of developmental differences in modeling and verbal rehearsal of motor skills. Research Quarterly for Exercise and Sport. Vol. 58. No. 2. pp.234-241.

Youngerman, S. (1978). The translation of a culture into choreography: a study of Doris Humphrey's The Shakers based on Labananalysis. In D. Woodruff (ed.) Essays in Dance Research. Dance Research Annual IX.

Music Bibliography

Bartok, B. (1976). Why and how do we collect folk music? Benjamin Suchoff. (ed.). Bela Bartok Essays. London: Faber and Faber. pp.9-24.

Becker, J. (1979). Time and tune in Java. In A. Becker (ed.). The Imagination of Reality. New Jersey: Ablex. pp.197-210.

Behague, G. (ed.). Introduction. Performance Practice Ethnomusicological Perspectives. Westport: Greenwood Press. pp.3-12.

Cachia, P. (1973). A 19th century Arab's observation in European music. Ethnomusicology. 17(1). pp.41-51.

Clunies Ross, M. & Wild, S.A. (1984). Formal performance: the relations of music, text and dance in Arnheim Land Clan Songs. Ethnomusicology. XXVIII (2). pp.209-236.

Cone, E.T. (1968). Musical form and musical performance. New York: W.W. Norton.

Cone, E.T. (1974). Utterance and gesture. In The Composer's Voice. Berkeley: University of Californai Press. pp.136-157.

Cone, E.T. (1974). Further paths to identification. In The Composer's Voice. Berkeley: University of California Press. pp.176-184.

Cone, E.T. (1974). Text and texture: song and performance. In The Composer's Voice. Berkeley: University of California Press.

Dipert, R.R. (1980). The composer's intentions: an examination of their relevance for performance. Musical Quarterly. 66. pp.205-218.

Feld, S. (1984). Communication, music and speech about music. Yearbook for Traditional Music. 16.

Elias, W.Y. (1984). Music notation. Do signs and symbols convey the musical message as language does? Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Greene, G.K. (1974). For whom and why does the composer prepare a score. Journal of Aesthetics and Art Criticism. Vol.32. pp.503-507.

Kirkendale, U. (1980). The source of Bach's musical offering. Journal of the American Musicological Society. XXXIII (1). Spring. pp.88-141.

Malm, W. (1971). Practical approaches to Japanese music. In D.P. McAllester (ed.). Readings in Ethnomusicology. New York: Johnson Reprint Corp. pp.353-365.

Mark, T.C. (1981). Philosophy of piano playing: reflections on the concept of performance. Philosophy and Phenomenological Research. 41. No.3. pp.299-324.

Mcleod, N. & Herndon, M. (eds.). (1980). The ethnography of musical performance. Norwood, Pa:

Merriam, A.P. (1964). The anthropology of music. Evanston: Northwestern University Press. Ch. 2. pp.17-35.

Nettl, B. (1984). A discussion of the ethno-concept. In Ashok Ranada et al (eds.). Documentation and Archiving in Ethnomusicology: Working Papers from Seminar and Workshop. Pune. September 24-30. Delhi: American Institute of Indian Studies, Archives Research Centre. pp.1-12.

Palisca, C. (1982). Reflections on musical scholarship in the 1960's. Musicology in the 1980's. Methods. Goals. Opportunities. New York: Da Capo Press.

Powers, H.S. (1977). The structure of musical meaning: a view from Benares. Perspectives of New Music. 14 (2). pp.308-334.

Qureshi, R. B. (1987). Musical sound and contextual imput. A performance model for musical analysis. Ethnomusicology. 31 (1). pp.56-86.

Schneider, R. (1969). Essays on performance theory. 1970 - 76. In Drama, script, Theatre and Performance. New York: Drama Book Specialists. pp.36-62.

Seeger, C. (1958). Prescriptive and descriptive music-writing. Musical Quarterly. 44. pp.184.

Treitler, L. (1986). Orality and literacy in the music of the European Middle Ages. In Y. Tokumarn & O. Yamaguti (eds.). The Oral and the Literate in Music. Tokyo: Academia Music Ltd. pp.38-56.

Wadley, S.S. (1984). Ethnomusicology and the anthropologist in the field. In Ashok Ranada et al (eds.). Documentation and Archiving in Ethnomusicology: Working Papers from Seminar and Workshop. Pune. September 24-30, Delhi: American Institute of Indian Studies, Archives Research Centre. pp.142-153.

Notation Bibliography

Abbie, M. (1978). Laban notation, and its application to treating clumsy children. Developmental Medicine and Child Neurology. Vol.20. pp.110-114.

Andrews, C.B. (1976). A comparative study of videotape and Labanotation as learning tools for modern dance. George Washington University. Physical Education Topical Studies. 9. July.

Ashford, V. (1984). The use of Benesh Movement Notation in clinical work with handicapped children. Paper presented at the International Congress on Movement Notation. Tel Aviv, Israel.

Archbutt, S. (1981). Major dance notation systems: implications for art, education, and research. Unpublished masters thesis, University of London, Institute of Education.

Backer, M. (1976). Toward a realisation of eighteenth century dance. Dance Studies. Vol. 1. Centre for Dance Studies. pp.74-75.

Balanchine. G. (1950). Recording the ballet. Dance Observer. November.

Barracuda, K. (1988). Using Labanotation to record ideokinetic movement sequences. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.29-37.

Barry, T. (1984). Now you see it: reconstructing dance within college/university dance curricula. Dance Notation Journal. Vol. 2. No. 2. Spring. pp.32-39.

Bartenieff, I. (1956). Feuillet's L'art de decrire. Dance Notation Record. Vol. VII. No. 5-6. pp.2-9.

Bartenieff, I., Hackney, P., True Jones, B., Van Zile, J. & Wolz, C. (1984). The potential of movement analysis as a research tool: a preliminary analysis. Dance Research Journal. 16/1. Spring. pp.3-26.

Bauer, L. (1948). Movement notation. Movement. Vol.1 No.1. Special Notation Number. Summer. pp.19-21.

Becker, S. & Roberts, J. (1983). A reaffirmation of the Humphrey-Weidman quality. Dance Notation Journal. Vol. 1. No. 1. pp.3-17.

Berger, M. (1984). Body image and movement notation (Eshkol-Wachman). Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Birdwhistle, R. L. (1970). Kinesics and context. Philadelphia: University of Pennsylvania Press.

Bissell, R. (1983). Rooms: an analysis. Dance Notation Journal. Vol. 1. No. 1. pp.18-34.

Blum, O. (1973). Dance in Ghana. Dance perspectives. 56. pp.1-57.

Blur. O. (1984). An initial investigation into Ghanaian dance in order to ascertain aspects of style particular emphasis on the dynamic phrase. Paper presented at the International Congress on Movement Notation. Tel Aviv, Israel.

Booker, K. (1987). A comparative study of the accuracy of the Benesh Movement Notation versus written verbal descriptions for the purpose of reconstruction. Unpublished abstract, University of Waterloo.

Calouste Gulbenkian Foundation. (1980). Dance education and training in Britain. London: Calouste Gulbenkian Foundation.

Calvert, T.W. Landis, J.A. & Chapman, J. (1979). Notation of dance with computor assistance. In D.T. Taplin (ed.). New Directions in Dance. Canada: Pergamon Press.

Calvert, T.W., Lee, C., Gaudet, S. & Welman, C. (1987). Compose: a system for the interactive composition of dance. Simon Fraser Research Group Working Paper WP87-1. September.

Causley, M. A. (1969). Language for movement. Laban Art of Movement Guild Magazine. pp. 12-27.

Challet-Haas, J. (1976). An investigation into the basic structure of classical ballet technique. Dance Studies. Vol. 1. Centre for Dance Studies. pp. 76-82.

Challet-Haas, J. (1989). Analytical approaches. European Seminar for Kinetography. Paper No. 2.

Chilkovsky Nahumck, N. (1958). Labanotation for ethnomusicologists. Laban Art of Movement Guild Magazine. 22. November. pp. 34-38.

Chilkovsky Nahumck, N. (1980). Dance curriculum resource guide. American Dance Guild.

Clarke, M. & Clement, C. (1974). Choreography: making a ballet. Cassel and Collier, Macmillan Publisher's.

Cobain, B. (1981). Movement notation systems. London: Language of Dance Centre.

Cohen, L. R. (1978). Introduction to Labananalysis: effort/shape Labananalysis as a reseearch tool. Dance Research Annual IX. pp.53-58.

Cohen, L. R. (1978). Labanalysis for the social scientist with a general systems perspective: Labananalysis as a research tool. Dance Research Annual IX. pp. 53-58.

Cohen, S. J. (1960). Notation anyone? Dance Notation Bureau celebrates its 20th anniversary. Dance Magazine. pp. 44-45,61.

Cohen, S. J. (1979). Bournonville and the question of preservation. Dance Magazine. pp. 77-78.

Cohen, S.J. (1982). Next week, Swan Lake. Reflections on dance and dances. Connecticut: Wesleyan University Press.

Constitution. (1983). International Council of Kinetography Laban.

Cook, R. (1977). A handbook for the dance director. New York: Author.

Coton, A. V. (1968). Some thoughts on notation. Dancing Times.

Coton, A.V. (1968). Notation: a summing up. London: Dancing Times. September.

Cuncliffe, E. (1986). Notating Van Manen's choreography: distinctive features. In J. Adshead (ed.) Choreography Principles & Practice. Study of Dance Conference 4. University of Surrey. pp.127-138.

Curl, G. (1966). An enquiry into movement notation. Part 1. Chelsea College of Education.

Czompo, A. I. (1978). Dance: an illiterate art? Journal of the American Association of Health, Physical Education and Recreation. pp.109-111.

Doris, V. (1988-89). A notator's view. Dance Notation Journal. Winter/Spring. pp.6-13.

Drabecka, M. (1976). A comparative study of the Cinque Passi - the basic step of the Galliard. Dance Studies. Vol. 1. Centre for Dance Studies. pp. 65-73.

Dunin, E.I. (1984). Perception and responsibility of dance in social contexts. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Elias, W.T. (1984). Music notation. Do signs and symbols convey the musical message as a language does? Paper presented at the International Congress on Movement Notation. Tel Aviv, Israel.

Flatt, R. B. (1981). A tribute to Juana de Laban. 1910-1978. Dance Research Journal. 13/2. pp.3-11.

Fox, I. (1988). Notating a Chinese classical dance syllabus. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.76-82.

Francis, N.R. (1979). The use of Laban's analysis in the correlation of creative dance with other art forms. Journal of the Canadian Association of Health, Physical Education and Recreation. September/October. pp.31-33.

Garafola, L. (1990). Reconstructing the past: tracking down Le train Bleu. Dance Magazine. April. pp.40-44.

Garske, R. (1985). Movement notation. The first international congress on movement notation, Israel. Ballet International. Vol.8/8. Jahrg. No.2. pp.12-15.

Gellerman, J. (1978). The Mayim pattern as an indicator of cultural attitudes in three American Hasidio communities. A comparative approach based on Labananalysis. Essays in Dance Research. Dance research Annual IX. pp.111-144.

Glaister, I.K. (1979). (ed.). Observation, analysis and recording movement. Report of the N.A.T F.H.E. Physical Education Section 1979 Annual Conference held at Chester College, Chester.

Golani, I. & Eilas, D. (1984). Analysis of animal behaviour using Eskhol-Wachman Movement Notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Goodman, N. (1976). The theory of notation. In N. Goodman. Languages of Art: An Approach to a Theory of Symbols. Indianapolis: Hackett Publishing Company, Inc.

Goodman, N. (1976). Score, sketch, and script. In N. Goodman Languages of Art: An Approach to a Theory of Symbols. Indianapolis: Hackett Publishing Company, Inc.

Gray, J.A. (1983). Computors and dance. Journal of Physical Education, Recreation, and Dance. November/December. pp.33.

Gregory, R. W. (1977). Formulation of charted space-time-quality verablisations in the study of human movement. Microfilm 0256-258.

Hall, F. (1964). Dance notation and choreography. British Journal of Aesthetics. 4 (1). pp.58-64.

Harries, J. G. (1984). Eshkol-Wachman movement notation and kinetic art. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Herbison-Evans, D. (1979). A human movement language for computor animation. Proceedings of the Symposium on Language and Programming Methodology. Sydney. 10-11 September. pp.117-128.

Herbison-Evans, D. (1982). Real-time animation of human figure drawings with hidden lines omitted. Computor Graphics. Index. - Vol.2. November. pp.27-33.

Hering, D. (Ed.). (1954). Meet John Martin (November, 1952). Twenty-five years of American dance. Dance Magazine. pp.206.

Hering, D. (Ed.). (1954). Dance notation. Twenty-five years of American dance. Dance Magazine. pp.197.

Hering, D. (Ed.). (1954). Three more years (1951). Twenty-five years of American dance. Dance Magazine. pp.200.

Hetz, A. (1984). Leonardo's movement studies and Eshkol-Wachman notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Hilton, W. (1981). Dance of court and theatre: the French noble style. U.S.A.: Princeton Books.

Hoff, F. (1977). Dance to song in Japan, Dance research Journal. Vol. IX/2. pp.1-15.

Hoff, F. (1977). Dance notation preserverd at Motsuji. An addendum to "Dance to song in Japan". Dance Notation Journal. Vol. IX/2. pp.1-12.

Horton, M. & McGuiness, J. (1975). Movement notations and the recording of normal and abnormal movements. In K.S. Holt (ed.). Movement and Child Development. Philadelphia: William Heinemann Medical Books Ltd.

Horwitz, D. L. (1988-1989). Victoria Simon on Balanchine and notation. Dance Notation Journal. Vol. 6. Winter/Spring. pp.3-5.

Hoyman, A. S. (1984). Utilisation of a computor-based system in the teaching of movement notation. Paper presented at the International Congress of Movement Notation, Tel Aviv, Israel.

Hutchinson, A. (1966). The preservation of the dance score through notation. In W Sorrell (ed). The Dance Has Many Faces. New York: Columbia University Press.

Hutchinson, A. (1966, 1967). A survey of dance notation systems. Part I & II. Laban Art of Guild Magazine. No.37 & 38. pp.20-29, 25-38.

Hutchinson Guest, A. (1970). Dance notation: A controvesy. Dance Scope. 5 (1). pp.39-55.

Hutchinson Guest, A. (1970). Labanotation. The system of analyzing and recording movement. (2nd ed). New York: Theatre Arts Books.

Hutchinson Guest, A. (1975). The recording of movement. In G. Curl (ed.). Human Movement Behaviour Report. Association of Principals at Women's Colleges of Physical Education.

Hutchinson Guest, A. (1983). Your move. A new approach to the study of movement and dance. New York: Gordon and Breach Science Publishers.

Hutchinson Guest, A. (1984). Dance notation. The process of recording movement on paper. London: Dance Books, Ltd.

Hutchinson, A. (1984). Notation congress. Dance Magazine. pp.47.

Intravia, T. (1978). Notation of movement as a teaching aid. Journal of the American Association of Health, Physical Education & Recreation. pp.107-108.

Jordan, S. (1981-1982). Using the Humphrey scores. Issues in Labanalysis research. Dance Notation Journal. 14/1&2. pp.51-54.

Kaeppler, A.L. (1972). Method and theory of analyzing dance structure with an analysis of Tongan dance. Ethnomusicology. Vol. 16. No. 2. pp.173-217.

Kagan, E. (1978). Towards the analysis of a score. A comparative study of Three Epitaphs by Paul Taylor & Water Study by Doris Humphrey. Essays in Dance Research. Dance Research Annual. IX. pp.75-92.

Kando, J. (1986). Notation and theory for the new dancer. pp.16-17.

Kipling Brown, A. (1979). An historical survey of notation systems and the categpries into which they fall. Unpublished paper. University of London.

Kipling Brown, A. (1986). Movement notation in children's dance. Unpublished master's thesis. University of Alberta.

Kipling Brown, A. (1987). Motif design and creative dance: designing a teaching programme for children. Action! Recording! Issues, 47 & 48. pp. 2-3 & 3-4.

Kipling Brown, A. (1989). The Laban system of notation: implications for the dance teacher. The Journal of the Canadian Association of Health, Physical Education & recreation. Special Dance Edition. July/August. pp.14-18.

Kirsten, L. (1969). A short history of classical theatrical dancing. New York: Dance Horizons.

Kisabeth, K.L. (1980). A child's movement performance using Labanotation and reference to Laban framework. A case study. Disseertation: University of North Carolina at Greensboro.

Kleinman, S. (1975). Movement notation systems: The language of movement Benesh. Quest Monograph. 23, pp. 33-56.

Knust, A. (1948). The development of Kinetography Laban. Movement. Vol. 1. No. 1.

Summer.

Knust, A. (1979). Dictionary of Kinetography Laban (Labanotation). (2 Vols.). London: Macdonald and Evans.

Kraus, R. & Chapman, S. (1981). History of dance as art and education. (2nd ed.) New Jersey: Prentice-Hall.

Kurath, G. P. (1986). Half a century of dance research. Flagstaff: Arizona Cross-Cultural Dance Resources.

Kurath, G.P. (1960). Panorama of dance ethnology. Current Anthropology. Vol.1. No.3. May.

Kurath, G.P. & Chilkovsky, N. (1986). Jazz choreology. In G.P. Kurath Half A Century of Dance Research. Flagstff: Arizona Cross-Cultural Dance resources. pp.104-113.

Laban, J. de. (1946) Dance notation. In M. Eames (ed.). Dance Index. pp.85-132.

Laban, J. de. (1954). Movement notation: its significance to the folklorist. Journal of American Folklore. January. pp. 291-296.

Laban, R. (1956). The principles of dance and movement notation. London: Macdonald and Evans.

Laban, R. (1971). The mastery of movement. (3rd ed.) London: Macdonald and Evans.

Landau, D. (1988). New partner for the dance. Computor Land Magazine. September/October. pp. 8-10,14,68.

Lange, R. (1975). The nature of dance: an anthropological perspective. London: Macdonald and Evans.

Lange, R. (1975) Laban's principles of dance and movement notation with 114 basic movement graphs and their explanations. (2nd ed). Boston: Plays.

Lange, R. (1976). Some notes on the anthropolgy of dance. Dance Studies. Vol. 1. Centre for Dance Studies. pp.38-46.

Lange, R. (1977). Principles underlying the universality of Laban's movement notation. Laban Art of Guild Magazine. 58. May. pp. 8-14.

Lange, R. (1979). Notation. In A. Salter (ed.) The Laban Centenary Symposium Report. London: The Laban Centre for Movement and Dance.

Lange, R. (1985). Laban's system of movement notation. Dance Studies. 9. Centre for Dance Studies. pp.5-66.

Langrell, P. (1986). Documenting dance, the ephemeral art. Dance Notation Journal. Vol.4. No.2. Fall. pp.5-7.

Lepczyk, B.F. (1986). Margaret H'Doubler's classification of movement qualities viewed through Laban analysis. Dance Notation Journal. Vol. 14. No. 1. Spring. pp. 5-13.

Lockyer, B. (1989). Recording dance: a full and truthful record. Journal of the Royal Society for the Encouragement of Arts, Manufactures & Commerce. pp.705-709.

Mahoney, B. (1984). Notation as a tool for video. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Maletic, V. (1987). Body-space-expression. The development of Rudolf Laban's movement and dance concepts. Berlin: Mouton de Gruyter.

Marion, S. (1987). Beyond accuracy: authenticity and interpretation in dance notation. Dance Notation Journal. 5(1), pp.33-39.

Martin, J. (1948). The dance script. Movement. Vol. 1. No. 1. Summer. pp.22-23.

Martin, J, (1950). They score a dance as others do music. The New York Times Magazine. July 2. pp.10-11.

McGuinness-Scott, J. (1983). Movement study and Benesh Movement Notation. An introduction to applications in dance, medicine, anthropology, and other studies. London: Oxford University Press.

Michael, P. (1989). What's going on in dance. Performing Arts in Canada. December/Winter. pp.37-39.

Mindlin, N. (1984). The process of dance reconstruction. Dance Notation Journal. Vol. 2. No. 1. Spring. pp.1-17.

Moses, N. (1984). The effects of movement notation on the performance, cognitions, and attitudes of beginning ballet students at the college level. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Parent, J. (1986). In quest of the perfect pirouette: 3-D choreography.

Pesovar, E. (1976). Three round Verbunks. Dance Studies. Vol.1. Centre for Dance Studies. pp.47-52.

Pforsich, J. (1978). Labanalysis and dance style research. An historical survey and report of the 1976 Ohio State University Research Workshop. Essays in dance research. Dance Research Annual IX. pp.59-74.

Pierpont, M. (1983) Notators unite. Dance Magazine. Vol.57. January. pp.108.

Pierpont, M. (1983). First international dance notation conference. Dance Magazine. Vol.57. June. p.99.

Preston-Dunlop, V. (1968). Thoughts on teaching motif writing. Laban Art of Movement Guild Magazine. pp.13-19.

Preston-Dunlop, V. (1980). A handbook for dance in education. (2nd ed.) London: Macdonald and Evans.

Preston-Dunlop, V. (1982). Going for a walk with a line. Movement and Dance Magazine of the Laban Guild. 69. pp.9-35.

Preston-Dunlop, V. (1983). Choreutic concepts and practice. Dance Research. The Journal of the Society for Dance Research. Vol. 1. No. 1. spring. pp.77-89.

Qureshi, R. B. (1984). Performance and its documentations. Paper prepared for seminar/workshop "Documentation and Archiving" at the Archives and Research Center for Ethnomusicology of the American Institute of Indian Studies, Pune.

Rader, P.W. (1987). Conference report: A forum on legalities and notation. Dance Notation Journal. 5(1). pp.41-43.

Reber, G. (1976). Movement notation in folkoric and historic dance classwork. Dance Studies. Vol. 1. Centre for Dance Studies.
pp. 53-58.

Redfern, B. (1978). The child as creator, performer, spectator. Ontario: Canadian Association for Health, Physical Education & Recreation. pp.3-25.

Redfern, B. (1982). Concepts in modern educational dance. London: Dance Books.

Redfern, B. (1983). Dance, art and aesthetics. London: Dance Books, Ltd.

Roth, C. (1974). Ballet: A critical approach through notation. Dancing Times. pp.574-577,579.

Royce, A. P. (1977). The anthropology of dance. Bloomington: Indiana University Press.

Ryman R.S., Patla, A.E., & Calvert, T.W. (1984). The Labanotation of the kinematics of human gait. Paper presented by R.S. Ryman at the International Congress on Movement Notation, Tel Aviv. Israel.

Schurman, N. & Leigh Clark, S. (1972). Modern dance fundamentals. New York: Macmillan.

Sealy, D. (1983). Computor programs for dance notation. Journal of Physical Education, Recreation and Dance pp. 36-37.

Shawn, T. (1956). 16 dances in 16 rhythms. New York: H. Witmark and Sons.

Siddall, J. (1979). Studies based on crystalloid dance forms: Sylvia Bodmer notation. London: Laban Centre for Movement and Dance.

Siegel, M.B. (1968). Effort-shape and the therapeutic community. Dance Magazine. June. pp.56-59,71-73.

Staley, K.T. (1980). Dance based on Laban effort factors with Labanotation scoring. Unpublished master's thesis. Texas Women's University.

Stepanov, V.I. 1969). Alphabet of movements of the human body. A study in recording the movement of the human body by means of musical signs. Translated by Raymond Lister from the French edition of 1892.

Szentpal, M. (1984). The perception of movement. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Terry, W. (1956). The dance in America. USA: Harper and Row.

Teten, C. (1984). The gavotte: four notation scores from four centuries. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Thornton, S. (1971). A movement perspective of Rudolf Laban. London: Macdonald & Evans.

Topaz, M. (1976). A different approach to the teaching of Labanotation. In R. Lange (ed.) Dance Studies. Vol. 1. Centre for Dance Studies. pp.5-14.

Topaz, M. (1986). Notating and Reconstructing for Anthony Tudor. Dance Notation Journal. Vol. 4. No. 1. pp.13-20.

Topaz, M. (1988-89). The Balanchine project. A brief history. Dance Notation Journal. Vol. 6. Winter/Spring. pp.1-2.

Turnbaugh, D.B. (1970). Dance notation: Potential and problems. Dance Scope. 4(2) pp. 39-47.

Ullmann, L. (1976). What notated movement can tell. In R. Lange (ed.) Dance Studies. Vol. 1. Centre for Dance Studies. pp.19-29.

Ullmann, L. (1958). A report of the professional congress for dance notation and folkdance research, Dresden, 1st to 4th October, 1957. Laban Art of Guild Magazine. No.20. pp.9-18.

Van Zile, J. (1981-1982). Seeking notation solutions. Issues in Labananalysis research. Dance Research Journal. 14/1&2. pp.53-54.

Van Zile, J. (1983). How much does a score say? Proceedings of the 13th International Council of Kinetography Laban.

Van Zile, J. (1984). What is dance? Implications for dance notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Venable, L. (1978). Will dance be literate? Journal of the American Association of Health, Physical Education & Recreation. pp.112-113.

Venable, L. (1983). Korean project, the OSU perspective. Proceedings of the 13th International Council of Kinetography Laban.

Verdin, V. (1987). Notation and the study of dance. The British Journal of Physical Education. Vol.18. No.4. July/August. pp.120-121.

Wachman, A. (1984). Simultaneous movement - phenomenon and representation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Weber, L. & Smoliar, S.W. (1978). Using a computor to prepare Labanotation scores. Psychology, Biomechanics and Computor Studies. Dance Research Journal. IX. pp.243-254.

White, J.W. (1977). The history of movement notation systems. Unpublished paper. Leeds Univeristy.

White J.W. (1985). The changing role of notation in dance examinations. Momentum. 10(3), pp. 11-20.

Whitley, A. (1984). L'apres midi d'un faune - a revival. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Wilks, J. (1981). Notation in the G.C.E. dance syllabus. Impulse.

Wright Dunkley, K. (1978). Professional dance repertory and the collegiate dancer. Journal of the American Association of Health, Physical Education & Recreation. pp.107-108.

Yaniv, Y. (1984). Honey badger interations described in Eshkol-Wachman Movement Notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Youngerman, S. (1978). The translation of a culture into choreography. A study of Doris Humphrey's The Shakers, Based on Labananalysis. Essays in Dance Research. Dance Research Annual IX. pp.93-110.

Youngerman, S. (1984). Movement notation systems as conceptual frameworks: The Laban system. In M. Sheets-Johnstone (ed.) Illuminating Dance. Philosophical Explorations. New York: Associated University Presses.

Performance Bibliography

Aldrich, V.C. (1963). Philosophy of art. Englewood Cliffs, New Jersey: Prentice-Hall.

Armelagos, A. & Sirridge, M. (1978). The identity crisis in dance. Journal of Aesthetics and Art Criticism. 37. pp.130-131.

Armelagos, A. & Sirridge, M. (1977). The in's and out's of dance: expression as an aspect of style. Journal of Aesthetics and Art Criticism. 36. pp.15-23.

Beardsley, M.C. (1946). The intentional fallacy. Sewanee Review. 54. pp. 468-488.

Beardsley, M.C. (1984). What is going on in a dance? In H. Sheets-Johnstone (ed.) Illuminating Dance: Philosophical Explorations. London: Associated University Presses.

Berleaut, A. (1970). Aesthetics and the contemporary arts. Journal of Aesthetics and Art Criticism. Winter p.156.

Best, D. (1982). The aesthetic and the artisitic. Philosophy. 57. pp.357-372.

Best, D. (1984). Expression in movement and the arts. London: Lepus Books.

Brown, N.O. (1967). Apocalypse: The place of history in the life of the mind. In S. Romaine Hoppe & D. L. Millar Interpretation and the Poetry of Meaning. New York: Harcourt, Brace and World. pp.7-13.

Chapman, L.H. (1967). Subject matter for the study of art. Art Education. Journal for the National Art Education Association. 20(2). pp.20-22.

Cioffi F. (1978). Intention and interpretation in criticism. In J. Margolis (ed.) Philosophy Looks at the Arts. Philadelphia: Temple University Press.

Cohen, S.J. (1976). Bournonville and the question of preservation. Dance Magazine. pp.77-78.

Cohen, S.J. (1982). Next week, Swan Lake. Reflections on dance and dances. Conneticut, U.S.A.: Wesleyan University Press.

Cohen, S.J. (1983). Present problems of dance aesthetics. The Journal of the Society for Dance research. Vol. 1. No. 1. pp.12-21.

Cohen, S.J. (1984). Ingarden's aesthetics and dance. In Illuminating Dance: Philosophical Explorations. (ed.) M. Sheets-Johnstone. London: Associated University Press.

Collingwood, R. G. (1964) The work of art as an imaginary object. In W. E. Kennick (ed.) Art and Philosophy: Readings in Aesthetics. New York: St. Martin's Press.

Covington, M.V. (1967). Teaching for creativity: Some implications for art education. Studies in Art Education. 9 No.1. pp.18 - 32.

Croce, A. (1977) Afterimages. New York: Alfred A. Knopf.

Croce, A. (1982). Going to the dance. New York: Alfred A. Knopf.

(1990). Dance in America. A Tudor Evening. (Film). A Co-Production of WNET/THIRTEEN & Danmarks Radio.

Denby, E. (1976). Form in motion and in thought. Special Dance Issue. Salmagundi. pp. 33-34.

Denby, E. (1986). Dance Writings. New York: Alfred A. Knopf.

Dickie, G. (1971) Aesthetics. An introduction. Indianapolis: Pegasus.

Dipert, R.R. (1988). The composer's intentions: an examination of their relevance for performance. Musical Quarterly. 66. pp.205-218.

Duffey, T. J. (1969). The republic of art. British Journal of Aesthetics. 9. pp. 45-156.

Duffey, T. J. (1974). Art and the aethetic: an institutional analysis. New York: Cornell University Press.

Dufrenne, M. (1973). The phenomenology of aesthetic experience. 1953. Transl. by E. S Casey et al. Evanston, Ill: Northwestern University Press.

Eisner, E. W. (1972). Educating artistic vision. New York: Macmillan.

Eisner, E. W. (1976). The arts, human development and education. Berkeley: McCutchan.

Engel, M. (1981). The mind, art and history. Review of Research in Visual Arts Education. 14. pp.4-17.

Garoner, H. (1973). The arts and human development. A psychological study of the artistic process. New York: Riley.

Gardner, H. (1976). Promising paths toward artistic knowledge. Journal of Aesthetic Education. 10(3-4). pp.201-207.

Gardner, H. (1981). The quest for mind - structuralist movement. Chicago: University of Chicago Press.

Goodman, N. (1976). Language of art: an approach to a theory of symbols. Indianapolis:

Hackett.

Greene, G.K. (1974). For whom and why does the composer prepare a score. Journal of Aesthetics and Art Criticism, 32. pp. 503-507.

Hanna, J. L. (1987). To dance is human: a theory of nonverbal communication. Chicago: The University of Chicago Press.

Heidegger, M. (1966). Discourse on thinking. New York: Harper and Row.

Hill, R. (1985). Aesthetics as an area of study within the physical education undergraduate curriculum. Paper presented at the University of Alberta, Edmonton.

Hospers, J. (ed.) (1969). Introductory readings in aesthetics. New York: The Free Press.

Johnstone, A. A. (1984). Languages and non-languages of dance. In M. Sheets-Johnstone (ed.) Illuminating Dance. Philosophical Explorations. London: Associated Presses.

Jones, B. T. (ed.) (1983). The emergence and development of tradition. Dance as Cultural heritage. Vol. 1. New York: Dance Research Annual XIV.

Kennick, W. E. (ed.) (1964). Works of art and aesthetic objects. Art and Philosophy Readings in Aesthetics. New York: St. Martin's Press.

Khatchadourian, H. (1977). Movement and action in the performing arts. Journal of Art and Art Criticism, 36. pp.25-36.

Kinberg, J. (Producer), & Grimm, T. (Director). (1990). Dance in America: a Tudor evening. [Film]. A Co-production of WNET/THIRTEEN & Danmarks Radio.

Kingsley, P. (1970). The performing and now. Performing Arts, 29. pp.53-62.

Langer, S. K. (1952). Philosophy in a new key: a study in the symbolism of reason, rite, and art. Boston: Harvard University Press.

Langer, S. K. (1953). Feeling and form. London: Routledge and Kegan Paul.

Langer, S. K. (1970). The dramatic illusion. Problems in aesthetics. Book of readings. London: Macmillan.

Langer, S. K. (1978). Philosophy and symbolism. In W. G. Hardy (ed.) Language, Thought, and Experience: A Tapestry of Dimensions of Meaning. Baltimore: University Park Press.

Levin, D. M. (1973). Essays in dance aesthetics. Dance Perspectives, 55. pp.29-48.

Levin, D. M. (1980). On Heidegger: The gathering dance of mortals. Research in Phenomenology, 10, pp.251-277.

Levin, D.M. (1975-1976). The embodiment of performance. Salmagundi Nos. 31 & 32. pp.120-142.

Maletic, V. (1987). Body-space-expression. The development of Rudolf Laban's movement and dance concepts. Berlin: Walter de Gruyter & Co.

Margolis, J. (1970). The ontological peculiarity of works of art. Problems in Aestheitcs. Book of Readings. London: Macmillan.

Margolis, J. (1984). The autographic nature of the dance. In M. Sheets-Johnstone (ed.) Illuminating Dance: Philosophical Explo... London: Assicated Presses.

Marion, S. (1986). Beyond accuracy: authenticity and interpretation in dance notation. Proceedings of International Council of Kinetography Laban. pp.103-105.

Mark, T.C. (1981). Philosophy of piano playing: reflections on the concept of performance. Philosophy and Phenomenological Research, 41. No.3. pp.299-324.

Meiland, J. W. (1970). The nature of intention. London: pp.7ff.

Metheny, E. (1968). Movement and meaning. New York: McGraw-Hill.

Merlau-Ponty, M. (1962). Phenomenology of perception. London: Routledge and Kegan Paul.

Miller, G. (1987). The notion of critical analysis. Dance Notation Journal, 5 (1), pp.5-10.

Miller, J. (1986). Subsequent performances. New York: Elisabeth Sifton/Viking.

Mitias, M. H. (1982). The ontological status of the literary work of art. Journal of Aesthetic Education. Vol.16. No.4. pp.41-52.

Mitra, M. H. (1982). Aesthetic and artistic creation. Journal of Aesthetic Education. Vol. 16. Spring. pp.99-103.

O'Neill, D. (1985). Stages of aesthetic development in dance. Journal of the Canadian Association of Health, Physical Education & Recreation. 51(5), pp.44-45.

Pepper, S. (1964). The aesthetic work of art. In W. E. Kennick (ed.) Art and Philosophy: Readings in Aesthetics. New York: St. Martin's Press.

Qureshi, R. (1984). Performance and its documentation. Paper prepared for Seminar-cum-Workshop "Documenting and Archiving" at the Archives and Research Center for Ethnomusicology of the American Institute of Indian Studies.

Reid, L. A. (1976). Feeling and knowing. Journal of Aesthetic Education. 10(3-4).

Ross, M. (1981). The aesthetic imperative. Toronto: Pergamon Press.

Ross, M. (1984) Art and aesthetics. Aesthetic Impulse. Toronto: Pergamon Press. pp.26-35.

Sachs, C. (1946). The commonwealth of art. New York: W. W. Norton.

Sheets-Johnstone, M. (1984). Illuminating Dance. Philosophical explorations. London: Associated University Presses.

Shell, C. G. (ed.) (1984). The dancer as athlete. Vol. 8 - 1984 Olympic Scientific Congress Proceedings. Champaign, Illinois: Human Kinetics.

Siegel, M. B. (1967). Training an audience for dance. Arts in Society. 4. p.440.

Siegel, M. B. (1968). At the vanishing point: a critic looks at dance. New York: Saturday Review Press.

Sircello, G. (1978). Expressive properties of art. In J. Margolis (ed.) Philosophy Looks at the Arts. Philadelphia: Temple University Press.

Sirridge, M. & Armelagos, A. (1977). The in's and out's of dance: expression as an aspect of style. Journal of Aesthetics & Art Criticism. 36. pp.23-24.

Sorrell, W. (1971). The dancer's image: points and counterpoints. New York: Columbia University Press.

Souriau, P. (1983). The aesthetics of movement. Amherst: University of Massachussetts Press.

Sparshott, F. (1982). On the question: "Why do philosophers neglect the aesthetics of the dance. Dance Research Journal. 15/1. Fall. pp.5-30.

Taplin, D.T. (ed.) (1979). On critics and criticsm of dance. In New Directions in Dance. Collected writings from the Seventh Dance in Canada Conference held at the University of Waterloo, Canada, June. Pergamon Press.

Thomas, C. C. (1980). Aesthetics and dance. Journal of the American Association of Health, Physical Education, Recreation & Dance.

Van Zile. J. (1984). What is dance? Implications for dance notation. Paper presented at the First International Congress on Movement Notation, Tel Aviv, Israel.

Welleck, R. & Warren, A. (1964). The analysis of the literary work of art. In W. E. Kennick (ed.) Art and Philosophy. Readings in Aesthetics. New York: St. Martin's Press.

Wimstatt, W. K. & Beardsley, M. C. (1978). The intentional fallacy. In J. Margolis (ed.) Philosophy Looks at the Arts. Philadelphia: Temple University Press.

Wollheim, R. (1978). Art and its objects. In J. Margolis (ed.) Philosophy Looks at the Arts. Philadelphia: Temple University Press.

Wolterstorff, N. (1978). Toward an ontology of art works. In J. Margolis (ed.) Philosophy Looks at the Arts. Philadelphia: Temple University Press.

Woodruff, D. L. (1970). On composing a period ballet: A chat with Mary Skeaping. Dance Scope. 4(2). pp.18-25.

Zarrelli, P. B. (1987). A tradition of change: The role(s) of patron and patronage in the Kathkali dance-drama. In J. Erdman (ed.) Patronage and Performance.

Zelinger, J. (1979). Imagination: appropriation and making. Paper presented at the Laban Centre, University Goldsmith's College, London. U.K.

CHAPTER 3

THE DESIGN OF A PROCEDURE TO ASSESS THE RELIABILITY OF THE LABAN SYSTEM OF NOTATION[1]

A. Introduction

1. Opening Comments

It is generally agreed that, through the use of a notation score, one is able to preserve and reconstruct dance works (Armelagos and Sirridge, 1978; Goodman, 1976; Hutchinson Guest, 1984; Laban, 1956; Youngerman, 1984). However, the Laban system of notation also provides a means of "establishing and preserving the identity of a choreographic work" (Youngerman, 1984, p.101). Cohen (1982) defined the score as a "designator of those constituent properties necessary to the realization of the particular work" (p.149), and that it specified the "range allowed to the dancer" (p.150). Goodman (1976) supported this and acknowledged that the primary function of a score is to provide "an authoritative identification of a work from performance to performance" (p.128). Further, he noted that the score will assist in the recognition of performances which belong to a work and those that do not" (p.127). Van Zile (1984) described the score as an "instructional manual" (p.1), and considered that it may be the "closest we can come to a lasting artifact in dance" (p.5).

These descriptions indicate that the notation score is seen as a means of assessing a work, but, more importantly, it provides valuable information regarding the nature of a work of art

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[1]A version of this chapter was presented and the paper published in the Proceedings of the 2nd International Congress on Movement Notation, Hong Kong, July 1990.

itself. The notation score contains details about: the movement content and form; the costuming and stage design; the choreographer's intent through notes; and the performance(s) itself (themselves). The latter four areas are presented verbally or pictorially. It is accepted that Labanotation is able to specifically capture both the quantifiable and qualitative aspects of the movement content and form. As such, the notation system should be accurate and reliable in capturing the necessary details for a reconstruction of a work.

However, there is little research to support the claims that notation is an accurate and reliable tool in the analysis and recording of movement and dance (that is, the dance form in particular). Most assertions that the notation system has been successful are personal, anecdotal, and unsubstantiated in formal scientific research theory. The "experts" and practitioners involved in developing and using the system have had little time to implement research programmes, and notation practitioners have not felt it necessary to show such accountability. As the use and applications of the notation system are extended the system must be shown to be accurate and valid in both the recording and reconstruction of dance works and of other movement forms.

Van Zile (1983) implemented one of the first projects which went some way towards identifying a procedure for testing the reliability of the notation system. This was the Korean Project which she undertook in 1982 in collaboration with the dance department of the Ohio State University. Van Zile (1983) implemented "informal testing" in order to ascertain "how much information" is conveyed in the symbols of the system (p.104). The project involved the reconstruction of a Korean dance by students from the University of Ohio who knew little of that particular dance style or form. The student dancers used a notation score of the dance as it had been performed by a Korean dancer. They used the notation score to study and reconstruct the

dance. A videorecording was then made of the performance of the student dancers. A group of dance researchers and Korean dancers found the performances acceptable and greeted them with "interest, curiosity, and disbelief - disbelief that Labanotation could be used to notate their dances" (p.105). The results were reported in two accounts, Van Zile (1983) and Venable (1983), where each indicated that the notation score can provide the required detail for an acceptable reconstruction of a dance work. Venable (1983) further recommended that "similar experiments" should be undertaken.

A second study which considered the reliability of the notation system was undertaken by Bartenieff, Hackney, True Jones, Van Zile, and Wolz (1984). This study investigated Labanotation and Effort-Shape analysis as a "basis for meaningful movement research in the field of dance" (p.7), and was "initiated to explore the potential uses for employing movement analysis in dance research" (p.3). The members of the team included: movement analysts in the Effort-Shape system; teachers and notators familiar with the Laban system of notation; specialists in the Indian dance form; and, technicians familiar with notation and Asian dance. The project involved the observation, analysis, and recording of a dance form from the repertoire of Mohinijattam. Over several months and after many viewings of a video-recording, narrative, and notational forms of data were collected. Notation scores were used to analyze the movement detail and choreographic form of the selected dance. However, these findings did not indicate the reliability of the system but rather gave support to the validity of the system; that is, that people knowledgeable in the system are able to record in different movement domains.

Of particular interest to this research were the conclusions reached regarding the use of notation scores. The notation scores were seen as a "source of information about the dance" (p.7).

The research project accomplished significant results: the core characteristics of the dance were defined; concepts were explored and techniques were evolved for the use of movement analysis in dance research; and, specific areas of concern were identified for future consideration. Amongst these areas of concern were the use of notation scores as a "source of information about the dance" (p.7). This statement implies that the notation score was an accurate description of the dance. The researchers felt that the issue of the reliability of a notation score and an assessment of what the score represents needed to addressed if notation scores were to be used in dance research. It was suggested that the notator's understanding and ability to use the notation system, together with the purpose of the score, should be identified in an evaluation of a particular notation score.

The purpose of this study was to extend this area of research as neither of the studies mentioned above had probed the issue of reliability. Each one addressed the use of the system in different areas of dance. In order to assess the reliability of the system a consideration of the content of the score and the degree of accuracy between notators must be made. Thus the pilot study was undertaken to identify procedures which could be used in the testing of the reliability of the Laban system of notation. This paper is a report on the procedures and on the results of the pilot study.

2. Limitations of the Study

It was accepted by the researcher that this study would be limited in the following ways:

i. that only a small group of notators would be available to take part in the study; and,

ii. that there would be a variety of skill levels and experience in the notation system.

iii. that the choreography and the procedure of the study would have to be designed and implemented by the researcher in order to control for variance and method.

3. Delimitations of the Study

In order to control for specific variances, it was necessary to create a laboratory situation. Therefore, the following delimitations would define the boundaries of the study:

i. the group of notators selected to take part represent a particular segment of the population of those who have studied and applied the Laban system of notation in their work; they are members of the International Council of Kinetography Laban (ICKL) and are primarily concerned with the research and development of the symbologies, orthographies, and principles of the system;

ii. the dance phrase choreographed and recorded for this study was by necessity short (8 bars) and by intent modern in style;

iii. the participants were asked to record the dance phrase for future reconstruction;

iv. a videorecording of the dance phrase was used in order to eliminate the potentially imprecise repetition of the phrase by the dancer, and,

v. the videorecording was available to all participants in the recording session;

vi. the possibility of discussing the phrase with the choreographer and dancer was not permitted.

4. Significance of the Study

It was felt that this pilot study would contribute to the field of notation, in particular the

Laban system of notation. It would identify procedures which could be used in testing the reliability of the notation system. Further replication of the testing procedure in dance and related fields of movement study may lead to further confirmation of the applicability of the use of the system in all areas of movement study.

B. Methods

The pilot study was implemented in the summer of 1987 at the fifteenth biennial conference of ICKL. ICKL is the body concerned with research into the development of the Laban system of notation. Related research is encouraged and time is allocated for delegates to share information on and carry out projects. In 1987, the conference committee assigned an one and one-quarter-hour session for the research project under discussion.

A group of seventeen delegates involved in the teaching and performing of ballet, folk, or modern dance agreed to take part in the study. Participants included: professional notators and reconstructors of dance works; teachers of elementary, intermediate, or advanced levels of notation; and students with advanced qualifications. All were cognizant of Laban's method of analysis, with the principles and symbologies of the system, and were actively involved in observing and analyzing movement for recording purposes.

Within the group of seventeen participants it was found that the breadth of experience in both dance and notation varied to a certain degree. Therefore, the scores of the nine members whose notation experience and dance background were similar, were selected for specific analysis. One member of the group, considered to be the most experienced in Labanotation, was selected as the "expert" (see Appendix A).

A short, modern dance phrase was selected for the one and one-quarter hour session. It was felt that this type of dance phrase would provide adequate feedback and data with which to identify specific procedures relevant to the research question. The phrase was choreographed and notated (Figure 2) by the researcher and performed by a person experienced in modern dance. The modern dance phrase consisted of a starting position, nine three-count bars, and content from each of the major categories of movement. Each bar consisted of a number of specific movement features. The researcher notated and identified the number of features in each bar and in the total phrase (Table 1).

1. The Notation Session

The dancer performed the phrase once in person, during which time a videorecording was made. The notators watched the live performance and were then allowed to view the videorecording as many times as they wished within an allocated time period. The videorecording would provide a repeated and exact performance for the group. Any changes that the dancer made to the original phrase that had been practised and notated were included in the choreographer's notation score and checked by a second notator.

The participants were asked to record the dance phrase for future reconstruction. This would involve selection of certain elements which the notator observed and considered important. It was felt that this identification would define the particular content of the notations, resulting in the desired prescriptive score. Further, the participants were also asked to write their first impressions in a different coloured pencil. It was considered that these first writings may isolate features that the participants felt were important in the dance phrase.

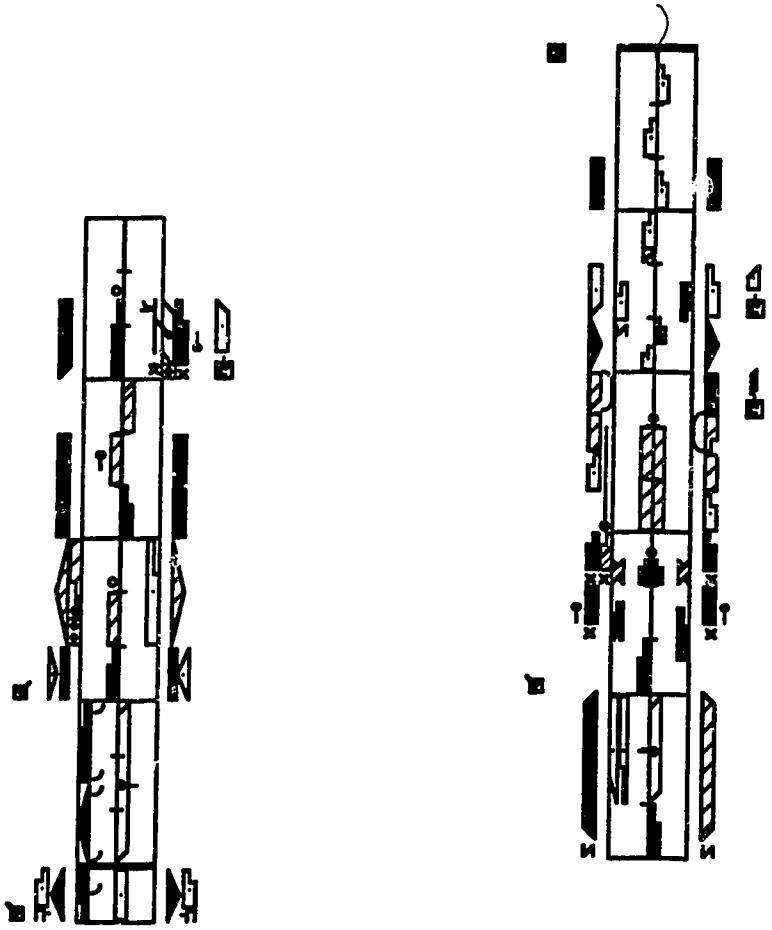


Figure 2. Notation Score of the Choreographer.

2. Rating Procedures

It was decided that there were three ways in which the information contained within the participants' notation scores could be compared and analyzed. These comparisons would be between each participant's notation score and the notation scores of:

i. the choreographer;

ii. the "expert"; and,

iii. a randomly-selected member of the group.

In the first instance, the rating of the notation scores was undertaken by the researcher/choreographer. However, it was considered that the strength of the reliability measurement could be furthered by a second rating. Therefore, the second phase would involve a person who was knowledgeable in the Laban system of notation and who was trained in the method of rating used in the study. The following procedures were implemented to ascertain the degree of reliability.

Firstly, the first writings were tabulated and compared within the group (Figures 3-6). Secondly, the content of each of the notation scores was identified. These included those of: the choreographer (Figure 2); the "expert" (Figure 7); the randomly-selected member of the group (Figure 8); and each of the individual participants (Figures 7-12).

The individual features of the notation scores were categorized and organized according to the analytic framework of the notation system. These are: actions of the body, such as gesture, transference of weight, and turning; rhythmic and dynamic elements, such as simultaneous and successive relationships, accent, and degree of tension; and, spatial elements, such as direction, level, size, and relationships. Each feature was identified and recorded within the specific

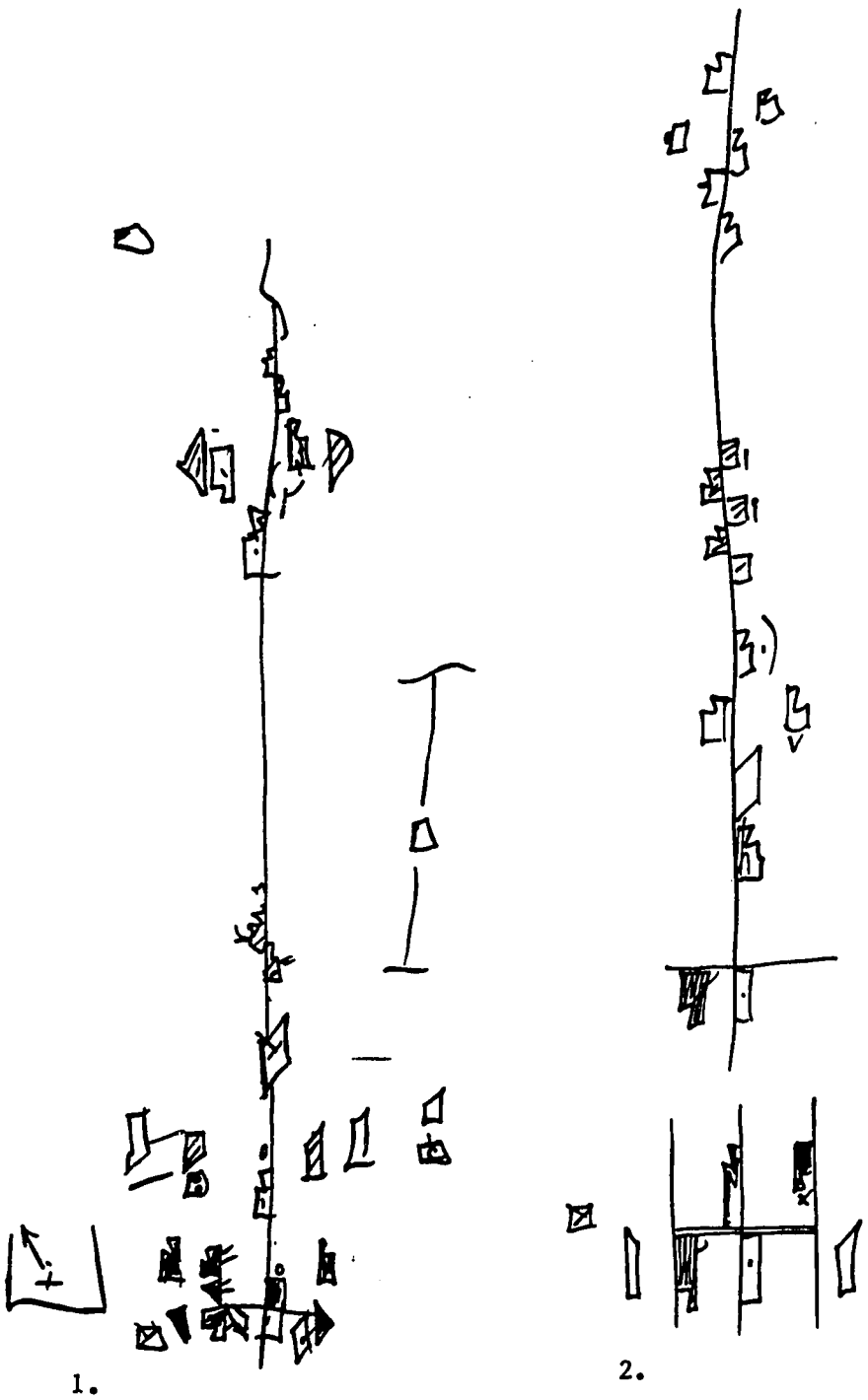
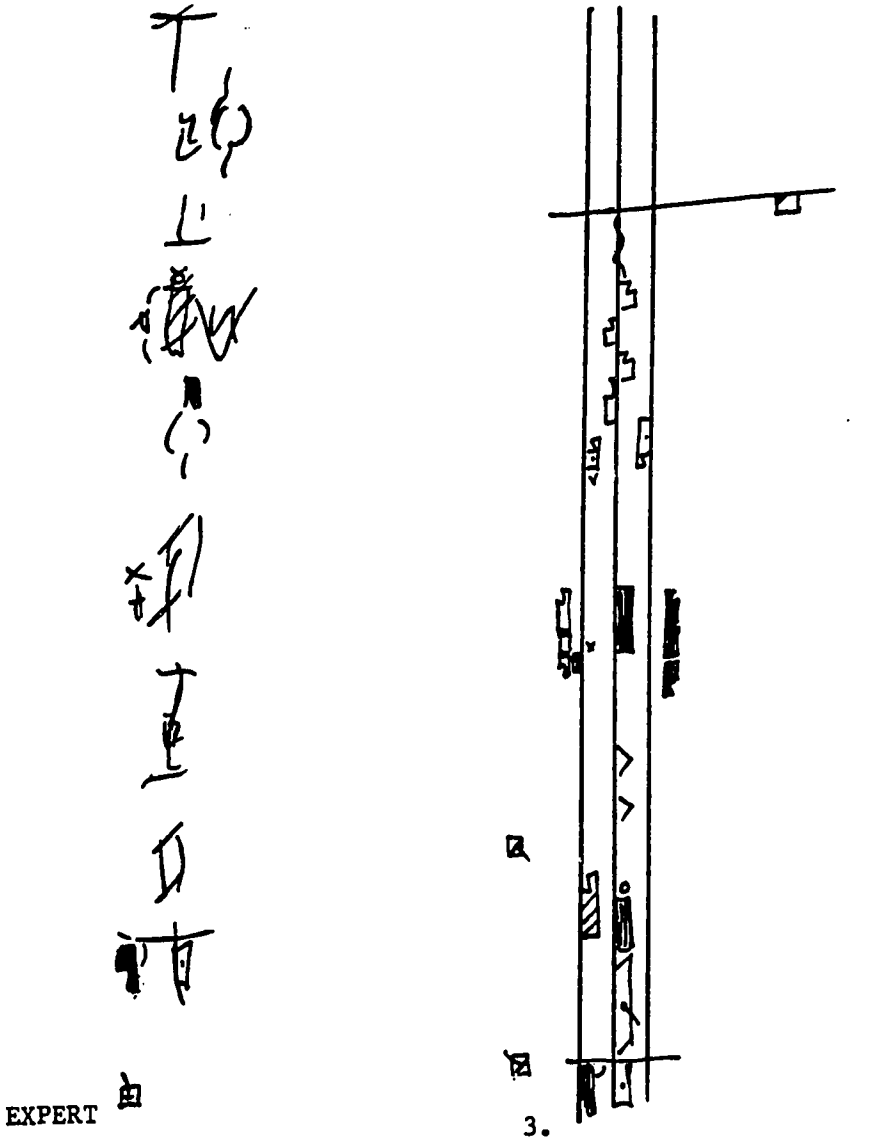
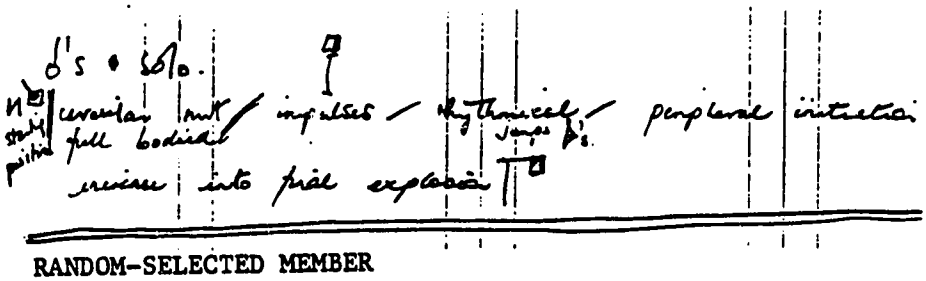


Figure 3. First Writings of Participants 1 and 2.



EXPERT

3.



RANDOM-SELECTED MEMBER

Figure 4. First Writings of Participant 3,

the "Expert", and the Randomly-Selected Member.

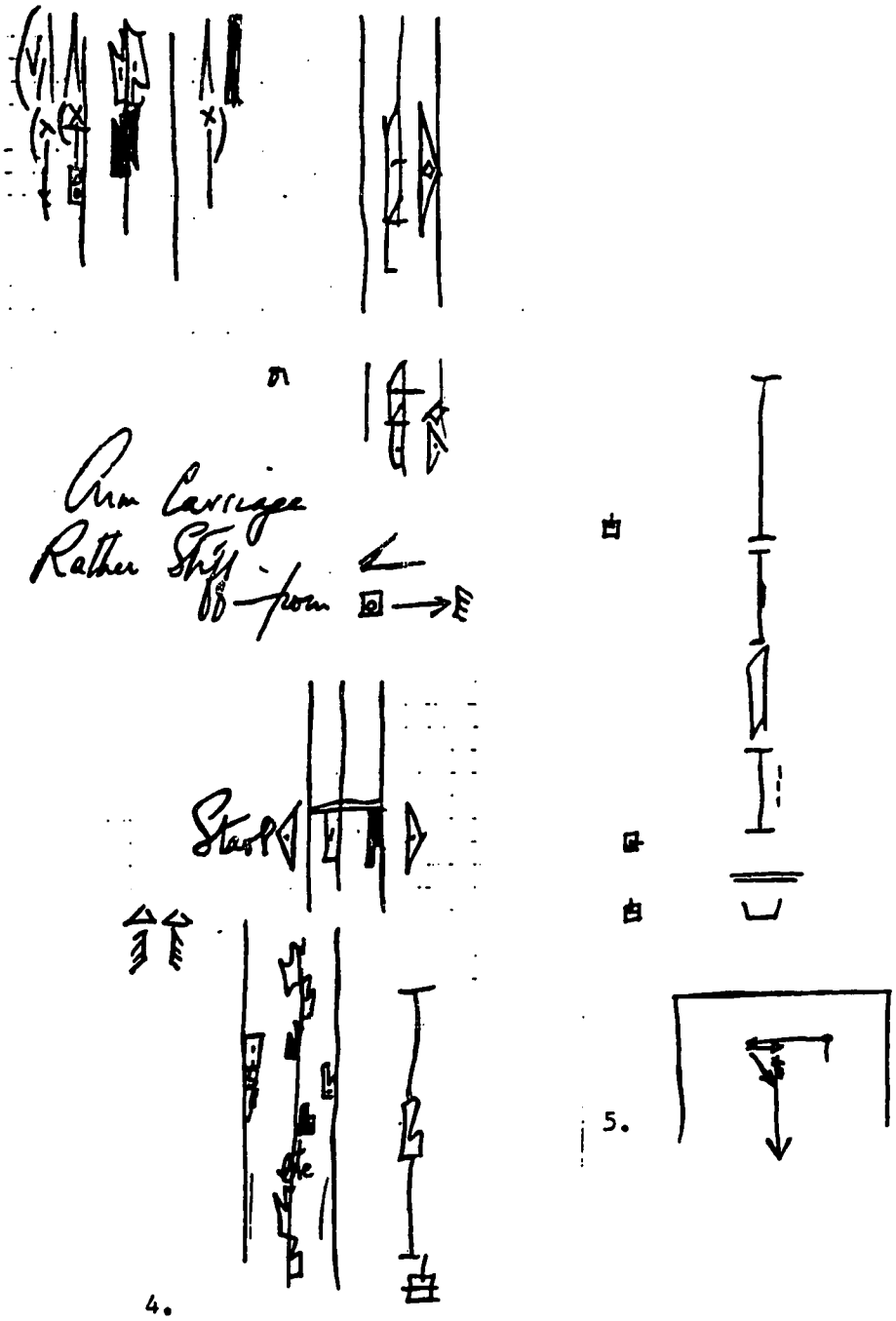


Figure 5. First Writings of Participants 4 and 5.

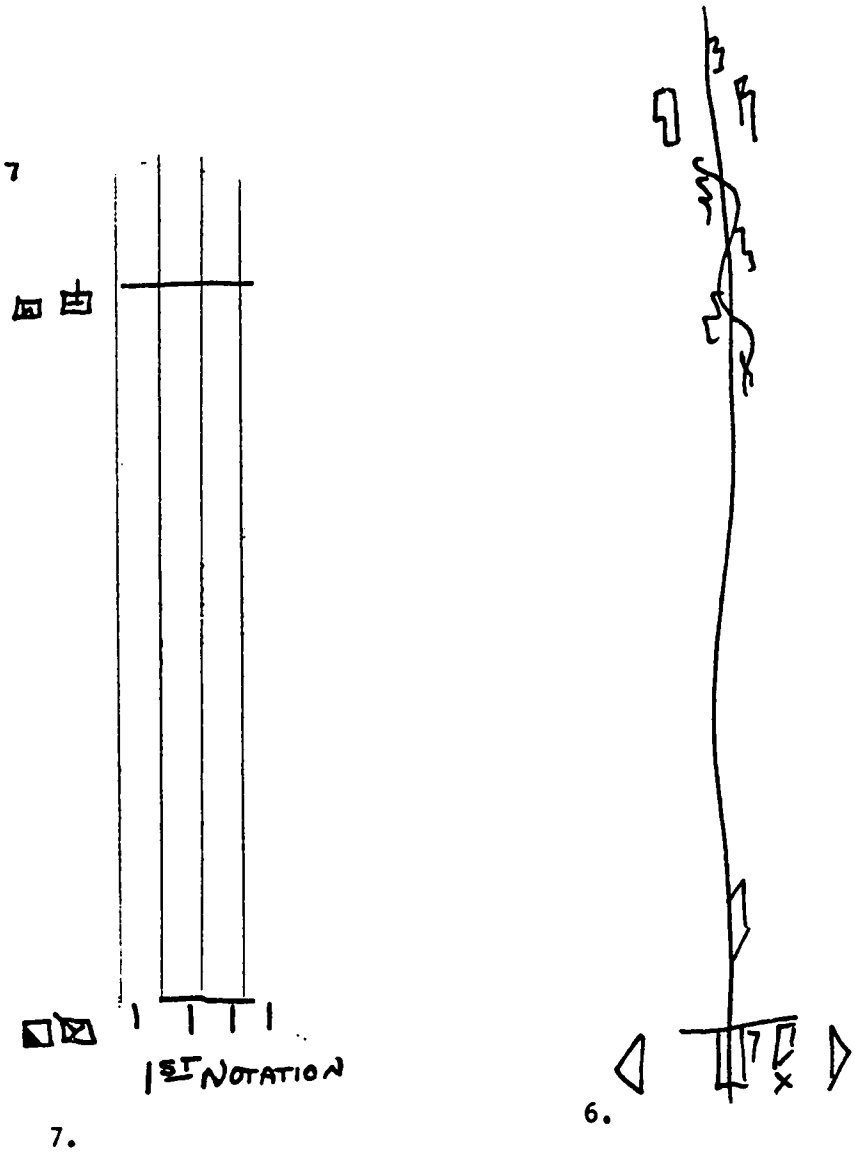


Figure 6. First Writings of Participants 6 and 7.

categories of action, time, and space. As an example of this organization, let us refer to the leap in bar 8 (Figure 2). It contained 44 features which included: a step, then a further action of transferring weight from one foot to another with a moment in the air (4 features); the actions of accompanying head, arm, and leg gestures (7 features); the direction, size, and level of steps (7 features); the direction, size, and level of leg gestures (5 features); the direction and level of arm gestures (8 features); the direction and level of head facing (2 features); and, the timing of each of the actions (11 features).

Finally, the notation scores of the choreographer: "expert",and randomly-selected member of the group, and the group of seven selected participants were analyzed in two ways:

a. individual inter-observer agreements, disagreements, and omissions were calculated and recorded on data sheets; and,

b. a group mean ($\bar{x}$) was calculated.

In both analyses agreement occurred if the features recorded by the individual participant corresponded directly with the notation score of the choreographer, "expert", or randomly-selected member of the group. For example, Figures 13 and 14 illustrate the scoring procedure for the choreographer and the seven participants in the starting position of the modern dance phrase. In each instance, an agreement is tabulated with an "a" and the total number recorded in the agreement column. Thus the agreements for each feature and the participants total score of agreements for the dance phrase were recorded. In this example, there were 11 features of action, time, and space which made possible a total of 77 pieces of information. Therefore, in this example, there were 58 agreements and 19 disagreements, with six of the disagreements being omissions of information.

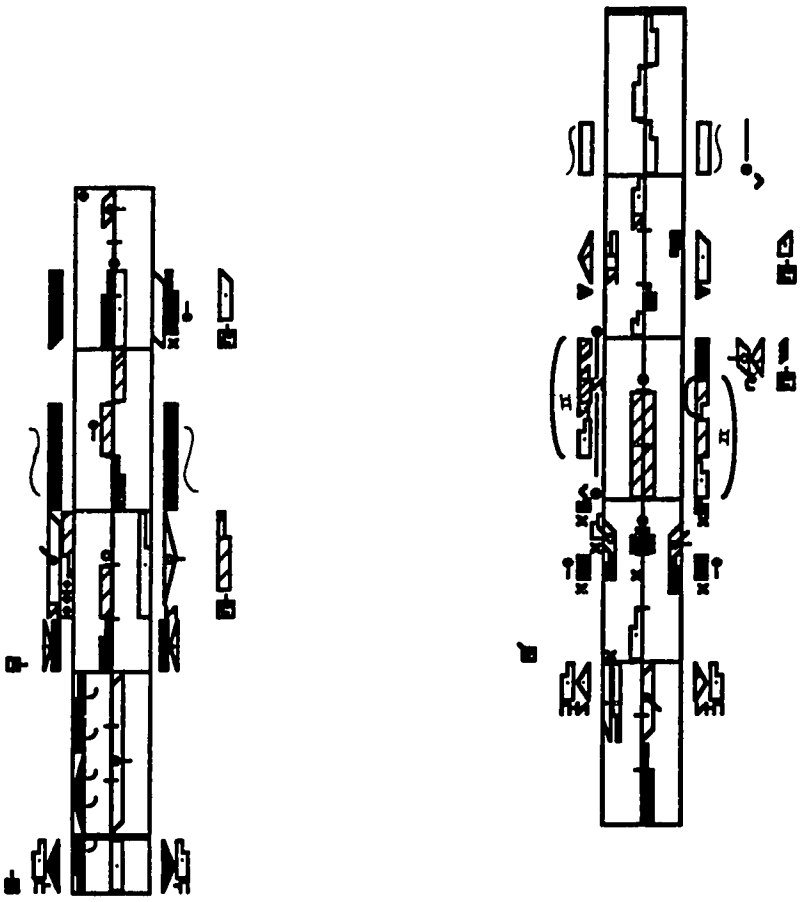


Figure 7. Notation Score of the "Expert"

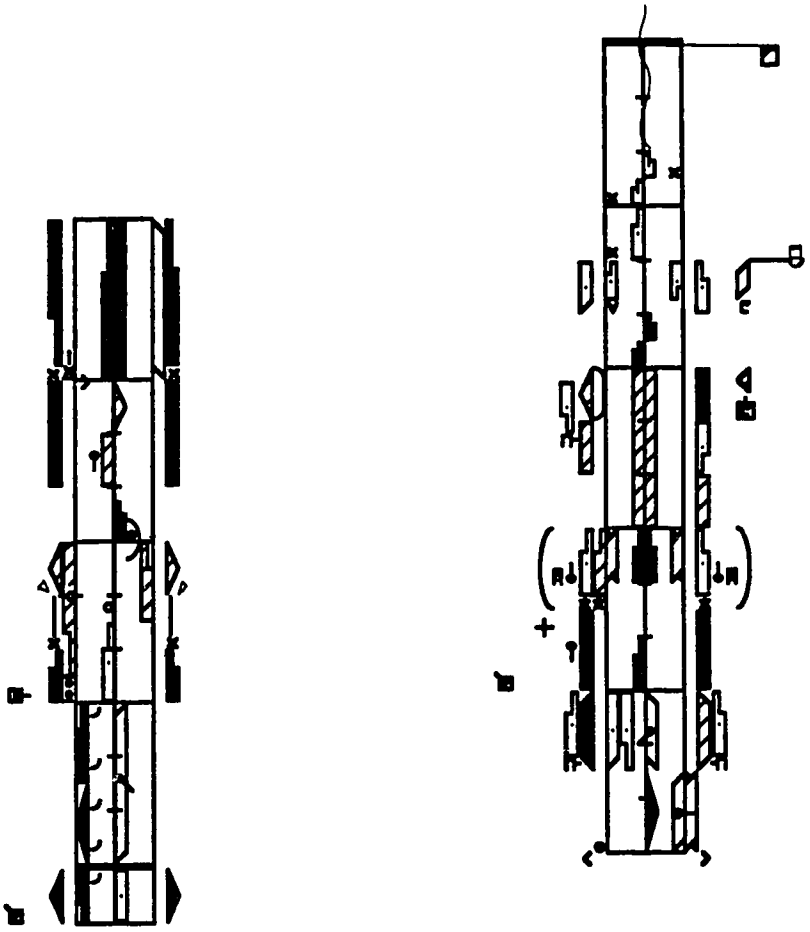


Figure 8. Notation Score of the Randomly-Selected Member

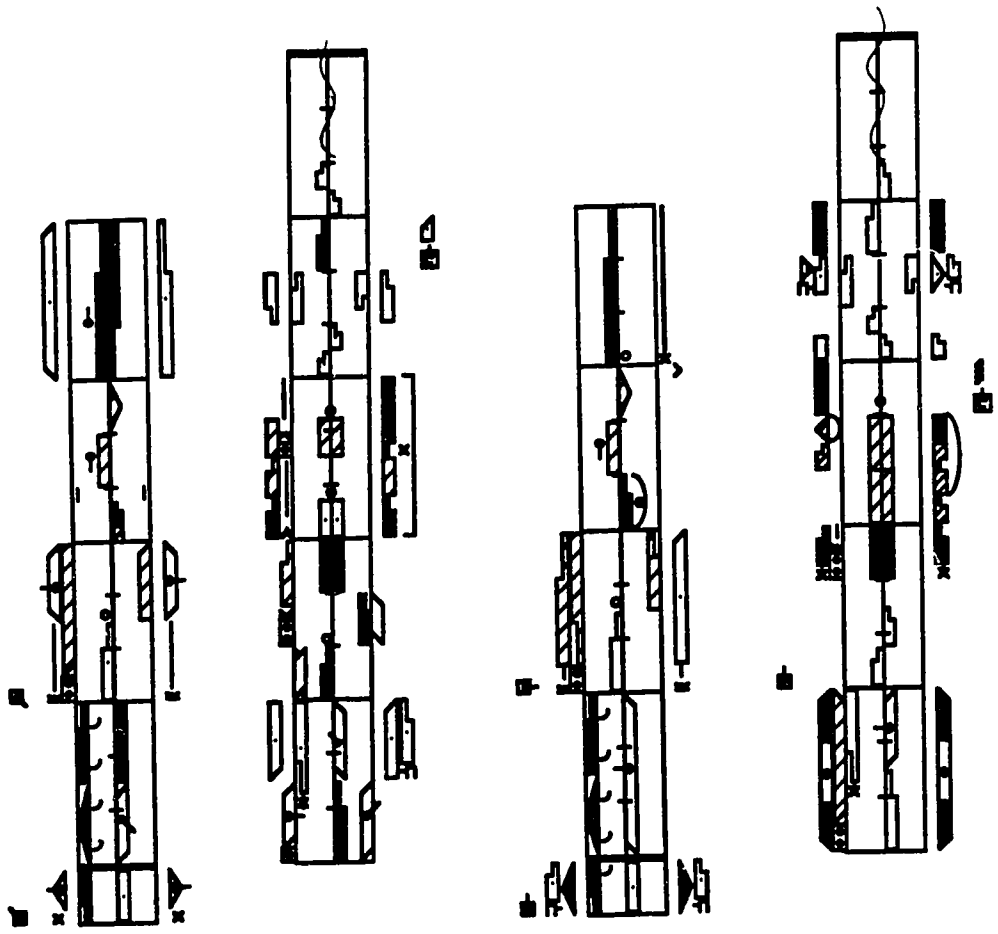


Figure 9. Notation Scores of Participants 1 and 2

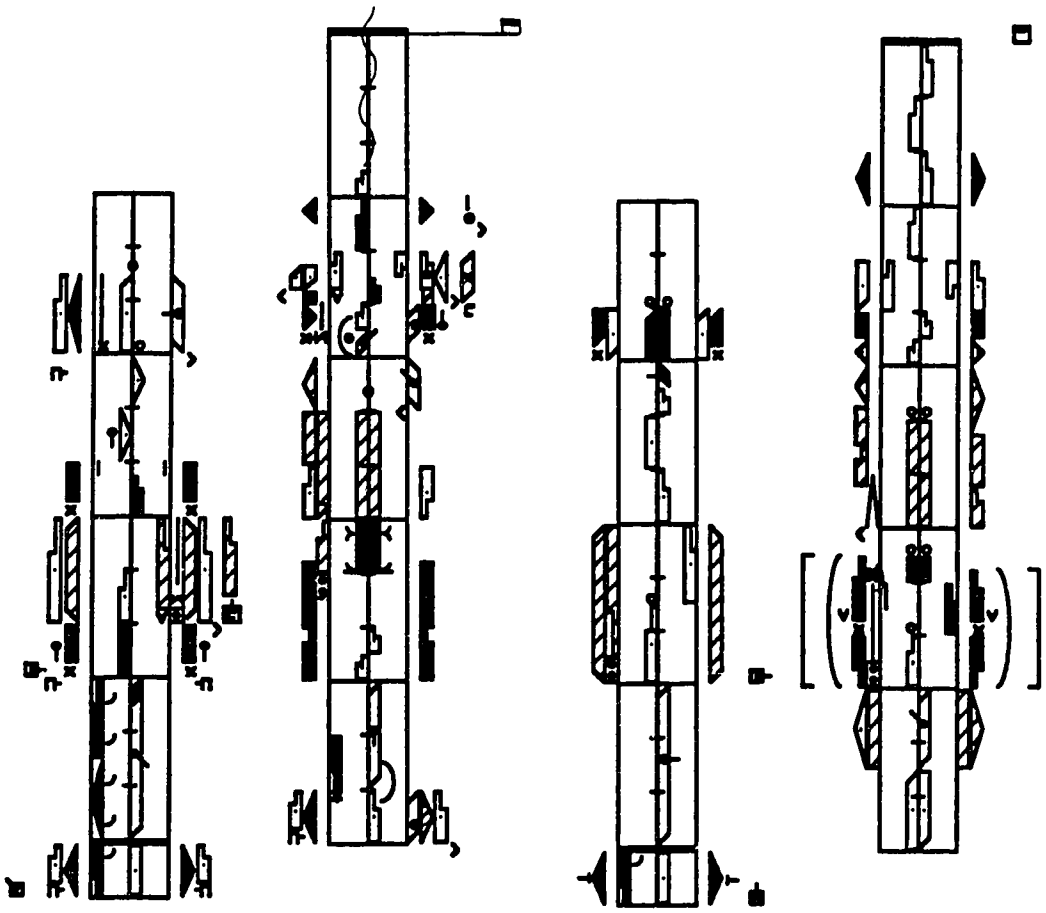


Figure 10. Notation Scores of Participants 3 and 4

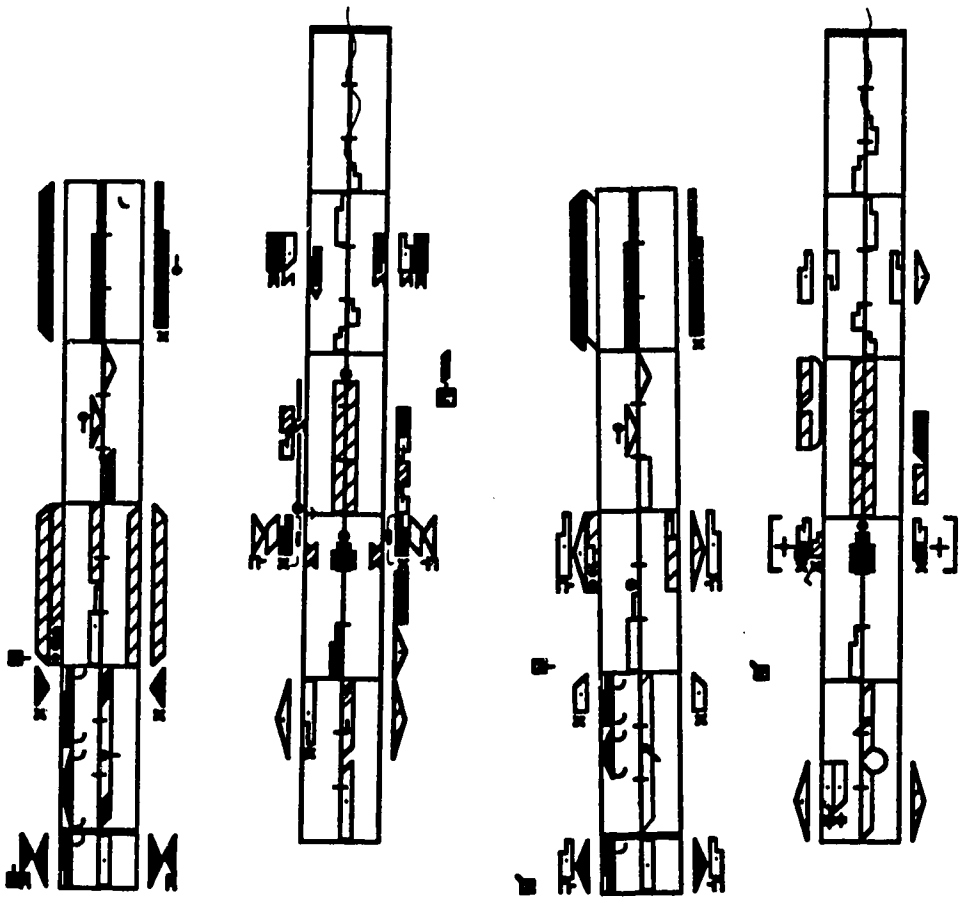


Figure 11. Notation Scores of Participants 5 and 6

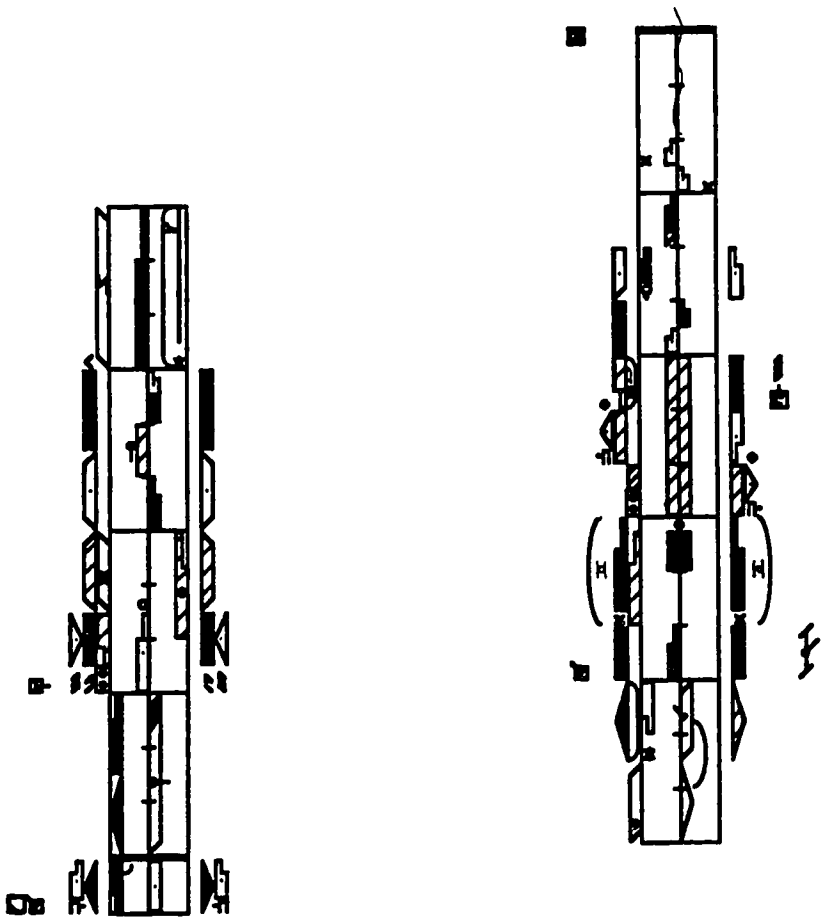


Figure 12. Notation Score of Participant 7

Two types of disagreement could occur, and were identified as follows:

a. notated material of the participant did not correspond with, that is, was found to be different from or was in addition to, that of the choreographer, "expert", randomly-selected member of the group; and,

b. notated material was omitted from the scores completed by the seven participants. From this it was possible to determine the degree of agreements, disagreements, and omissions of features between members of the group.

Inter-observer agreements ("a"), disagreements ("d"), and omissions ("o") were recorded for each member of the group. In Figure 14 total agreements, disagreements, and omissions for each individual participant can be seen. The total number of agreements, disagreements, and omissions for each of the features are also noted here.

After the first analysis by the researcher the notation scores of the choreographer, "expert", and randomly-selected member of the group, together with four randomly-selected scores of the participants were sent to a second scorer for analysis.

C. Analysis of Data

1. Introduction

The purpose of this section is to identify and discuss the findings of the study.

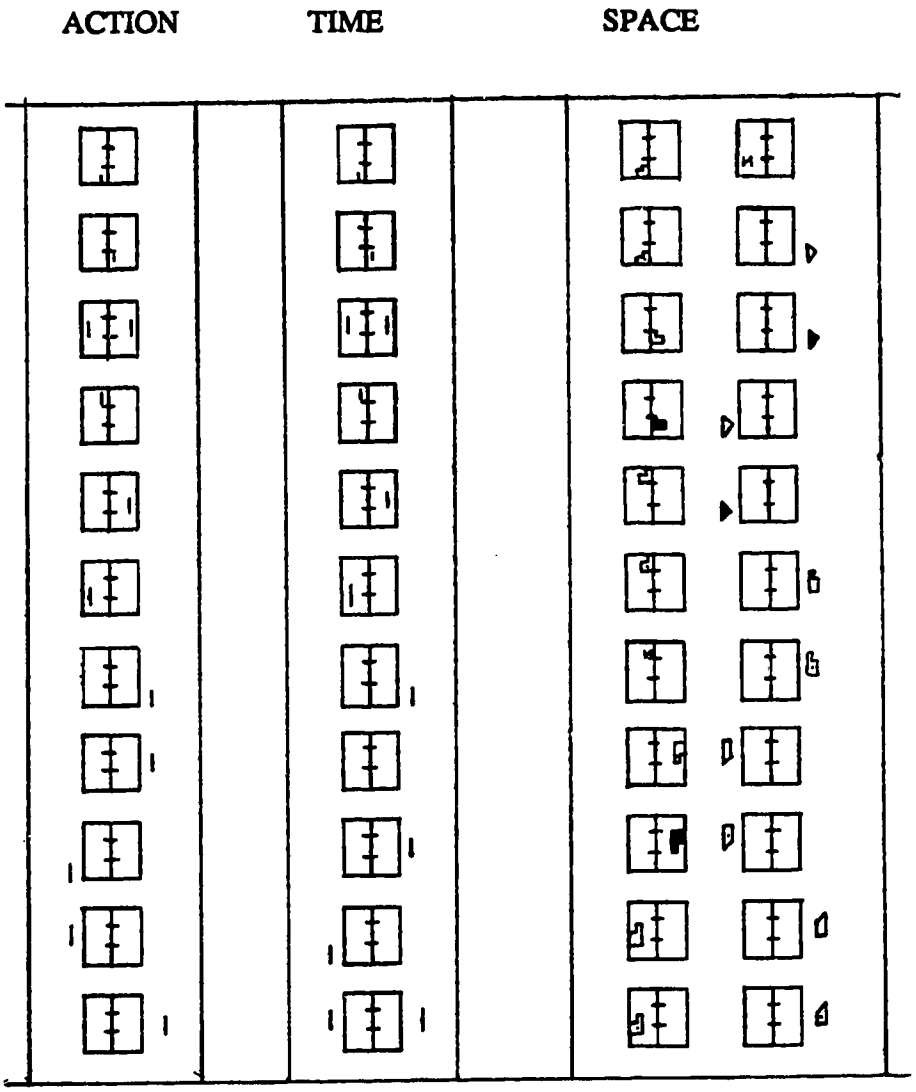


Figure 13. Method of Recording Individual Features

	CH.	PARTICIPANTS							TOTAL		
		1	2	3	4	5	6	7	AG.	DIS.	OM.
ACTION		a	a	a	a	a	a	a	7	0	
		a	a	do	a	a	a	a	6	1	
TIME		a	a	a	a	a	a	a	7	0	
		a	a	do	a	a	a	d	5	2	1
SPACE		a	a	a	a	a	a	a	7	0	0
		a	a	a	a	d	d	d	4	3	0
		a	a	a	a	d	a	a	6	1	0
		a	a	do	a	a	a	a	6	1	1
		a	a	do	a	a	a	a	6	1	1
		a	do	do	a	a	a	a	5	2	2
		d	d	d	d	d	d	d	0	7	0
TOTAL	11	10	9	5	10	8	8	8	58	19	6

a = agreement
d = disagreement
do = omission

Notation Scores-Bar 1
Choreographer & Seven Participants

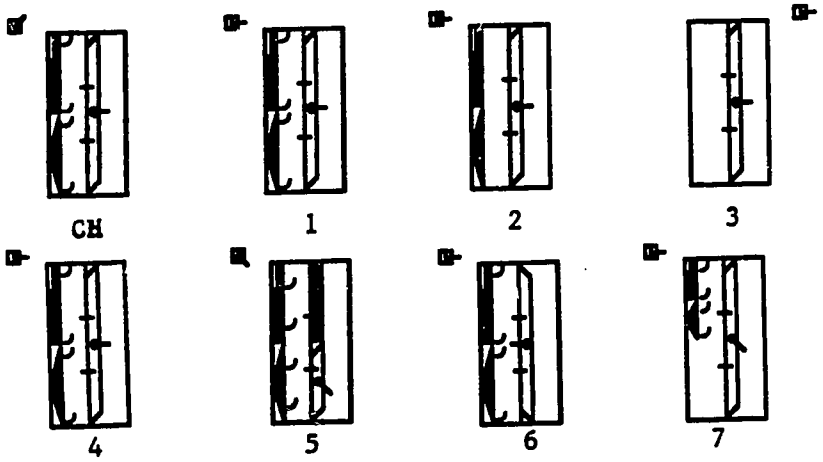


Figure 14. Example of the Scoring Procedure

In the first section, the initial recordings (notation scores) for each of the participants is outlined and discussed. The second section will then go on to discuss the agreements, disagreements, and omissions. These factors will be determined for each possible feature and bar, as well as for the total phrase. Once this analysis has been completed for the participants, the individual results will be considered in relation to the choreographer, "expert", and randomly-selected member of the group. Finally, the ratings of the second scorer will be considered. These analyses identified the major findings of the pilot study and provided an estimate of the value of the method for further investigation.

2. First Recordings

The participants were asked to note their first impressions of the modern dance phrase in a different coloured pencil. It was speculated that the participants would write down a group of movements which they felt were most important. It was also considered that these first recordings may isolate the significant features of the phrase.

Most participants used the notation script to make notes of their first impressions. However, in three instances (participants two and four, and the randomly-selected member) words were used to describe some of the movement content. For instance, the randomly-selected member described the sequence as "circular, impulsive, rhythmical, explosive", presenting an impression of the spatial and dynamic content.

In two cases, participants five and the "expert", the movement content was expressed in Motif Description, a method of recording general movement statements. This movement description usually involves the recording of major movement, and, in many

cases, provides a quick means of recording movement content. These two participants described the major features of the phrase as turning, travelling, jumping, and rising.

The majority of the participants recorded, in detail, the starting position of the dancer and indicated that a movement sequence of turn, travel, jump, rise, travel, and jump occurred. Participants three, four, six, and the "expert" recorded the final two phrases of the sequence, emphasizing the major features of a leap and forward travelling of the dancer to exit from the dance space. These statements indicated the major features of the phrase and reflected the categorization of elements within the notation system.

It is interesting to note that most participants recorded the facing positions of the dancer; in one case (participant seven), this was the only information recorded in the first impressions. The recording of the facing positions indicates that turning was an important feature of the phrase.

The analysis of the first writings revealed that the participants used structured notation, Motif Description, and words to describe their first impressions. In general, the participants provided information about the sequential actions of the phrase; turn, travel, jump, rise, travel, and jump. The spatial features of direction, pathway, and facing were also indicated. Some participants notated only a few actions of the phrase. The analysis confirmed that there is a consistency of features recorded. This may have been due to the participants' knowledge and experience in the notation system, but it may have also revealed that those features were the major features of the phrase.

Table III-1

Inter-Observer Agreements, Disagreements, and Omissions

Choreographer and Seven Participants

Pilot Study

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	20	140	124	16	13	81
1	11	77	57	20	6	30
2	34	238	150	88	22	25
3	21	147	81	66	42	64
4	28	196	74	122	89	73
5	23	161	85	76	25	33
6	53	371	175	196	169	86
7	23	161	105	56	25	45
8	44	308	173	135	81	60
9	28	196	82	114	83	73
TOTAL	285	1995	1107	875	555	
%			55	44	63	

Participants Percentage Scores For Total Phrase

1	2	3	4	5	6	7
46	54	67	56	59	46	61

SP = Starting Position

Table III-2

Inter-Observer Agreements, Disagreements, and Omissions

"Expert" and Seven Participants

Pilot Study

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	20	140	123	17	13	76
1	11	77	63	14	6	43
2	40	280	141	139	69	50
3	23	161	81	80	58	73
4	32	224	67	157	120	76
5	32	224	113	111	74	63
6	57	399	187	212	174	82
7	34	238	112	126	89	78
8	47	329	157	172	107	62
9	20	140	34	106	95	90
TOTAL	296	2212	1078	1134	805	
%			49	51	71	

Participants Percentage Scores For Total Phrase

1	2	3	4	5	6	7
46	46	61	53	58	45	55

SP = Starting Position

Table III-3

Inter-Observer Agreements, Disagreements, and Omissions

Randomly-Selected Member and Seven Participants

Pilot Study

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	14	98	94	4	1	25
1	11	77	62	15	6	40
2	39	273	170	103	56	54
3	23	161	88	73	56	77
4	24	168	86	82	59	72
5	40	280	126	154	110	71
6	45	315	150	165	113	68
7	35	245	146	99	60	61
8	36	252	156	96	57	59
9	13	91	19	72	40	56
TOTAL	280	1960	1097	863	558	
%			56	44	65	

Participants Percentage Scores For Total Phrase

1	2	3	4	5	6	7
58	50	58	50	61	54	64

SP = Starting Position

3. Analysis of Notation Scores

The notation scores of the participants were compared and analyzed with those of the choreographer, "expert", and randomly-selected member of the group. In each situation the responses of the group were considered individually and collectively. Tables III-1, III-2, and III-3 contain the detailed information. Based upon this analysis, the following results were found.

a. The total number of features identified by the choreographer, "expert", and randomly-selected member varied (285, 296, and 280 respectively). However, there was agreement regarding the major features of the dance phrase. The differences may have been due to the fact that whilst the choreographer composed and had time to consider the content of the modern dance phrase, the "expert" and the randomly-selected member did not. The additional features identified by the "expert" were detailed modifications of the movement content.

b. In the majority of cases there were more agreements than disagreements in both the individual responses and group responses.

c. It was found that the majority of disagreements (63%, 71%, and 65% respectively) were omissions of information in the notation scores.

d. It was found that in the analysis of individual features there was a high level of agreement in: major actions of stepping, turning, and jumping; gestures of the

arms, legs, and torso; and, direction and level of all actions of the whole body and of the parts of the body.

e. In general, disagreements on individual features occurred in the following two ways: firstly, in the modifications of actions, especially in the size of the actions and in the relationship between body parts; and secondly, in the room, hand, and head facings. The majority of these disagreements were omissions of information, perhaps due to the following factors. The first of these pertains to the shape of the room (which was hexagonal) and the relationship of the notator to the centre of the room. This may have affected decisions about rotation and facing indications. Second, the use of video-recording prevented a clear sensation of the three-dimensionality of the movement. And third, the time allocation may not have been sufficient for the inclusion of specific details of the minor movements.

f. It was found that the participants accurately recorded the groups of movements but did not place them in the exact timing. Timing indications are often left until later in the recording process. In the first stages of the recording process the general flow of the movement may be the only timing information recorded. It is only later that specific timing might be added. Thus the inexact recording of timing information may have been due to the total time allocated for the recording process, that is, it did not allow for detailed checking or readjustment.

g. The analysis of the agreements, disagreements, and omissions for the starting position and each of the nine bars revealed that, in the majority of cases, there were more agreements than disagreements. Where there were more disagreements

than agreements it tended to be in those bars where there were a greater number of features; for instance, in bar six, each of the three criterion notators identified 53, 57, and 45 features respectively. These errors may have been due to the time factor or may be a reflection of the participant's decision that such detail was not required. For instance, in bar nine, most participants recorded the dancer's exit with a general stepping and ad. lib. indication.

h. In the analysis of the total scores for the complete phrase for each participant, it was found that there were more agreements than disagreements. The percentage of agreement per each dance phrase ranged from 46%-61%, 46%-61%, and 50%-64% with the criterion observers respectively.

D. The Second Scorer's Analysis

The notation scores were also analyzed by a second scorer. The purpose of this was to confirm the findings of the researcher and to provide further evidence of reliability. The materials were sent to the second scorer and included: each of the scores of the choreographer, "expert", and randomly-selected member of the group; and, four randomly selected scores from amongst those of the seven participants. The results of this procedure revealed a high level of agreement -- ninety-four per cent. Where disagreements between the researcher and second scorer occurred, they were due to the following discrepancies in the participants' scores:

a. in the starting position for example, participant one wrote the position of the arms as  ;

b. in bar one, participant one indicated a lowering of the centre of gravity and then a turn;

c. in bar two, participant three wrote the position of the torso as a chest indication;

d. in bar two, participants four and six omitted the arm contraction before the high lift to the side of the body;

e. in bar three, all participants indicated a spring;

f. in bar three, the "expert" indicated an ad. lib. for the arms whereas the majority of participants omitted this;

g. in bar four, the majority of participants wrote that there was equal weight on both feet instead of weight on the left foot and a gesture of the left foot;

h. in bar five, participants wrote a lower level of left leg position;

i. in bar eight, there were differences in the timing of the leap; and

j. in bar nine, there were general indications for the exit.

The researcher had acknowledged certain discrepancies in the participants' notation scores and had accepted them as being the result of the structure of the recording session. The second scorer noted these differences as being notations that did not exactly agree with the three criterion scores. However, the researcher felt that the particular notations used in these circumstances had secured the movement content of the modern dance phrase. Therefore, they would be acceptable in a notation score written for reconstruction purposes as they do not cause a significant discrepancy in the movement.

E. Discussion

The results of this pilot study supports, from a descriptive point of view, the reliability of the notation system. It did not reveal high levels of agreements in all areas, although the majority of disagreements that did occur were mainly due to omissions of individual features. These omissions may have been due to the following factors: the choices made by the participants; the limited time for the recording process; the video-recording being played for the group and not for the individuals; and, the time for consideration and preparation of the finished score was short. Time is an important factor in the recording process. Even though a short dance phrase was used, it became evident that more time was needed for each participant to complete a notation score.

In conclusion, even though the inter-reliability was low, there were positive results of this pilot study. It indicated that this method of assessing the reliability of recording movement has considerable merit. The reasons for the disagreements and omissions in the recording of the modern dance phrase have been outlined and it is recognized that it is impossible to eliminate some of the problems encountered in the notating process. Therefore, one of the key ways in which the reliability of the system could be further substantiated could be through the replication of the described pilot study. This is contained in the next chapter. Further support for the reliability of the notation system could also be demonstrated in the agreement among readers in the reconstruction of a dance. A third study which considered the accuracy of the notation system follow as chapter 5. A fourth study explored the use of the notation system in the recording in other movement domains (Chapter 6). These studies provided further analyses of the various

procedures involved in the notation process and their reliability in the recording and reconstruction of movement.

Bibliography

Armelagos, A. & Sirridge, M. (1978). The identity crisis in dance. Journal of Aesthetic and Art Criticism. 37. pp.130-131.

Bartenieff, I., Hackney, P., True Jones, B., Van Zile, J. & Wolz, C. (1984). The potential of movement analysis as a research tool: a preliminary analysis. Dance Research Journal. 16/1. Spring. pp.3-26.

Cohen, S. J. (1982). Next week. Swan Lake. Reflections on dance and dances. Connecticut: Wesleyan University press.

Goodman, N. (1976). Language of art. An approach to a theory of symbols. Indianapolis: Hackett.

Hutchinson Guest, A. (1984). Dance notation. The process of recording movement on paper. London: Dance Books.

Laban, R. (1956). The principles of dance and movement notation. Plymouth: Macdonald & Evans.

Van Zile, J. (1983). How much does a score say? Proceedings of the 13th International Council of Kinetography Laban.

Van Zile, J. (1984). What is dance? Implications for dance notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Venable, L. (1983). Korean project, the OSU perspective. Proceedings of the 13th International Council of Kinetography Laban.

Youngerman, S. (1984). Movement notation systems as conceptual frameworks: the Laban system. In M. Sheets-Johnstone (ed.) Illuminating Dance. London: Associated University Presses.

CHAPTER 4

A STUDY TO INVESTIGATE THE RELIABILITY OF THE LABAN SYSTEM OF NOTATION IN THE RECORDING OF DANCE

A. Introduction

1. Opening Comments

The responsibility of constructing a score which will secure the integrity of a dance work rests with the notator. Professional choreographers rarely record their own work, nor do dancers commit their parts to paper. In general, memorizations or video-recorded versions are the only records of the movement content of a dance work. There have been many situations where the memories or video-recorded versions have been useful and declared successful; however, there are also many instances where details have been omitted, or the version has strayed from the original content. It is the notator who attempts to make a reliable and permanently accessible record.

The notator plays a creative and interpretative role by translating the movement and structural components of a work into the written language of the notation system. There is a close relationship between the dancer and choreographer as a revival or new work is undertaken. The notator becomes the third, integral part of that process of reviving or creating a dance work. As rehearsals progress, the notator acts as a communication link between the choreographer and dancer. The notator must avoid interfering in the making or restaging of a dance work; or, as Cuncliffe (1986) pointed out, the notator must not "precipitate choreographic discussion" (p.127). Rather, the

notator is to assist the choreographer by documenting movement and structural content, and by drawing the choreographer's attention to any discrepancies. The notator can also clarify issues of a movement and structural nature for the dancer.

Cook (1977) stated that the notator has "four artistic responsibilities: towards his [sic] art; towards the choreographer; towards the world he is recording for; and towards himself" (p.1). The notator is in sole charge of committing to paper the intent, that is, the idea and content, of a dance work. As Hutchinson Guest (1984) wrote, "every detail that is important has to be decided on and included in the notation" (p.124). Therefore, as the choreographer is rarely able to read or write in the notation script, the relationship between the choreographer and notator becomes a sensitive and special one. The notator acts as an interpreter and mediator of the choreographer's ideas.

As Marion (1984) described it, the notator's role is one where s/he

> . . . must not only determine the level of detail to include in a score in light of decisions made about its potential for future use, but also determine the choreographer's intention and kind of descriptive device that best suits the movement. (p.37)

In order to make such decisions the notator must not only be knowledgeable in the notation system, but also needs to be cognizant of the choreographer's previous works. As well, the notator must be familiar with the choreographer's particular movement style and intent.

Cuncliffe (1986) explained the process of working with Van Manen, the choreographer, on four of his major ballets. She described Van Manen as "verbally

specific" and that "he requires his dancers to perform exactly what he sets with no variation beyond the unavoidable minimum detailed by physique" (p.128). Because Van Manen was so clear in communicating his intention and was "conscious of and skilled in his method of achieving it", Cuncliffe believed that this enhanced the recording process (p.128).

Not every situation is the same, nor does every choreographer work in the same way. For instance, Horwitz (1989) outlined the Balanchine project, which was

> . . . to notate eighteen ballets by George Balanchine germinated whilst the great choreographer was alive. Its completion, after his death, was thus even more significant to the overall task of preserving his work. (p.1)

Here the works would be recorded from the memories and perceptions of his former dancers who have been entrusted with specific works. Doris (1988-89), one of the choreographers involved in the Balanchine project, attended rehearsals and technique classes in order to "observe and identify those characteristics that define the special quality we associate with the New York City Ballet" (p.7).

The notation score should offer some guidance to the reader. Challet-Haas (1989) considers the notator's task to be to "record and submit in a comprehensible way a sum of actions to be performed by somebody else" (p.1). The notator must analyze what is seen and attempt to grasp the motivation behind the movement content. There is a need to understand the detail within the full movement context of a dance performance. Adshead (1988) felt that this could only happen if the notator appreciated the purpose of a dance work and its impact for both the dancer and spectator. She wrote that

> . . . it is a question of learning how to think, feel and react as the people who perform and watch the dance would, in order to understand which movements are more important and which less than others. (p.25)

Notators spend considerable time observing dance, and then, in consultation with the dancers and the choreographer, establishing the ideas and movement content of that dance work. The process involves jotting down the material of a day's rehearsal, checking it through at a later time, and then adding more detail as further rehearsals are seen. All notes are kept until final decisions have been made. At this stage the jottings and notes can be transferred into draft form. Ideally, at this point, the score should also be checked by the choreographer. Unfortunately, few choreographers are fluent in the notation system and thus the notator makes the final selection of detail and method of writing. This means that the scores available are generally the interpretations of the notator and, as such, may not entirely reflect the intent of the choreographer.

The draft is then checked by a second notation expert for inconsistencies and ambiguities. At this time details of content and methods of writing may also be revised. The content is now ready for the final stage, the preparation of a publishable document. The usual process for this stage involves the production of a pen and ink score, a process which has proved to be tedious. However, with the introduction of computer programmes, this stage can be more efficiently and quickly completed. The score is now ready for publication and use by the choreographer or interested scholars and dancers.

Thus a completed score is the result of: careful study and examination of the movement content; consultation with the choreographer and dancer; and a final checking

of the written manuscript. Cuncliffe (1986) specified the content of the final manuscript. It should contain

> . . . all the necessary information to enable a faithful reconstruction of the work, including an accurate analysis of the movement, rhythm, floor patterns, spatial relationships, manipulation of props, and any other factors relevant to a particular work" (p.136).

Despite the time spent constructing the score, there is always a fear of inaccuracy and misunderstanding. Van Zile (1979) described an experience in which she compared her notation scores of some Japanese folk dances with the notation scores of a professional notator. She wrote that,

> I placed the two sets of scores side by side and quickly became horrified. My scores were so sparse and undetailed that fears of my notation incompetence emerged. (p.30)

However, after further scrutiny of the notation scores she discovered that "this was not a question of accuracy versus inaccuracy, but one of one version of a dance versus another" (p.30). Van Zile explained that the professional notator unfamiliar with Japanese folk dance had written a detailed notation score which included the "stylistic idiosyncrasies of the teacher" (p.30). A notator familiar with the style would be able to separate out the idiosyncrasies and record only the essential features of the dance.

Knowledge of a dance style is significant in that it will permit a recording of the essential features of a composition. In the example quoted above, Van Zile provided a prescriptive score whilst the professional notator produced a descriptive score. A

prescriptive score assumes that the reader has knowledge of the conventions and stylistic components of the dance form. The score will contain the essential ingredients of the dance work, that is, those elements which must be present if it is to be recognized as an instance of that work (Goodman, 1976, p.127). It implies that the notation score exists separately from a performance. On the other hand the descriptive score exists as a result of a specific performance. It describes the events of that performance. This implies that the notation score will not allow for interpretation by a performer of a work.

These two methods of analysis and writing are separate, but related aspects, of the presentation of a dance work. The prescriptive score contains: the observable elements and core characteristics of a dance style; and the components of a composition. A descriptive score will outline the performer's perceptions and individual interpretations of the style and of the composition. Each method has value and relevance in dance study and in the preservation of dance works. Both prescriptive and descriptive scores require correct analysis and a true recording of the style and choreography. This in turn necessitates knowledge of both the dance form and the notation system, as well as a clear understanding of the purpose of a notation score. This will preclude errors and ambiguities in the score, thus conveying the essential components of a work and defining the degree of interpretation allowed in a reconstruction.

2. Changes Made in the Replication Study

The purpose of this study was to extend previous research into the reliability of the Laban system of notation. Following the analysis of a pilot study (see Chapter 2), the

researcher felt that a procedure had been identified which would assist in the assessment of the Laban system of notation. Therefore, it was decided to repeat the pilot study with the proposed modifications.

It was acknowledged that specific factors affected the outcome of the notating process in the pilot study. These factors were: the allocation of time for the notating process; the participant's knowledge and experience of the dance form being recorded; and the use of videorecording. Therefore, certain changes were made to the design for this study. The allocation of time, which was considered to have affected the notating process, was modified so that the participants in this study could have as much time as necessary to produce a finished score.

A further change implemented was in regards to the form of dance being notated. It was conjectured that the notation process might be easier if the dance form was familiar to the participants. In this study, therefore, two dance forms were used to test this idea, as it was felt that this would not affect the accuracy of the recording process. The results of such a study would provide further, significant evidence of the scope of the notation system and of the ability of notators trained in the system to observe and analyze different movement forms.

It was found that one factor was not amenable to change. This related to the use of videorecording. This was unavoidable as the majority of participants were in different locations, which made it difficult to have a live performance. Due to this situation direct access to the choreographer or dancer was also restricted. Above all, the key reason for using a videorecording was to provide an exact and repeated performance of the dance

phrases so that variations or changes would not add variance to the notating process.

B. Methods

1. The Notation Process

This second study required the participants to record two short ballet phrases and one modern dance phrase for reconstruction purposes. It was anticipated that the participants would produce prescriptive scores, scores which should contain the essential elements of the dance phrases.

The two ballet phrases were choreographed by a distinguished teacher of ballet and notated by the researcher. The notation was undertaken in consultation with the choreographer and then checked by an independent notator. The independent notator received the choreographer's word notes, the video-recording of the performance, and the notation score, in order to confirm the content of the notation score.

The modern dance phrase was choreographed by the researcher. It had been extensively used in the teaching of elementary modern dance technique for adult students. The phrase was also notated by the researcher and checked by the independent notator. This was accomplished in the following stages: firstly, the independent notator received the video-recording of the performance and the notation score; and, secondly, a discussion was held between the researcher and independent notator in order to confirm details.

The two ballet phrases, adage and allegro enchainements, and the modern dance phrase were choreographed so that they contained virtually the same number and type of features. Together, the two ballet phrases contained 505 features in total (222 and 283

respectively), while the modern dance phrase contained 545 features in total (see Figures 7 - 12).

Participants were sent a videorecording containing all of the dance phrases. They were instructed to return their notated scores as soon as they felt that they had produced an adequate record for reconstruction purposes. It is important to emphasize that they were specifically asked to provide a score for reconstruction purposes.

Three participants agreed to take part in this study. They were asked to provide information regarding both their notation and dance experience. These participants indicated that they had the following experience. The first participant indicated that she had more ballet than modern dance experience and had studied notation for just one year. The second participant acknowledged that she had extensive experience in ballet and notation, but very little in modern dance. The third participant stated that she had equal experience in ballet and modern dance, as well as four years of notation experience (see Appendix B).

The researcher acknowledged that this study might be limited by the fact that only three participants were able to take part and that their backgrounds in Labanotation varied. However, it was felt that there would be sufficient data to provide a base through which the reliability and validity of the Laban system of notation could be analyzed.

2. Rating Procedures

The choreographer's notation score was compared to those of the three participants. The first rating of the notation scores was undertaken by the researcher.

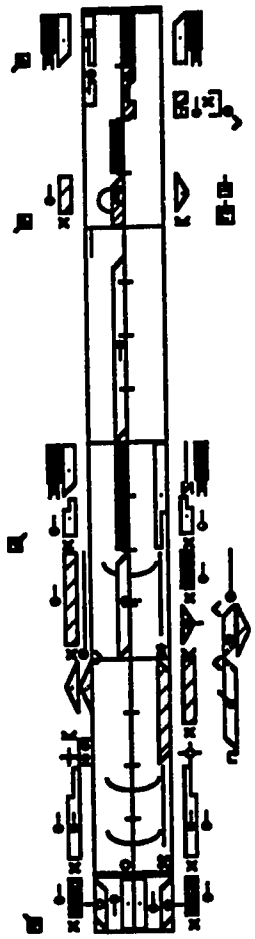


Figure 15. Ballet Phrase #1

Notation Score of the Choreographer

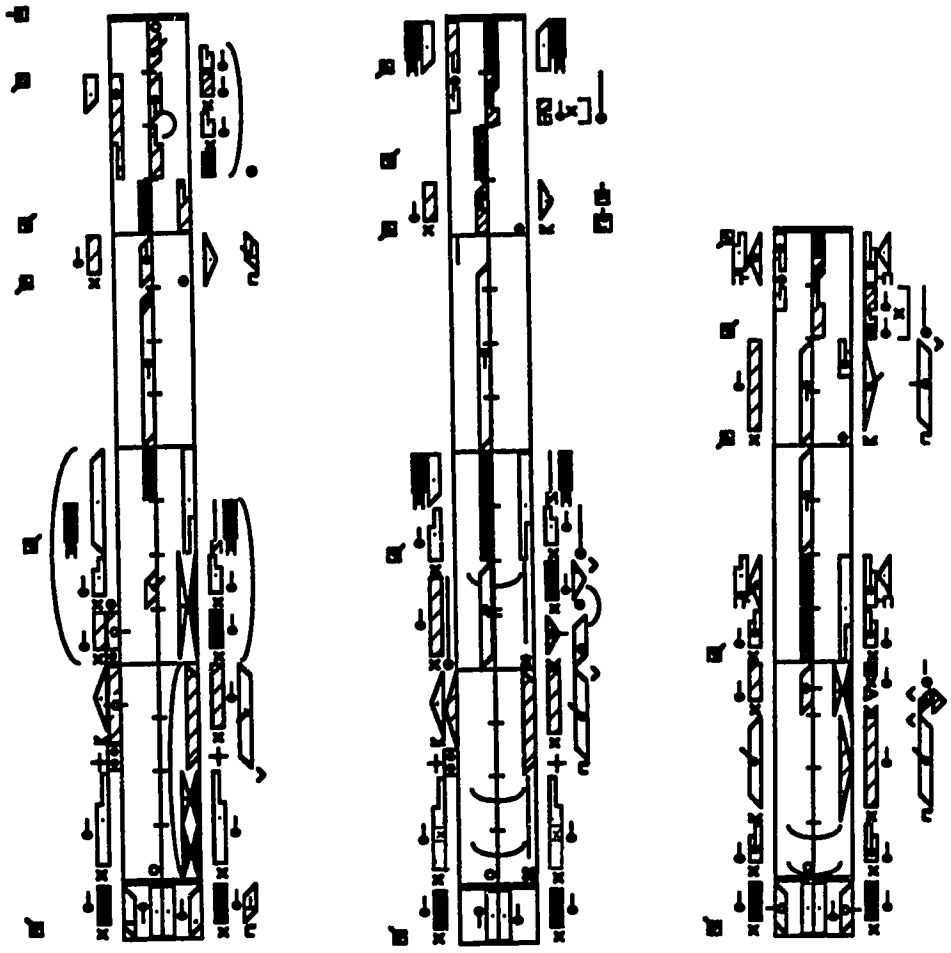


Figure 16. Ballet Phrase #1

Notation Scores of the Three Participants

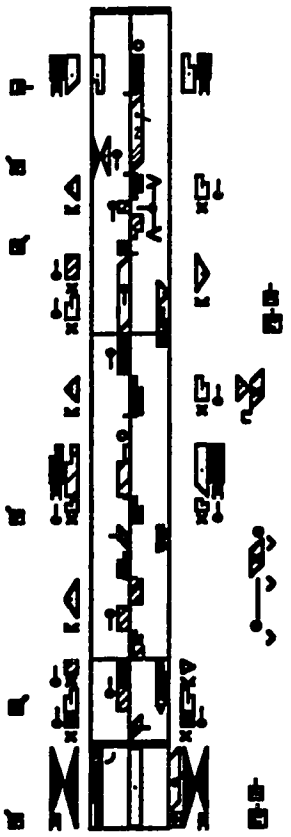


Figure 17. Ballet Phrase #2

Notation Score of the Choreographer

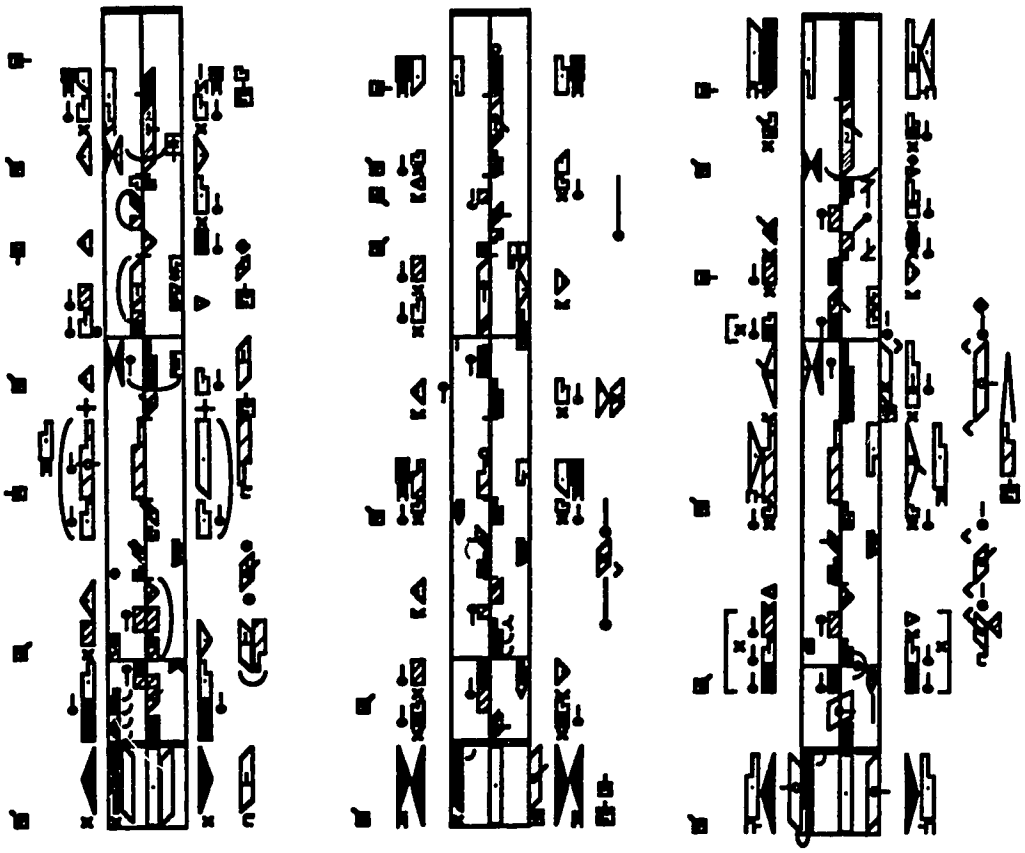


Figure 18. Ballet Phrase #2

Notation Scores of the Three Participants

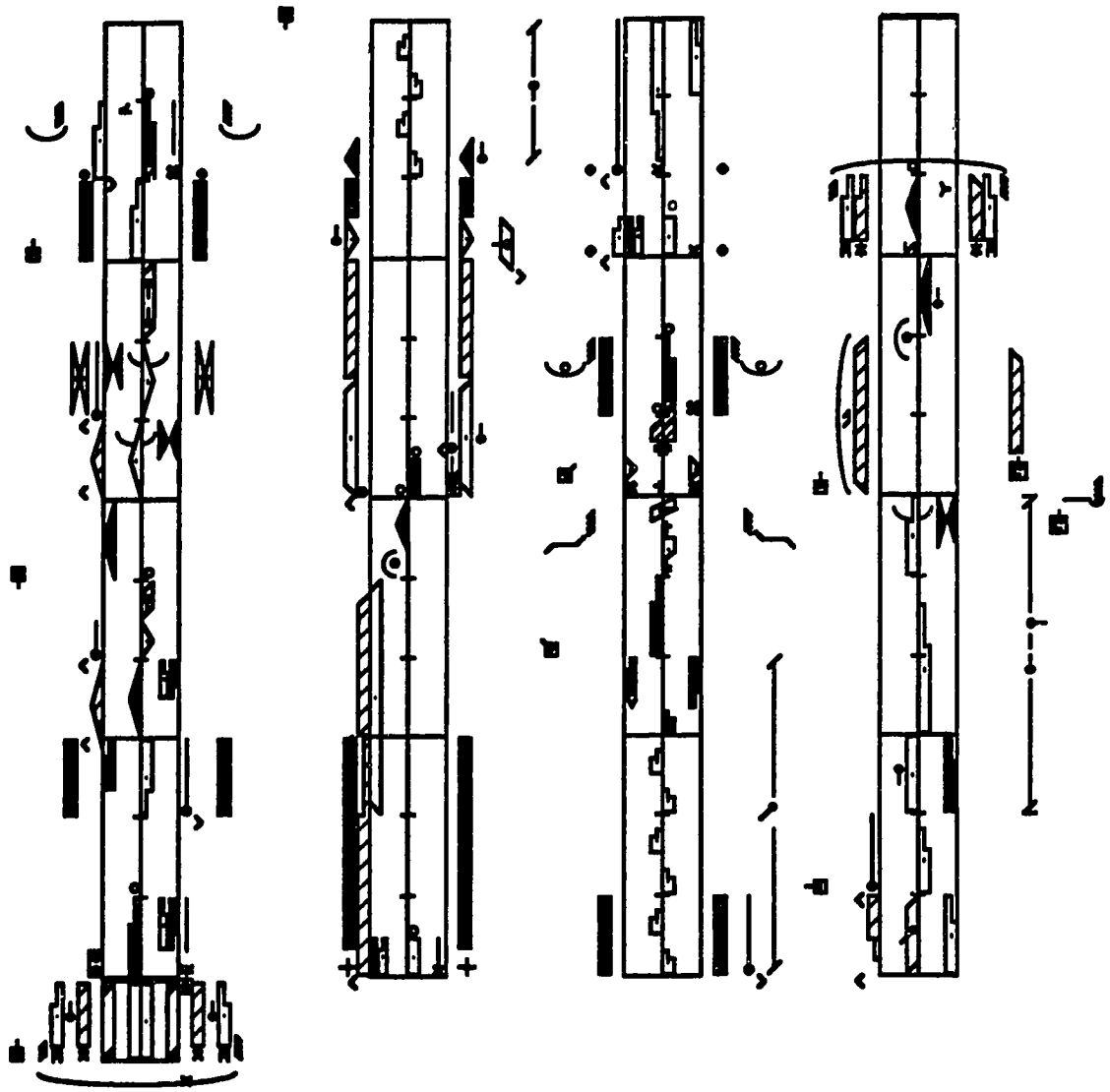


Figure 19. Modern Dance Phrase

Notation Score of the Choreographer

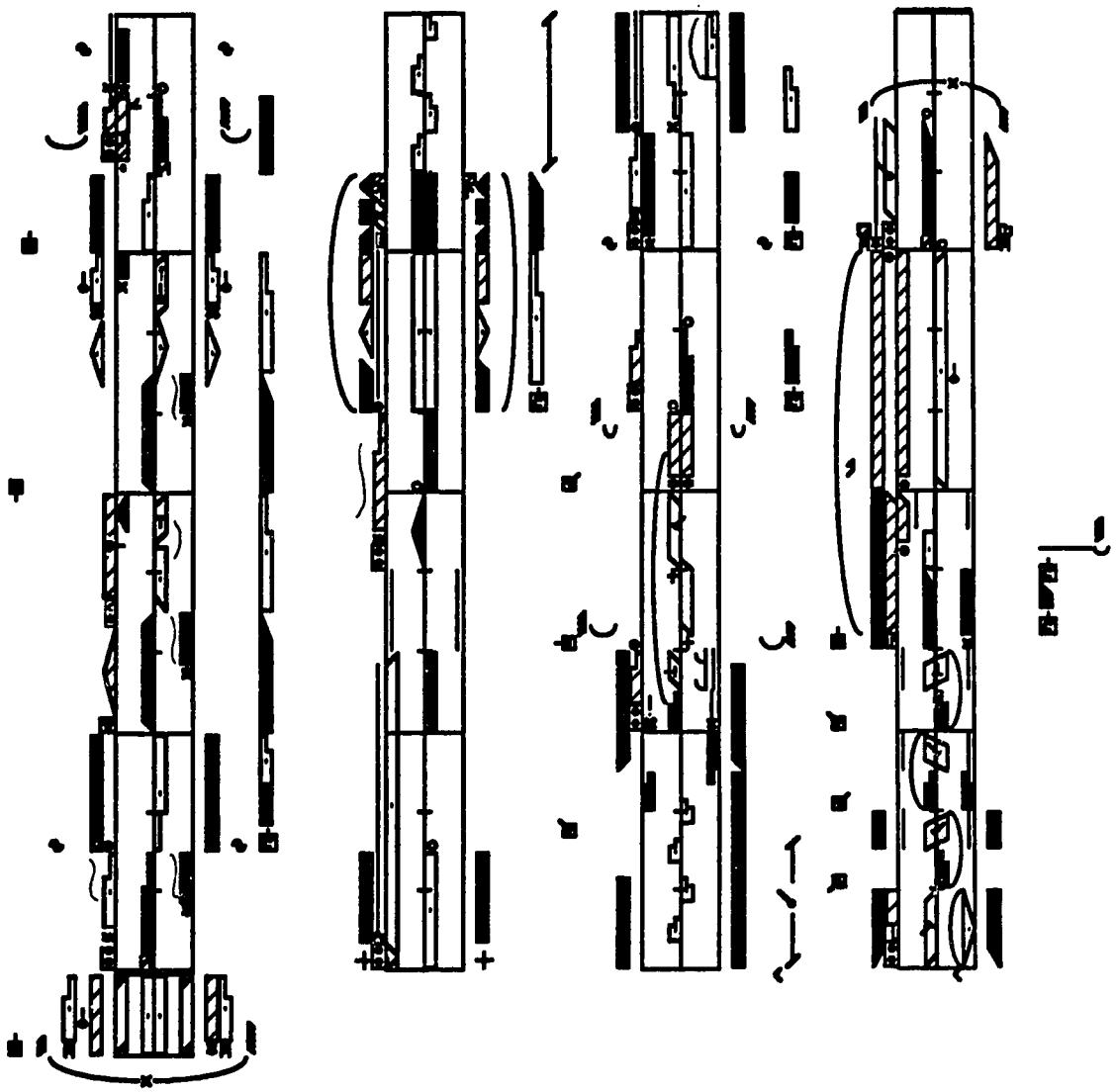


Figure 20. Modern Dance Phrase

Notation Score of Participant 1

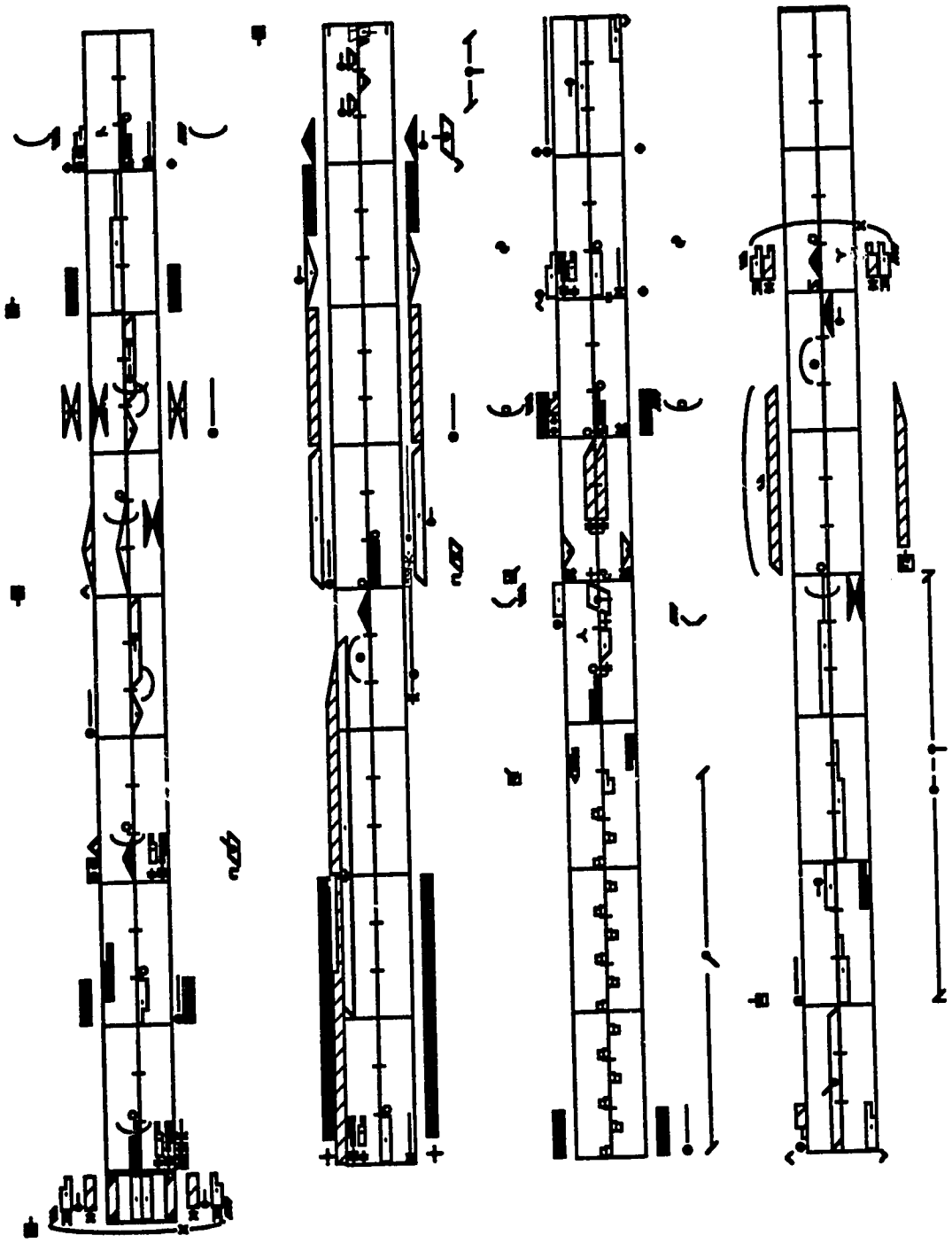


Figure 21. Modern Dance Phrase

Notation Score of Participant 2

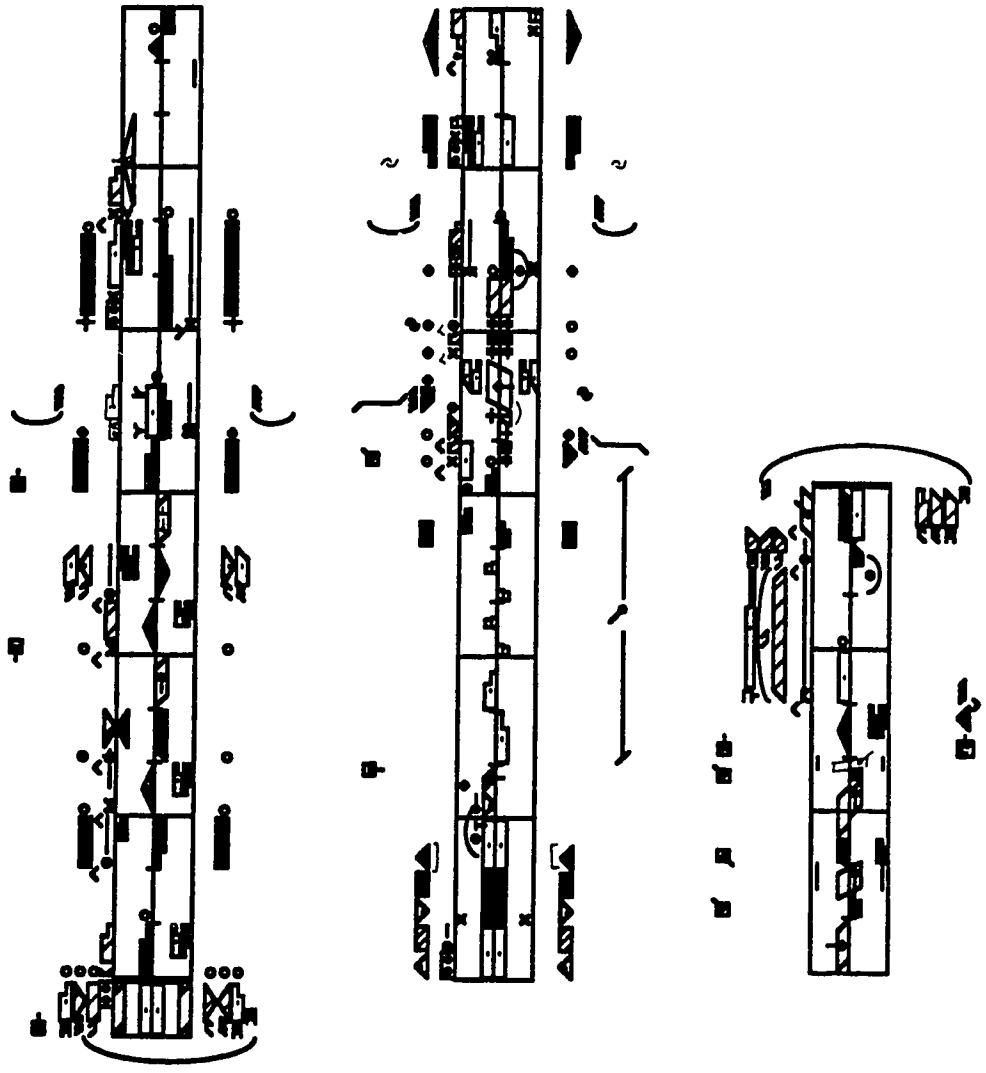


Figure 22. Modern Dance Phrase

Notation Score of Participant 3

It was considered that a second rating of the scores would verify the degree of reliability determined in the first rating. This second rating was carried out by a person knowledgeable in the Laban system of notation and who had been trained in the rating method identified in the pilot study.

The following procedures were implemented to ascertain the degree of reliability. Firstly, the content of the choreographer's notation scores (see figures 15, 17, and 19) for the ballet phrases and the modern dance phrase and those of each of the individual participants (see figures 16, 18, 20, 21, and 22) were identified. Secondly, the features of the notation scores were categorized and organized according to the analytic framework of the system. These are: actions of the body, such as gesture, transference of weight, and turning; rhythmic and dynamic elements, such as simultaneous and successive relationships, accent, and degree of tension; and, spatial elements, such as direction, level, size, and relationships. Each feature was identified and recorded within the specific categories of action, time, and space (see Methods, Chapter 2).

Finally, the notation scores of the choreographer and the group were further analyzed in the following two ways:

a. individual interobserver agreements, disagreements, and omissions were calculated and recorded on data sheets; and,

b. a group mean ($\bar{x}$) was calculated. The group mean would describe whether the participants could capture the majority of the features.

In both analyses agreements occurred if the information recorded by the individual participant corresponded directly with the content of the notation scores of the

choreographers (see Methods, Chapter 2). The agreements for each feature and the participants' total score of agreements for each of the dance phrases were recorded.

Two types of disagreements could occur, and were identified as follows:

a. notated material of the participant did not correspond with, that is, was found to be different from or was in addition to, that of the choreographers, or

b. notated material was omitted from the notation scores completed by the three participants.

From this it was possible to determine the degree of agreement, disagreement, and omission of features between the members of the group.

Interobserver agreements ("a"), disagreements ("d"), and omissions ("o") were recorded for each member of the group.

C. Analysis of Data

1. Introduction

The agreements, disagreements, and omissions were outlined for the two ballet phrases and then for the modern dance phrase. Agreements, disagreements, and omissions were determined for each possible feature and bar, as well as for the total phrase for each participant. In this way scores for each individual participant and for the total group were identified. Finally, the ratings of the second scorer were considered. It is proposed that these analyses will confirm the major findings of this study and confirm the procedure applied to assess the overall reliability of the notation system. The study also provided evidence of the reliability of the notation system in the recording of ballet and modern

dance movement forms.

2. Analysis of the Notation Scores

Two short ballet phrases were choreographed and notated for this study. The notation scores of the participants were compared and analyzed with the notation scores recorded for this research. In each situation the responses of the group were considered individually and collectively. Tables IV-4 and IV-5 contain the total and percentage scores for each of the individuals and for the group as a whole. Details of the scores for each individual participant, for each feature, are contained in Appendix B. Based upon this analysis, the following results were found.

a. Ballet Phrase #1

i. The total number of features identified by the choreographer was 222.

ii. In the starting position and in each of the four bars of the ballet phrase there were more agreements than disagreements in both the individual responses and the group response. In terms of agreements, individual responses showed interobserver agreement scores of 71%, 100%, and 73% with the choreographer's score. As the second participant was highly qualified and experienced in both the dance form and the notation system, it was anticipated that there would be a higher level of agreement. Therefore, there was support for the hypothesis that familiarity with the dance form would provide a better score. The first and third participants had less experience in both ballet and the notation system. The group response also showed a high level of agreement (82%).

iii. In the analysis of individual features there was a high level of agreement in the major

actions. These included stepping and turning movements. A high level of agreement was also found in the gestures of the arms, legs, and torso, and in the direction and level of all actions of the whole body and of the parts of the body.

iv. In general, disagreements in individual features occurred in two ways: firstly, in the timing of actions; and secondly, in the size and relationship of specific actions.

v. The first and third participants incorrectly recorded the timing in each of the four bars of the phrase. Such incorrect timing indications may have reflected the inexperience of those two participants. It may also have been due to the fact that the dancer performed without accompaniment. Even though the time signature was provided, the third participant stated that "it was difficult to detect timing as it was in silence" (Notes). The participants may only have been accustomed to recording dance with musical accompaniment and this would have made this task more difficult for them.

vi. In terms of the size and relationship of specific actions, it was found that the majority of disagreements were omissions of information. The following are examples of omitted details: in the starting position, participant one omitted the turn-out position for the legs; in bar one, participant one omitted the sliding of the leg gesture and participant three omitted the side tilt of the torso; and, in bar two, participant one omitted the touch in the leg gesture indication and the head position. These omissions may have been due to the fact that the two participants were experienced in the ballet style and considered the inclusion of such detail unnecessary.

b. Ballet Phrase #2

i. The total number of features identified by the choreographer was 283. In the analysis

Table IV-4

Interobserver Agreements, Disagreements, and Omissions

Choreographer and Three Participants

Ballet Phrase #1

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	22	96	94	2	2	100
1	41	123	105	18	8	44
2	72	216	172	44	19	43
3	7	21	16	5	2	40
4	80	248	185	55	28	51
TOTAL	222	696	572	124	59	
% SCORES			82	18	48	

Percentage Scores
For Each Participant's Phrase

1	2	3
71	100	73

SP = Starting Position

Table IV-5

Interobserver Agreements, Disagreements, and Omissions

Choreographer and Three Participants

Ballet Phrase #2

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	28	84	71	13	12	92
PR	38	114	89	25	4	16
1/1	22	66	56	10	3	30
1/2	40	120	104	16	2	13
1/3	22	66	43	23	6	26
1/4	28	84	71	13	2	15
2/1	33	99	75	24	6	25
2/2	33	99	68	31	11	35
2/3	13	39	28	11	7	64
2/4	26	78	62	16	1	6
TOTAL	283	849	667	182	54	
% SCORES			79	21	30	

Percentage Scores
For Each Participant's Phrase

1	2	3
76	86	75

SP = Starting Position
PR = Preparation

Table IV-6

Interobserver Agreements, Disagreements, and Omissions

Choreographer and Three Participants

Modern Dance Phrase

BAR	FEATURES AGREEMENTS	POSSIBLE AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS		%
SP	25	75	73	2	1	50
1	34	102	83	19	8	42
2	30	90	68	22	5	23
3	38	114	77	37	13	35
4	35	105	93	12	6	50
5	31	93	69	24	4	17
6	16	48	29	19	12	63
7	34	102	65	37	11	30
8	51	153	83	70	15	21
9	37	111	87	24	19	79
10	31	93	73	20	5	25
11	49	147	99	48	34	71
12	33	99	83	16	4	25
13	31	93	72	21	16	76
14	22	66	42	24	8	33
15	18	54	33	21	11	52
16	30	90	72	18	4	22
TOTAL	545	1635	1201	434	176	
% SCORES			73	27	41	

Percentage Scores

For Each Participant's Phrase

1	2	3
59	93	68

SP = Starting Position

Table IV-7

Summary of Interobserver Percentage Agreements

Three Participants

Ballet and Modern Dance Phrases

Phrase	Participants			
	1	2	3	Group
Ballet #1	71	100	73	82
Ballet #2	76	86	75	79
Modern Dance Phrase	59	93	68	73

of the features in this phrase it was decided to consider the individual beats of the two bars separately as each beat contained a considerable amount of detail.

ii. In the starting position, in the preparation phase, and in each of the four beats of the two bars, there were more agreements than disagreements. This was evident in both the individual responses and the group response.

iii. Collectively, the participants identified 79% of all of the possible features of the phrase. The fact that the participants did not record all of the features identified by the choreographer may have been due to the following factors: the notator had been able to discuss this ballet phrase with the choreographer; and, the participants may have also felt that they had identified the relevant details which would be necessary for a reconstruction of the ballet phrase.

iv. The individual responses revealed total agreement levels of 76%, 86%, and 75%. The most experienced of the three participants, both in the dance form and in knowledge the notation system, identified 86% of the possible features of the phrase.

v. In the analysis of the individual features it was found that there was a high level of agreement. This was most evident in the major actions of the phrase which included stepping and turning. Also, there was a high level of agreement in the gestures of arms and legs and in the direction and level of all actions of the whole body and of the parts of the body.

vi. Major disagreements occurred in the timing of the actions. In the preparation phase and in each of the four beats of the two bars, incorrect timing was recorded at some time by the participants. This may have been due to the fact that the phrase was complex, that

is, there was a great amount of detail to be captured in each beat. It may also have been due to the fact that the participants did not have much experience in the recording of ballet without musical accompaniment.

vii. Further disagreements were found in the facing indications and spatial modifications of actions. In two out of three cases these discrepancies were omissions of detail. The following exemplify these specific omissions.

(i) Facing indications were omitted in the following places. Participant one omitted the palm facing in the starting position and participants one and three omitted the palm facing in beat three of bar one. Further, participants one and three omitted the facing position in the room indication in beat one of bar two.

(ii) Spatial modifications were omitted in the following cases. Participants one and three omitted the chest indication in the starting position and the body hold in beat four of bar two. Participants two and three omitted the length of step in beat one of bar one. The third participant omitted the contraction of the arms in beat two of bar one. Finally, participant one omitted the folding of the left arm in beat four of bar one and the contraction of both arms in beat one of bar two.

These omissions may have been due to the complexity of the content of the ballet phrase and that participant's level of expertise in the notation system. They may also have reflected the choices of the participants regarding the necessary features required for the recording of a prescriptive score of the ballet phrase which could be used for reconstruction purposes.

c. Analysis of the Modern Dance Phrase

One modern dance phrase was choreographed and notated for this study. It contained approximately the same number and types of features as the ballet phrases. The notation scores of the participants were compared and analyzed with the notation score recorded for this research. The responses of the group were considered individually and collectively. Table IV-6 contains the total and percentage scores for the individuals and for the group. Details of the individual responses for each bar can be found in Appendix B.

i. The total number of features identified by the choreographer was 545.

ii. In the starting position and the sixteen bars of the modern dance phrase, there were more agreements than disagreements in both the individual responses and the group response. Individual responses revealed total agreement levels of 59%, 93%, and 68% (see Table IV-6). It was anticipated that the participants might not do as well in the recording of the modern dance phrase as they had little experience in that form. It is significant that participant two, who also had little experience in the modern dance form, had a high level of agreement (93%) in this dance phrase. However, this participant had considerable experience in the notation system.

iii. Collectively, the participants identified 73% of all possible features of the modern dance phrase. These were considered to be favourable results as the participants were not experienced in the modern dance form.

iv. A high level of agreement was found in the major actions of the modern dance phrase which included stepping and turning. Also, there was also a high level of agreement in

the indication of gestures of the arms, legs, and torso.

v. Major disagreements occurred in the following areas: in the timing of actions; in the direction and level of certain steps; and, in the direction and level of leg gestures. Some of these disagreements were omissions of details. For instance, in bars one, four, five, and eleven, participants one and three omitted the successive leg gesture indication; while in bar thirteen participant three omitted the leg gesture. Further omissions in the direction and level of step indications occurred in bars two, nine, fourteen, and sixteen.

This may have been due to the fact that the participants were not experienced in the modern dance form and were unable to capture the specific features of the phrase. It may also indicate the inexperience of two of the participants in the application of the notation system.

vi. It was found that further disagreements occurred in: the indications of body part actions; the spatial modifications of major actions; and the facing indications. In general, these discrepancies were omissions of detail. The following examples illustrate these omissions:

(i) Body part indications were omitted in the following instances: in bar three, participant one and three omitted the torso action and the touching action; in bar seven, participants one and three omitted the torso action; and in bar fourteen, participant three omitted the head indication.

(ii) Spatial modifications were omitted in the following instances: in bar twelve, participants one and three omitted the contraction of the leg gesture; and in bar sixteen, participant three omitted the length of step.

(iii) Facing indications were omitted in the following instances: in bar eight, participants one and three omitted the room facing indication; in bar fourteen, participant two omitted the facing indications for both the face and room; and in bar fifteen, participants one and three omitted the facing indication for the face.

Again these omissions may again have been due to the inexperience of the participants in both the modern dance form and in the case of the notation system.

d. Summary of the Analysis of the Ballet and Modern Dance Phrases.

The percentage agreements for the three participants and for the group in each of the dance phrases are summarized in Table IV-7.

In terms of the individual responses, the findings indicated that participant two, who was the most experienced of the three participants in knowledge of ballet and in the notation system, attained a high level of agreement in each of the dance phrases. It is interesting to note that this participant achieved 100% on the first ballet phrase and 86% agreement on the second ballet phrase. The lower value in the latter case may have been due to the complexity of the second phrase and to the fact that the participant felt that certain details would not be needed for reconstruction purposes.

In each of the recording situations, participant one who had the least experience in the dance forms and with the notation system, achieved the lowest level of agreement. These results were anticipated as the detail of content recorded would reflect the participant's knowledge of the form and system.

The group responses indicated a high level of agreement in both ballet phrases.

This was to be expected as the three respondents were knowledgeable in the ballet dance form. The group response in the modern dance phrase was lower due to the fact that the participants had the least experience in this form.

D. The Second Scorer's Analysis

The notation scores of the three participants were also analyzed by a second scorer. Materials sent included the notation scores of the choreographers and those of the three participants. The second scorer identified the number of agreements and disagreements between the participants' scores and those of the choreographers. These ratings were compared with the researcher's analysis and findings. The results of this procedure revealed a high level agreement between the second scorer and the researcher in each of the three dance phrases --95%, 95%, and 90%, respectively.

The following identifies where major disagreements occurred between the researcher and second scorer in the ballet phrases:

Ballet Phrase #1

The second scorer did not accept:

i. the level of arm, leg, and torso indications in bar one;

ii. the omission of torso cancellation and the spatial indications and timing of arm gestures in bar two;

iii. the timing of the turning action in bar three; and

iv. the omission of: a change of level in supporting, the spatial indication for the torso, a cancellation for the head action, and the level of a left leg gesture and

right arm gesture in bar four;

Ballet Phrase #2

The second scorer did not accept:

i. the indication of a lowering of the support and a different arm position by two participants in the preparation;

ii. the timing, level of support, and degree of turning, the writing of a head position, and the omission of a body hold indication in bar one; and

iii. the level of an arm position, a turning indication, and a facing indication in bar two.

Modern Dance Phrase

The second scorer did not accept:

i. that participant two recorded the modern dance phrase in a slower tempo;

ii. an omission of contraction in the arm position in the starting position;

iii. an omission of a body position in bar one;

iv. a difference in the writing of the run action in bar nine; and

v. an omission of a spot hold in bar twelve.

The researcher acknowledged certain discrepancies in the notation scores of the three participants. The second scorer recognized these discrepancies as errors. In discussions with the choreographers and independent notators of the three dance phrases, the researcher concluded that certain discrepancies would not hinder a faithful and accurate reconstruction of the dance phrases. This assumption refers particularly to the notation scores of participant two in each of the three dance phrases. The notation scores

of participants one and three resulted in prescriptive scores which contained the major features of the dance phrases for reconstruction. However, the exact timing of the movements and some of the minor details of the phrases were not included.

E. Discussion

In general, the findings of this second study produced positive results to support the reliability of the Laban system of notation. The importance of understanding and knowing in the dance form to be recorded, together with experience in the notation system, was addressed in the introductory section of this chapter. It was conjectured that those participants with knowledge and experience would produce more accurate notation scores.

The results of the recording task design supported this premise. It indicated that the participants were able to record successfully in both forms of dance. This was particularly evident in the notation scores of the second participant who scored high in all three dance phrases. This participant had extensive experience in ballet and had been involved for many years in the teaching and application of the Laban system of notation. Participants one and three had less experience with the notation system and both the dance forms.

The choreographers and notators involved in this study felt that the participants produced prescriptive scores of the dance phrases which could be used for reconstruction purposes. In all cases the major features were recorded. Errors in timing and omissions

of certain details were the major disagreements found in the notation scores of participants one and three. In this study, musical accompaniment was not used. This may have hindered some participants who have always worked with musical accompaniment. Accuracy in recording the details of a dance phrase require training and experience in both the notation system and the dance form and, therefore, some errors may have been due to the inexperience of some participants.

It was also felt that some discrepancies were the result of choices made by the participants. The notator translates the dance content into notation script, and in doing so, makes choices about the movements that must be contained within the final record. This factor must be taken into account when assessing a notation score.

The researcher felt that factors which had influenced the outcome of the findings of the pilot study had been addressed in that certain adjustments had been made in order to create a satisfactory situation for the testing procedures. Through the elimination of the major problem of time allocation and the procedure designed for assessing the content of the notation score it was possible to investigate and assess the content of the notation scores. It was also considered that the results of this study evaluated and descriptively discussed the underlying issues of reliability of the notation system in the recording process.

Bibliography

Adshead, J. (ed.). (1986). Dance analysis: theory and practice. London: Dance Books.

Balanchine, G. (1950). Recording the ballet. Dance Observer. November. pp.1-5.

Barracuda, K. (1988). Using Labanotation to record ideokinetic movement sequences. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.29-37.

Bartenieff, I., Hackney, P., True Jones, B., Van Zile, J., & Wolz, C. (1984). The potential of movement analysis as a research tool: a preliminary analysis. Dance Research Journal. 16/1. Spring. pp.3-26.

Bissell, R. L. (1970). Kinesics and context. Philadelphia: University of Pennsylvania Press.

Challet-Haas, J. (1989). Analytical approaches. European Seminar for Kinetography. Paper No. 2.

Challet-Haas, J. (1989).The use of retentions within the Laban system of notation. European Seminar for Kinetography. Paper No. 5.

Cohen, L. R. (1978). Introduction to Labananalysis: effort/shape. Labananalysis as a research tool. Dance Research Annual IX. pp.53-58.

Cohen, L. R. (1978). Labananalysis for the social scientist with a general systems perspective: Labananalysis as a research tool. Dance Research Annual IX. pp.145-151

Cuncliffe, E. (1986). Notating Van Manen's choreography: distinctive features. In J. Adshead (ed.) Choreography Principles & Practice. Study of Dance Conference 4. University of Surrey. pp.127-138.

Doris, V. (1988-89). A notator's view. Dance Notation Journal. Winter/Spring. pp.6-13.

Glaister, I. (1979). (ed.). Observation, analysis and recording movement. Report of the National Association for teachers of Further and Higher Education. Physical Education Section 1979 Annual Conference held at Chester College, Chester.

Hutchinson, A. (1966). The preservation of the dance score through notation. In W. Sorrell (ed.) The Dance Has Many Faces. New York: Columbia University Press.

Kagan, E. (1978). Towards the analysis of a score. A comparative study of Three Epitaphs by Paul Taylor & Water Study by Doris Humphrey. Essays in Dance Research. Dance Research Annual IX. pp.75-92.

Langrell, P. (1986). Documenting dance, the ephemeral art. Dance Notation Journal. Vol. 4. No. 2. Fall. pp.5-7.

Lockyer, B. (1989). Recording dance: a full and truthful record. Journal of the Royal Society for the Encouragement of Arts, Manufactures & Commerce. pp.705-709.

Weber, L. & Smoliar, S. W. (1978). Using a computer to prepare Labanotation scores. Dance Research Annual IX. pp.243-254.

Van Zile, J. (1979). Exploring notation as a research tool: implications of selected projects on Asian and Pacific dance. Proceedings of the Eleventh Biennial Conference, International Conference of Kinetography Laban.

Van Zile, J. (1981-82). Seeking notation solutions. Dance Research Journal. 14. 1 & 2. pp.53-54.

CHAPTER 5

A STUDY TO ASSESS THE RELIABILITY OF THE LABAN SYSTEM OF NOTATION IN THE RECONSTRUCTION OF A MODERN DANCE PHRASE

A. Introduction

1. Opening Comments

Reconstruction is the process of reading and reproducing the content and structure of a dance work from a notated score. As a dancer is rarely able to read a notation score, s/he learns the dance from the reconstructor. Thus the reconstructor becomes the translator of the information and the decision maker about the specific content and meaning of a dance work. In the situation of reconstructing a dance work the dancer is learning a new role and will be expected to present an authentic and spontaneous performance. This process has been compared to the act of creating a new dance work in which the dancer is rehearsed until s/he feels and understands the work.

Mindlin (1984) pinpointed the exciting culmination of the revival of a dance work when the dancer has challenged and yet honoured the work. The same inspiring performance can also be the result of a thoughtful and provocative interpretation from the notation score. Mindlin drew a parallel to this in the relationship between the score and an interpretation of the score when she stated that,

> . . . it is the tension that subsists between the score and interpretation, between tradition and the claims of individual insight, that generates that special kind of theatrical vitality . . . . It is the risks taken, not out of whim, but from deeply felt,

nurtured conviction, that dancers bring to life . . . . (p.14)

Dance is understood through the performer's interpretation, which directs the audience's attention towards the meaning and significance of a dance work. In a reconstruction, the notation score provides the means through which one account of the designated features of a dance work can be revealed. Such an account favours specific qualities and meanings of the features contained within the notation score. No single interpretation can be regarded as definitive and any evaluation of an interpretation will be based upon the experience of both the notator and the dancer.

There is an interest in and a trend towards reconstructing dances from earlier periods. This not only reflects the historian's interest in dance as an expression of our cultural heritage, but also illustrates the dance scholar's interest in the exemplary instances of choreographic form and structure. The fact that a score exists, which contains evidence of a dance work, presents four major problems in the area of reconstruction. Firstly, it implies that a fixed original exists. Secondly, it suggests that this can and must be duplicated. Thirdly, it proposes that the score's accuracy is a guarantee of historical truth. And fourthly, it implies that a score will reveal the spirit of a work. It is unrealistic to suggest that dance has been preserved in such a way, that every detail of a dance work can be written down, and that there should be no flexibility allowed in a performance.

Such premises affect the role of the reconstructor. A major question is whether the reconstructor is "slavishly bound to [the] choreographer's original intent" (Van Zile, 1984, p.9). The reconstructor's role has been compared to that of the orchestra conductor who "strives to be faithful to the spirit of the work, while needing to make certain decisions

based on his own artistic sense" (Hutchinson Guest, 1984, p.146). Dufrenne (1973) commented upon the required need for each performance to be exactly the same as the first and stated that this "would place an unfair restriction upon the reconstructor and dancer . . . [and] . . . on ourselves as audience" (p.16).

Mark (1981) stated that the problem of trying to capture the original inspiration of a work is that

> . . . whatever the source of inspiration of a work may have been, it is a thing of the past. The work itself is there, however, and comes to life everytime it is performed. It is reinvested with the living feelings of the performer. (p.268)

It is the task of the reconstructor to translate the score for the performer into form which becomes meaningful and accessible to the audience. In doing so, it is not the intention that the notator or dancer become the original choreographer or performer. Some of the references made on the scope of the score and on the role of the notator and performer in a reconstruction, have implied that there can be no leeway for interpretation and that there is no place for individual inspiration. However, some writers have been able to put into perspective the importance of accessing information about the choreographer's background and the relevance of understanding the philosophy of the choreographer. Careful research and consideration of a choreographer's works and career can assist in a faithful reconstruction of the work. Topaz (1986) discussed the importance of understanding a particular choreographer and his works. She wrote on reconstructing the works of Antony Tudor.

It is the responsibility of the reconstructor to recreate as much as possible the

> atmosphere and techniques of a Tudor rehearsal. One needs to know that Tudor studied Stanislavsky and Delsatre, that abhorrent above all is "acting" or being overtly "emotional" in his works. But, rather, one must "be" the character. (p.17)

The responsibilities of the reconstructor extend far beyond the translating of the movement content of a dance work for the performers. The reconstructor is often concerned with the original staging of the work. Resources such as filmed and videorecorded performances of a work, together with notes and writings about a work, will assist in this process. For a successful restaging of a work Cook (1977) wrote that the reconstructor is required to have a thorough knowledge of movement, professional experience in dance, and a knowledge of costume and lights (p.4,5). The reconstructor will be required to demonstrate the movements of the work, coach the dancers in professional stage management, and direct the complete production. Therefore, the reconstructor becomes the choreographer, dancer, director, and coach of a production.

The reconstructor encounters some constraints because of the way the score is written. Whether the score is prescriptive or descriptive will determine the degree of freedom of interpretation for the reconstructor and the dancer. It is the responsibility of the interpreter to restore whatever may be lost of the choreographer's inspiration and intent in the recording of a work. It must be accepted that the written symbols do not and cannot contain all "the subtleties of movement in their 'totality'" (Van Zile, 1984, p.18). It must also be recognized that neither the score nor the reconstructor can bestow upon the dancer the feel of movement. This can only come about by the dancer's own physical memory. This is the craft and skill of the dancer. All that can be provided is a guidance

and direction towards what the dance might be.

Again, some choreographers do impose strict limitations upon the reproduction of a work, demanding that there is only one way that a work can be performed. Even with the restrictions of a descriptive score, the reconstructor must be able to bring the score to life and assist the dancers in an interpretation of a work. Thus, whether using a prescriptive or descriptive score, the reconstructor must have the knowledge and talent to translate and interpret the information so that a performance will be recognizable and acceptable as an instance of a dance work.

Reconstructions of a current work, whilst creating some problems for the reconstructor, do not involve the issues particular to revivals from earlier periods. Woodruff (1970) explained that, in revivals, choices also have to be made. She further noted that the reconstructor has "the same risk, the same liberty, as in any choreography or stage direction" (p.24). Cohen (1982) discussed the anthropologist's point of view which urges the reconstructor to treat such dances as artifacts. This requires the study of the original periodic context, society, norms, music, and motivations so that, as much as possible, the reconstructors and dancers can absorb the emotional and physical habits of a different era and produce a version which is true to the style of a work. Thus a facsimile of the movement and style is all that can be produced. Balanchine (1976), when restaging Harlequinade, experienced the following difficulties;

> I hope that I succeeded in preserving the essence of Petipa's creations . . . though deviating from the letter, for it would be vain to try to reconstruct with archaeological exactness the forgotten "original" that he probably changed himself

from season to season. (Cohen, 1982, p.77)

This comment does not justify change for the sake of change. The fact that Petipa may have altered a movement or a pattern in his works "from season to season" does not give the reconstructor the liberty to make a change. Circumstances may prevent the total replicability of a work: a stage may be unable to accommodate a company; a dancer may be injured and there is no-one else to substitute for a performance; or the programme may not be able to include all the acts of a ballet.

These comments reveal quite clearly some of the specific problems and responsibilities of the reconstructor. Of major concern to those involved in the notation process, is to answer the question, can the score provide accurate guidance and direction towards completing a successful reconstruction? When notators have reconstructed dance works from their own scores they have found those reconstructions to be accurate. This is anecdotal evidence which still needs to be confirmed through scientific investigation. What is needed is evidence that a knowledgeable person can reconstruct a work from someone else's notation score.

Therefore, the purpose of this study is to investigate the reliability of the Laban system of notation in the reconstruction process. Specifically, the study sets out to test the meaningfulness of reconstructions by persons who were not involved in the writing of the original score. The findings may also present information regarding the validity of the notation system; that is, that the notation system is able to capture what it says it does. The participants in the study would also be the reconstructors and dancers of the selected dance phrase.

B. Methods

The study involved the reconstruction of a notated modern dance phrase. Five participants agreed to take part in the study. Each one received a copy of the notated score and a blank videotape. They were asked to produce an adequate reconstruction of the choreography contained in the score.

The modern dance phrase was comprised of a starting position and sixteen bars in a 4/4 time signature. The content was selected to reflect a modern dance style which had been used with beginning modern dance students. The phrase had been choreographed in 1981 and taught extensively by a group of modern dance teachers. It was notated at that time and rechecked during the preparatory stages of this study. The study emphasized certain basic actions of transference of weight, turning, jumping, and specific gestures of arms, legs, and torso. The phrase contained 875 features (see Figure 23).

The participants were also asked to provide information on their experiences and qualifications in notation (see Appendix C). In terms of experience with the Laban system of notation the participants ranged in experience from a minimum of eight months to a maximum of eighteen months. Two of the participants had extensive experience in ballet, but only two years in modern dance. One participant had extensive experience as a performer in modern dance. The other two participants only had two years of experience in both dance forms.

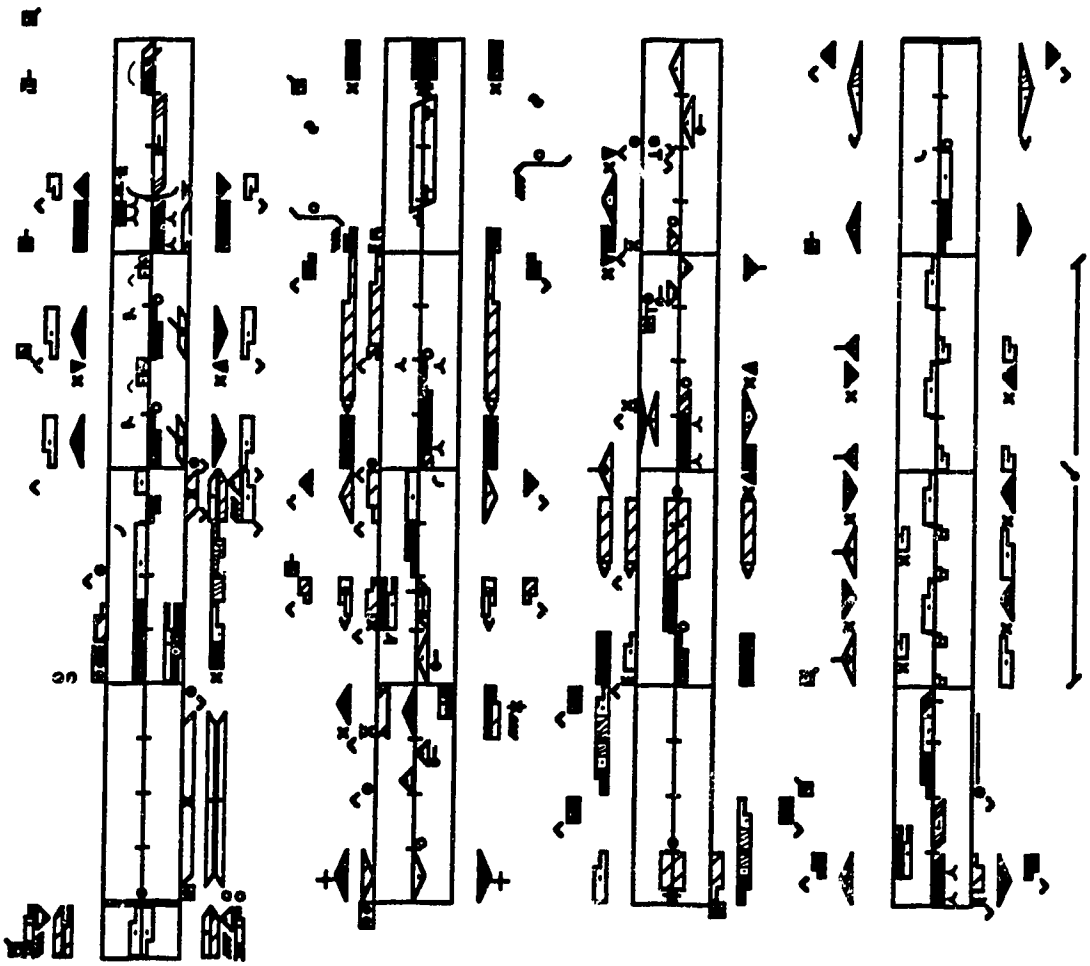


Figure 23. Modern Dance Reconstruction

Notation Score of the Choreographer

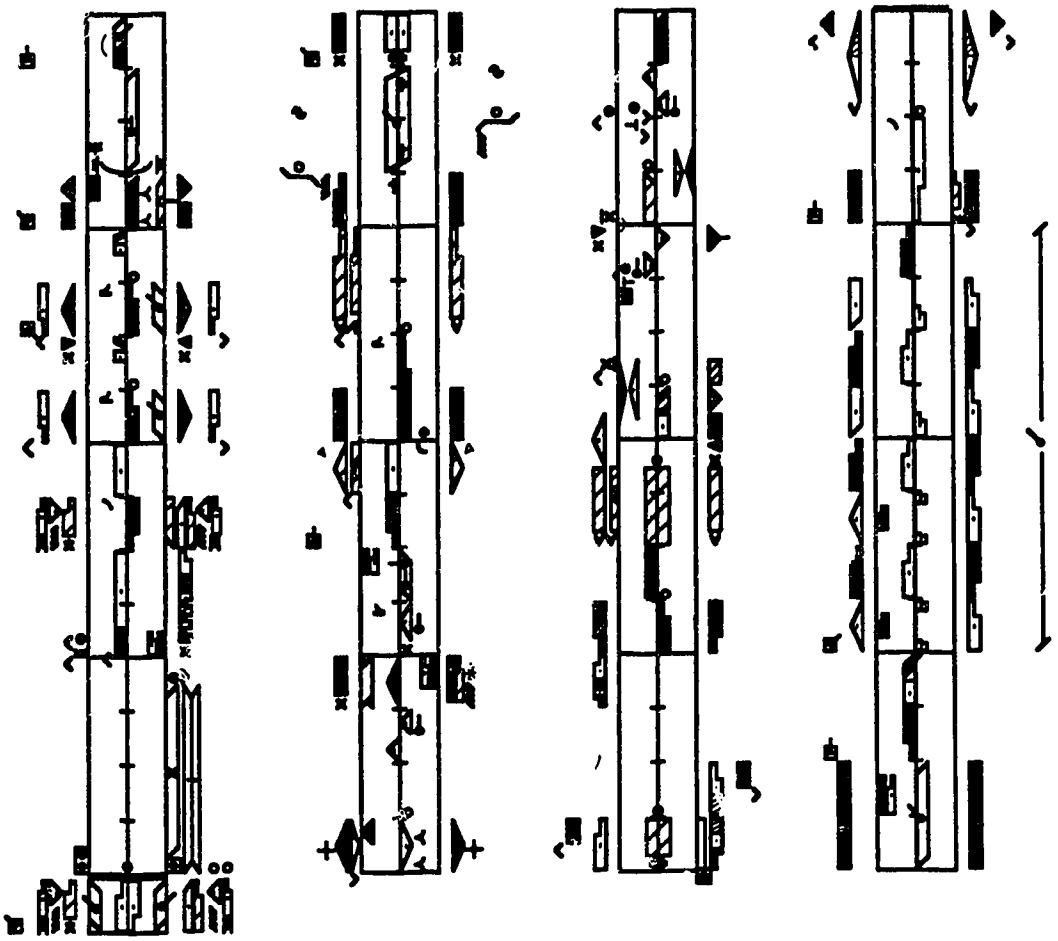


Figure 24. Modern Dance Reconstruction

Notation Score of Participant 1

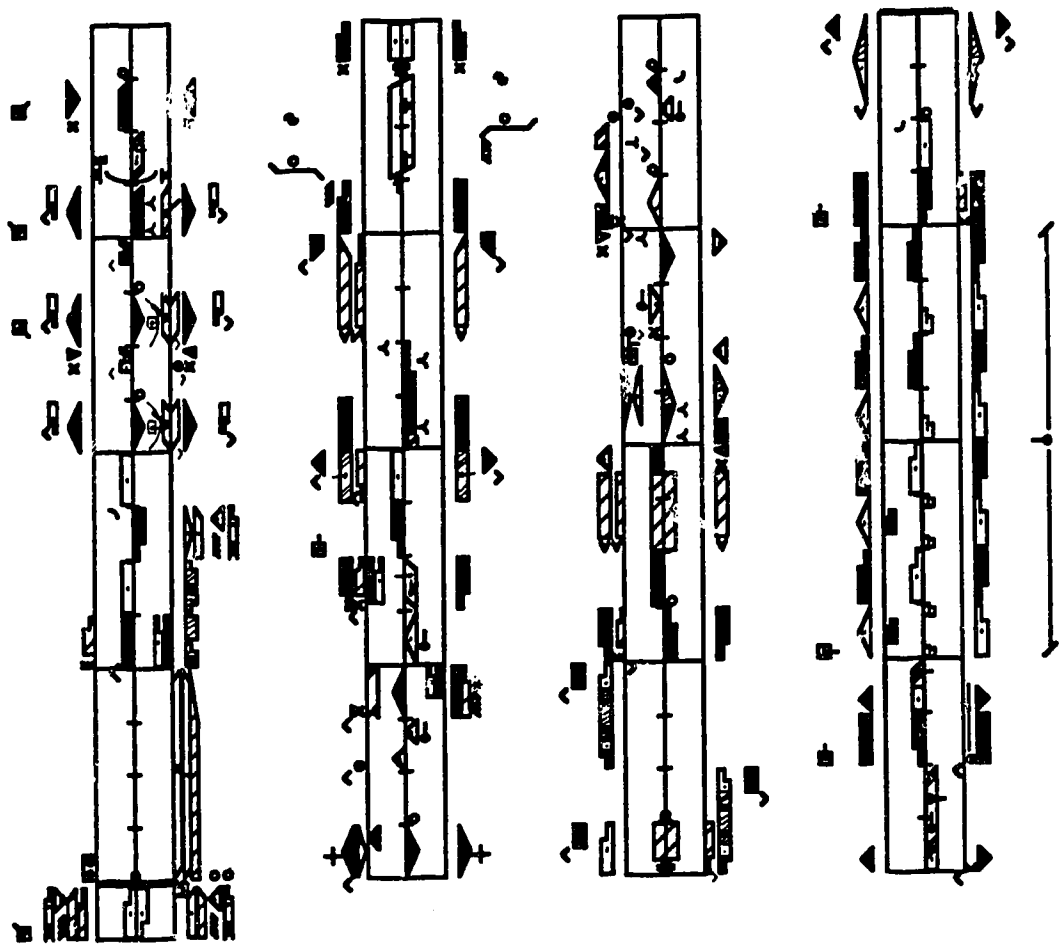


Figure 25. Modern Dance Reconstruction

Notation Score of Participant 3

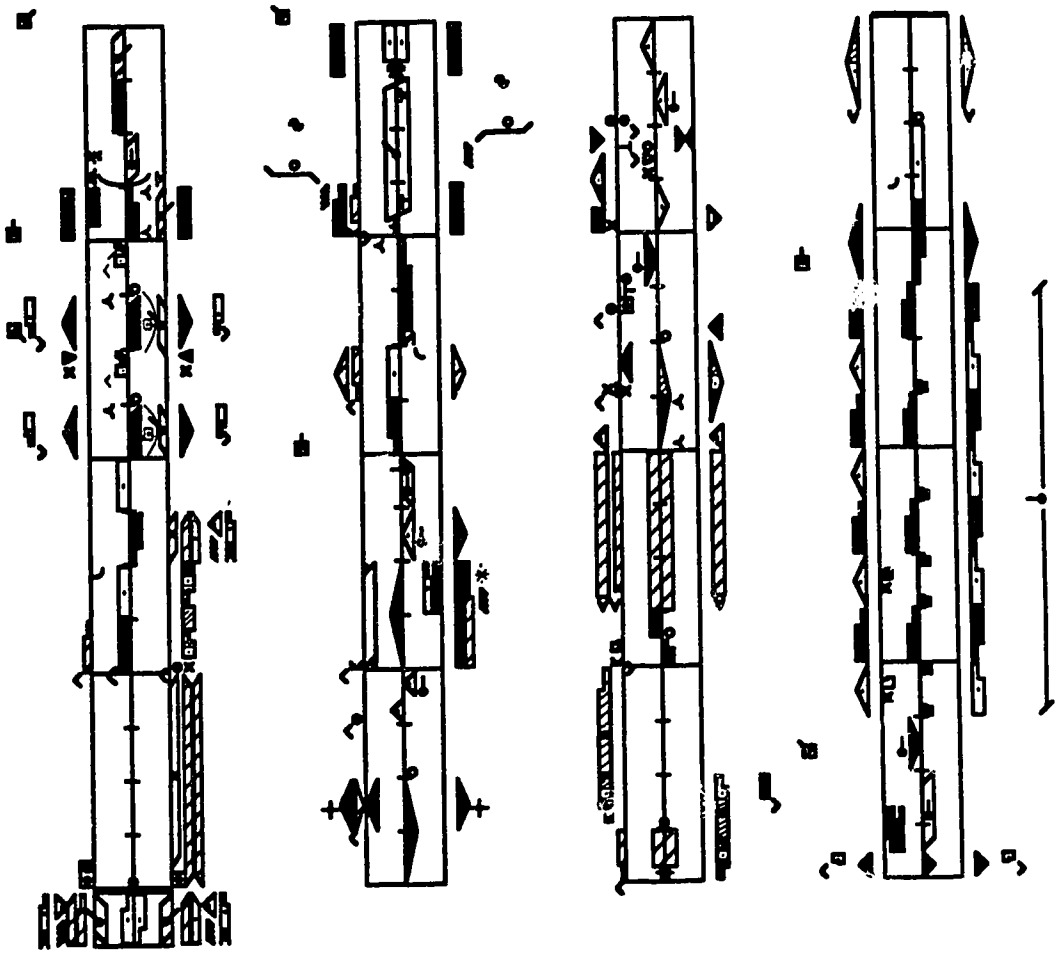


Figure 26. Modern Dance Reconstruction

Notation Score of Participant 3

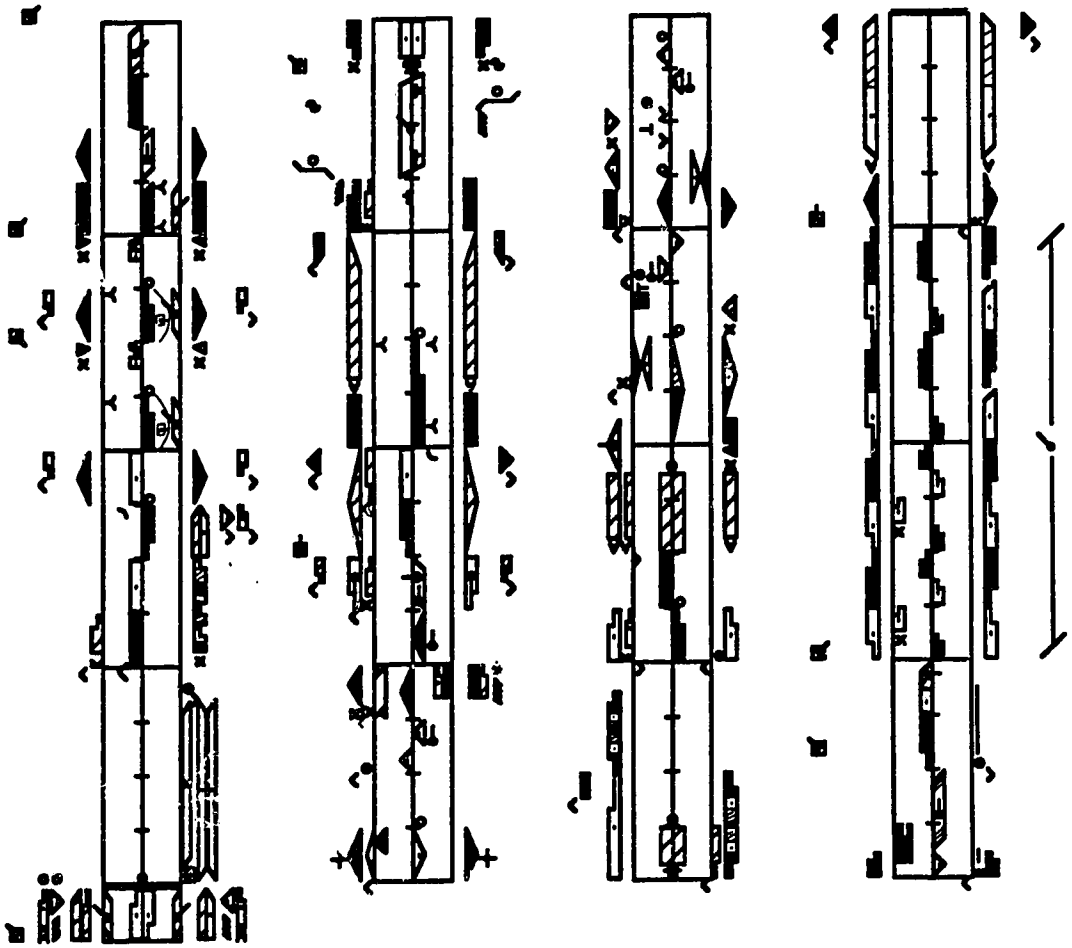


Figure 27. Modern Dance Reconstruction

Notation Score of Participant 4

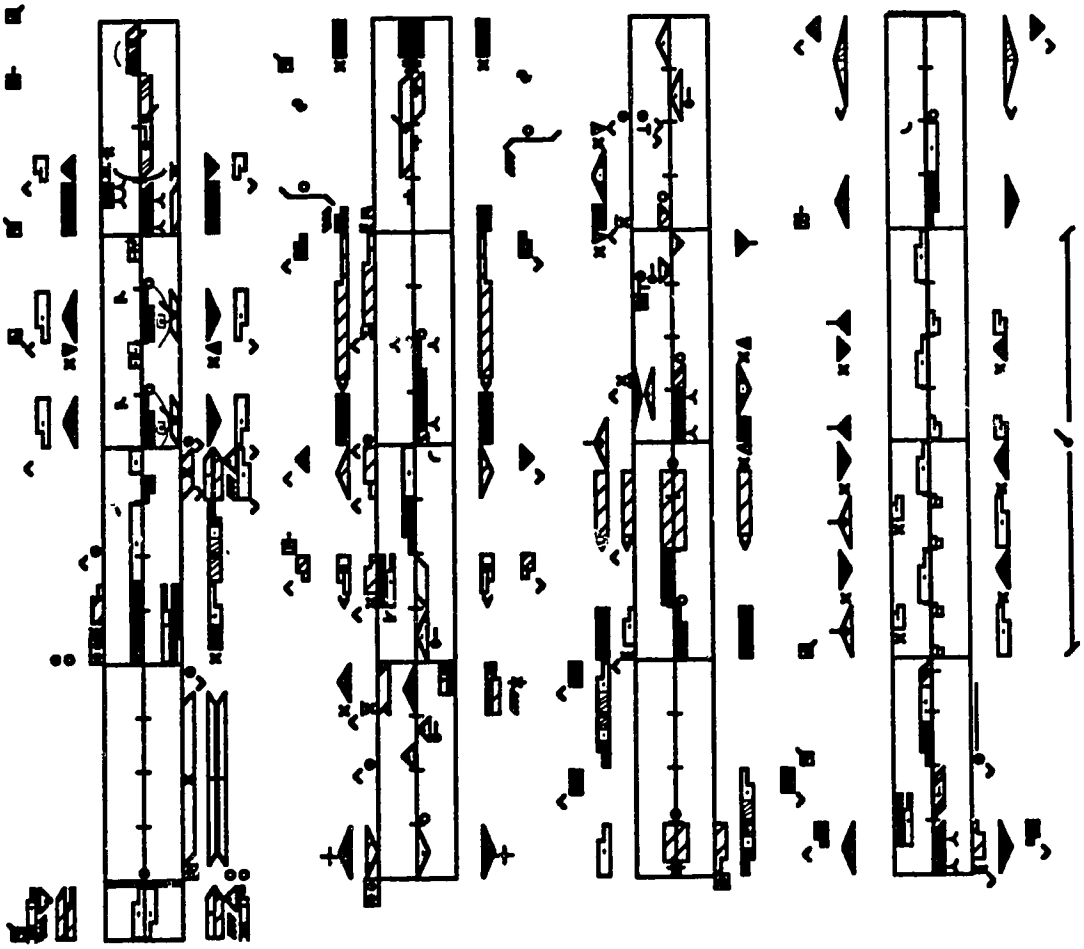


Figure 28. Modern Dance Reconstruction

Notation Score of Participant 5

1. Reconstruction Process

The participants were asked to video-record their danced interpretations of the notation score and to then return the videotape to the researcher. Each participant's reconstruction was compared with the choreographer's original notation score and within the group of scores.

2. Rating Procedure

In the first instance, the researcher rated the performances by the five participants. However, it was considered that the reliability of the notation system could further be tested through a second rating. This phase would involve a second scorer knowledgeable in the Laban system of notation and trained in the rating procedure used in the previous two studies. The following procedures were implemented to ascertain the degree of reliability.

The performance ratings of each of the participants were compared with the original notation score of the choreographer. All agreements, disagreements, and omissions were recorded on the data sheets which contained the categorization of the features of action, time, and space. A group mean was also calculated for the performances.

In the analysis of the performed reconstructions agreement would occur if the movements performed by each individual participant corresponded directly with the content of the choreographer's notation score.

Two types of disagreement could occur in this process, and were identified as

follows: the content of the participant's performance did not correspond with, that is, was found to be different from or in addition to, the content identified in the notation score of the choreographer; and, the content was omitted from the participant's performance.

From this comparison it was possible to determine the degree of agreements, disagreements, and omissions of features in each individual reconstruction as well as between the members of the group.

The first rating was completed by the researcher. Then both the video-recorded performances and the researcher's notation score of the modern dance phrase were sent to the second scorer for further analysis and confirmation.

C. Analysis of Data

1. Introduction

The taped reconstructions were notated by the researcher approximately eight months after the original notation was completed and checked. It was felt that the reliability would be increased as the researcher would not remember the exact notation of the dance phrase. Instead, the researcher would record the performance of the participants as it was viewed. These notation scores were then compared to the original score of the phrase.

The agreements, disagreements, and omissions were determined for each participant and for the whole group by each feature and bar, as well as for the total phrase. These results were then compared with the notation score of the choreographer. Finally, the ratings of the second scorer were considered. These analyses will identify the

Table V-8

Interobserver Agreements, Disagreements, and Omissions

Choreographer and Five Participants

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	DISAGREEMENTS DUE OMISSIONS %
SP	36	180	175	5	0	0
1	10	50	48	2	0	0
2	56	280	205	75	6	8
3	89	445	425	20	4	25
4	56	280	246	34	14	41
5	66	330	314	16	0	0
6	67	335	286	49	29	59
7	45	225	209	16	3	19
8	45	225	198	27	3	11
9	40	200	181	19	8	42
10	57	285	250	35	0	0
11	56	280	235	45	13	29
12	43	215	162	53	0	0
13	48	240	156	84	20	24
14	73	365	283	82	12	15
15	49	245	193	52	4	8
16	39	195	155	40	0	0
TOTAL	875	4375	3721	654	116	
%SCORES			85	15	18	

Percentage Scores

For Each Participant's Phrase

1	2	3	4	5
85	88	85	85	99.7

SP = Starting Position

major findings of the study and will provide an estimate of the reliability of the notation system in the reconstruction process.

2. Analysis of the Reconstructions

The video-recorded performances of the participants were compared and The responses of the participants were considered individually and collectively analyzed by the researcher.

Table V-8 contains the percentage scores of the complete phrase for the group together with the percentage scores of the complete phrase for the five participants. (See Appendix C for details of the participants' scores for each feature of the phrase). Based upon this analysis, the following results were found.

a. The total number of features identified by the researcher was 875.

b. In the starting position and the sixteen bars of the phrase there were more agreements than disagreements in both the individual and group responses.

c. Each of the participants scored highly on the starting position, on each of the sixteen bars, and on the total phrase. Participant five only made three errors in the performance of the total dance phrase; these were: the level of the arm action in bar two; and the degree of turn and the facing in the room indication in bars three and four.

d. The total group response showed a high level of agreement (85%).

e. Analysis of the individual features revealed that there was a high level of agreement in: major actions of transference of weight, turning, and jumping; major gestures of the arms, legs, and torso; and, the direction of all actions of the body and of the parts of the

body.

f. In general, disagreements on individual features occurred in the following three ways: firstly, in the timing of actions, especially in the performance of the third participant; secondly, in the spatial modifications of major actions, especially in the size of the gestures; and thirdly, in the degree of the major turning actions, discrepancies were evident.

Examples of these three discrepancies were found in the following cases.

i. Disagreement in the timing of actions by: participant three, in all aspects of the dance phrase; participants one, two, and four, in bar two; participant four, in bar nine; participant one, two, and four, in bar twelve; and participants one and two, in bar thirteen and in bar sixteen.

ii. Disagreements in spatial modifications by: participant one, in the level of the right arm action in bar three; participant two, in the direction and level of the arms in the starting position and in the level of the sideways step in bar five, in the level of the left arm action in bar six and in the direction of the arms in bar twelve; participant four, in the level of the second foot support in bar ten; participants one and three, in the level of the second step in bar thirteen and in the direction of the steps in bar fourteen; participants two and three, in the direction of the step in bar three and in the level of the fourth step in bar twelve; participants three and four, in the direction of the steps in bar fourteen; participants one and four, in the direction of the first arm action in bar thirteen; participants one, two, and three, in the level of the fourth arm action and in the

direction and level of the torso action in bar ten, in the level of the sideways arm action in bar eleven, in the level of the arms in bar twelve, and in the level of the leg gesture in bar fourteen; participants one, two, and four, in the level of the first arm action in bar ten and in the level of the first step in bars thirteen and fourteen; participants one, three, and four, in the direction and level of arms in the starting position; participants one through four, in the direction and level of the first arm action in bar ten, in the direction of the arm gestures in bar fourteen, and in the direction of the steps and arm gestures in bar fifteen; and all participants, in the direction and level of the arm action in bar two.

iii. Disagreements in the turning action by participant two, in bars fourteen and fifteen.

The researcher felt that a good reconstruction had been performed by the participants as they identified the major spatial and temporal details of the dance phrase.

g. Some disagreements were omissions of information in the performance of the dance phrase. Such omissions were noted in the following cases.

i. Holds of position and weight were omitted by participant one in bar two and participant three in bar ten.

ii. Specific gestures were omitted by: participants one, two, and three, in the body position in bar two; participants one and three, in the arm position in bar six; participant four, in the right arm position in bar eight; participants one, two, and four did not cancel a body position in bar seven; and participant three, in the arm

position in bar nine and in the chest position in bar thirteen.

iii. Spatial modifications were omitted by: participant three, in the contraction of the arms in bars three and eight; participants one, two, and three, in the contraction of the arms in bars eleven and thirteen; participants one through four, in the contraction of the left leg gesture in bar fourteen; and participants two and four, in the contraction of the arms in bar fourteen.

iv. The leading action of the hip was omitted by participant one in bar three.

v. Touching and sliding actions were omitted by: participants one, two, and three, in the slide of the first step in bar four; participants one, three, and four, in the touch of the leg gesture in bar four; participants one and four, in the slide of the first step in bars eleven and thirteen.

vi. Facing indications were omitted by: all participants, as they did not end facing front at the end of bar three; participant one, in the palm facing in bar four; participants two and three, in the palm facing in bar six; participant three, in the palm facing in bar eight; and participants one and three, in the palm facing in bar thirteen.

vii. Successive actions of the arms were omitted by all participants in bar six.

D. The Second Scorer's Analysis

The videorecorded performances were also rated and analyzed by a second scorer. The results of this procedure revealed a high level of agreement -- ninety per cent -- between the original score of the researcher and the ratings of the second scorer. The

following outlines the major disagreements between the second scorer and the researcher.

a. In some situations the second scorer did not accept the timing of actions, particularly those for participants one and two.

b. The second scorer did not accept the palm facing indications that were performed in the following situations: by participant one, in the starting position; by participants one, two, and four in bar two; and participants two, three, and four in bar seven.

c. The second scorer did not accept the performance of certain transferences of weight: participants two, three, and four did not retain the specified level in bar two; all participants performed the stepping action of the whole foot instead of the ball of the foot in bar three and did not perform the steps in the correct direction in bar four.

d. The second scorer did not agree with the performance of the arm gestures in bars two through eight.

e. The second scorer did not agree with the performance of the leg gestures in the following situations: participants one and three omitted the parallel position of the legs in bar three; and participant one did not perform the right leg gesture in bar five.

f. The second scorer did not agree with certain body positions: participants one, three, and four did not perform the required folding action in bar one; participants one and two did not perform the twisting action of the torso in bar two; all participants omitted the side contraction in bar five and omitted the backward leaning action of the torso in bar six; participant one performed the forward lean from the knees instead of from the waist in bar nine; and participants two and three performed a contraction rather than a folding action of the torso in bar ten.

g. The second scorer did not feel that the participants performed the correct degree of turn in bar four.

h. The second scorer felt that the participants did not perform the sliding action in the step of bar seven.

The researcher had acknowledged that there were discrepancies in the participants' performances of the modern dance phrase. In discussing their performances with a professional modern dance teacher, it was considered that the performances of participants one through four were adequate performances, as they were less experienced performers of modern dance. They also had little experience with the notation system. It was anticipated that the fifth participant would produce a more accurate performance as she was more experienced in both performance and modern dance.

The second scorer had not been made aware of the participant's lack of experience, nor had she been asked to make a summative evaluation of their performances. Therefore, it was not expected that the second scorer would make any judgements of their performance nor accept certain variations in their performance.

E. Discussion

One of the most difficult tasks in reconstructing a dance, whether from the directions of a choreographer or reconstructor, or from the reading of a notation score, lies in the committing to memory of the entire dance content. In general, the participants in this study were able to remember the dance in order to produce an adequate performance for the videorecording. This was particularly evident in the performance of

the fifth participant whose percentage total agreement score was 99.7%. This participant had extensive experience in performing modern dance and, therefore, it was anticipated that she would dance with confidence and clarity. The remaining four participants had very little experience in modern dance and, therefore, it was expected that some of the errors of timing and spatial modifications of actions might occur. However, as their percentage scores (85%, 88%, 85%, and 85%, respectively) indicated, they managed to secure and perform, with a good degree of accuracy, the major features of the modern dance phrase.

The performances also illustrated the participant's ability to read the content of the score. Even though the participants had minimal experience with the notation system, they achieved high scores in the reconstruction process. This showed that they had achieved a good understanding of the notation system in a relatively brief time and that they had the ability to translate the notation symbols into movement. If such scores can be attained by inexperienced participants, then it would be logical to suggest that more experienced notation practitioners would achieve very high levels of agreement in a reconstruction.

The high level of agreement between the reconstructions of the five participants and that of the original score, demonstrated clearly the validity of the notation system and that it is possible to translate movement from a notation score and to produce an accurate interpretation of the content. These results also indicated that the notation system accurately records the details of action, space, and time and defined the specific relationship of these elements in a notated score.

In this study, the reconstruction process was undertaken by the dancers themselves.

The use of the notation system by the dancer was one of Laban's major intentions in designing a notation script. He advocated that dancers could study and perform dances of their own and of others through the use of a notation script. It was found that, in educational settings, the notation system is being used to develop the student's awareness and knowledge of dance (Barry 1984; [illegible] Mahumck, 1980; Intravia, 1978; Kipling Brown, 1986; Venable, 1978; and Van Zile, 1984). However, the notation score is used quite differently in the professional setting. Here a specially trained person reads and interprets the notated score and instructs the dancer in the specifics of the dance content. As this study was used specifically for dancers as reconstructors it is recommended that a replication be completed in a setting where the reconstructor works with a dancer in the translation of a score.

In conclusion, the results of this study supported the hypothesis that the Laban system of notation is able to capture the essential features of a dance phrase for reconstruction and gave additional credence to the validity of the notation system.

Bibliography

Backer, M. (1976). Toward a realisation of eighteenth century dance. Dance Studies. Vol. 1. Centre for Dance Studies. pp.74-75.

Barry, T. (1984). Now you see it: reconstructing dance within college/university dance curricula. Dance Notation Journal. Vol. 2. Spring. pp.32-39.

Chilkovsky Nahumck, N. (1980). Dance curriculum resource guide. American Dance Guild.

Cohen, S. J. (1979). Bournonville and the question of preservation. Dance Magazine. pp.77-78.

Cohen, S. J. (1982). Next week, Swan Lake. Reflections of dance and dances. Connecticut: Wesleyan University Press.

Cook, R. (1977). A handbook for the dance director. New York: Author.

Dipert, R.R., (1980).The composer's intentions: an examination of their relevance for the performance. Musical Quarterly. 66. pp.205-218.

Dufrenne, M. (1973). The phenomenology of aesthetic experience. (E.S. Casey et al, Trans.). Evanston, Ill: Northwestern University Press. Original work published 1953.

Garafola, L. (1990). Reconstructing the past: tracking down Le Train Bleu. Dance Magazine. pp.40-44.

Hilton, W. (1981). Dance of court and theatre: the French noble style. U.S.A.: Princeton Books.

Horwitz, D. L. (1988-89). Victoria Simon on Balanchine and notation. Dance Notation Journal. Vol. 6. Winter/Spring. pp.3-5.

Intravia, T. (1978). Notation of movement as a teaching aid. Journal of the American Association of Health, Physical Education & Recreation. pp.107-108.

Hutchinson Guest, A. (1984). Dance notation: the process of recording movement on paper. London: Dance Books.

Kipling Brown, A. (1989). The Laban system of notation: implications for the dance teacher. The Journal of the Canadian Association of Health, Physical Education & Recreation. Special Dance Edition. July/August. pp.14-18.

Landau, D. (1988). New partner for the dance. Computer Land Magazine. September/October. pp.8-10,14,68.

Mindlin, N. (1984). The effects of movement notation on the performance, cognitions, and attitudes of beginning ballet students at the college level. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Mark, T. C. (1981). Philosophy of piano playing: reflections on the concept of performance. Philosophy and Phenomenological Research. 41. No. 3. pp.299-324.

Schneider, R. (1969). Essays on performance theory. 1970-76. In Drama, Script, Theatre and Performance. New York: Drama Book Specialists. pp.36-62.

Teten, C. (1984). The gavotte: four notation scores from four centuries. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Topaz, M. (1980). Notating and reconstructing for Antony Tudor. Dance Notation Journal. Vol. 4. No. 1. pp.13-20.

Van Zile, J. (1984). What is dance? Implications for dance notation. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Venable, L. (1978). Will dance be literate? Journal of the American Association of Health, Physical Education & Recreation. pp.112-113.

Whitley, A. (1984). L'apres midi d'un faune - a revival. Paper presented at the International Congress on Movement Notation, Tel Aviv, Israel.

Woodruff, D. (1970). On composing a period ballet: a chat with Mary Skeaping. Dance Scope. 4(2). pp.18-25.

Wright Dunkley, K. (1978). Professional dance repertory and the collegiate dancer. Journal of the American Association of Health, Physical Education & Recreation. pp.107-108.

CHAPTER 6

A STUDY TO INVESTIGATE THE RELIABILITY OF APPLYING LABANOTATION WHEN APPLIED IN A WELL-KNOWN AND LESS WELL-KNOWN MOVEMENT DOMAIN

A. Introduction

Prior studies in this research were undertaken to investigate the reliability of the Laban system of notation. One of the major considerations was the importance of the notator's knowledge and skill in the notation system. This factor required that clear identification and consideration be made of a participant's experience and knowledge in the use of the notation system. It was also necessary to address a further issue regarding a notator's experience and knowledge in the dance form being recorded or reconstructed. Barenieff, Hackney, True Jones, Van Zile, and Wolz (1984) considered the use of notation scores in the analysis of a specific dance style of Asia. The authors acknowledged that,

> . . . when using notated scores as research data, the researcher must assess the reliability of the scores and know precisely what they represent. The researcher should be familiar with qualifications of the notator, including notation skill level and familiarity with the tradition being notated. (p.10)

These issues were reflected in the discussions about the accuracy of responses by participants in both the recording and reconstruction studies (see Chapters 3, 4, and 5). In both usages it was found that those participants who had experience in both the

notation system and the dance form produced more accurate notation scores. It was concluded that those participants who had extensive experience in the use of the notation system were also able to produce an accurate notation score in a dance form not as well-known.

Consideration of the importance of the notator's skill and knowledge in the application of the system, together with the notator's experience and understanding of the dance form, posed two significant questions for the researcher. Does the notation system present a particular way of perceiving and understanding movement? and, if so, does this assist the notator in capturing movement, content, and style in areas of movement in which the notator has little experience?

Many notation practitioners have commented upon the importance of experience in the dance form and knowledge of the choreographer in the recording or reconstruction of a dance work (Bartenieff et al, 1984; Pforsich, 1978; Topaz 1988-89; Youngerman, 1984). As Youngerman (1984) stated:

> Notating is not a mechanical process; it requires knowledge about style and an understanding of the different ways in which a movement can be conceptualized. (p.118)

Conversely, some practitioners have stated that considerable experience might have an adverse effect. Marion (1984) considered that the notator's ability to produce a good score could be influenced by "previous training" in dance which "would affect perceptions of movement" (p.34).

There is no doubt that successful recordings and reconstructions have been

produced by notation practitioners with considerable experience in the notation system but not in the dance form. Pforsich (1978) felt that the notator recording in a style not so well known faced several problems when identifying the core characteristics of a dance form. She described a project in which a group of Labanotation and Effort/Shape notators worked together to produce a method to describe a dance style. The notators studied the two filmed excerpts and then completed the designed data sheets. The first excerpt was a dance called Tsunemasa, a Shimai from Carl Wolz's collection of Japanese Noh dance films. The second excerpt was the opening sequence of the duet by Yuriko and Ross from the film of Martha Graham A Dancer's World. Pforsich explained that films were chosen for the actual study as they provided a "consistent medium from which to collect data" (p.68). The results of this study introduced an interesting point about their notations. Pforsich explained

> . . . that we tended to write more detail, and take less for granted, in the Noh than in the Graham, the latter being a more familiar style of movement. We also found that when notating a familiar style we were apparently able to disregard, or at least distinguish, the personal characteristics of the dancer. (p.68)

Fox (1988) was involved in the notation of a four year Classical Chinese dance syllabus which further identified the importance of understanding and knowing in a dance form. Many problems faced Fox in this experience for she "had never before notated a genre with which [she] was not familiar" (p.76). An added problem was that she was not able to speak directly with the teachers or dancers due to language differences.

It took Fox twenty-three months to record the syllabus. The process took many

hours, as "discussion" had to take place through interpreters and as several visits to the Hong Kong Dance Academy had to take place. This time frame actually allowed Fox to learn the dance content, thus facilitating the recording task. The working methodology involved asking "many questions someone familiar with the style would not have needed to ask" (p.82), as well as repeated performances and practices of a movement. She considered that "asking questions aided in creating a clear definition of each step" (p.82) and that the working methodology provided "a greater understanding of the movements than would have been possible just through observation" (p.82). Each situation creates its own methodology. As Fox stated, "even with familiarity with the genre it is possible not to bring in biases and preconceptions based on personal experience" (p.82).

An example of reconstruction success by novices in a particular dance form was found in the Korean Project. This was undertaken by Van Zile in 1982 and involved students at the University of Hawaii reconstructing a Korean dance. These students, who had little knowledge of that particular dance form, studied a notation score of the dance as it was performed by a Korean dancer. A videorecording of the students' reconstructions was made and shown to a group of dance researchers and Korean dancers. Through observation and discussion the dance researchers and Korean dancers agreed that the performances were acceptable reconstructions of the dance.

It must be acknowledged that there are problems in the recording or reconstructing of a dance form which is less well-known. However, the examples quoted above illustrate that one should not discount the fact that acceptable recordings and reconstructions can be produced by persons less knowledgeable in a particular dance

form. Obviously those less experienced need more time to prepare a score and they might tend to write more detail in the score.

The examples quoted above pointed toward the fact that the notators were able to record or reconstruct in the dance form less well-known to them because they had a particular frame of reference through which they could consider the movement content and style. This frame of reference is contained within the notation system itself. Laban's original explorations of a notation system considered the "nature of movement" and the movement possibilities of the body (Ullmann, 1976, p.28). Thus, the movement analysis and the corresponding movement script are based upon the basic laws (biomechanical) of human movement. Challet-Haas, Lange, and Topaz (1985), in describing the basic principles and orthographical considerations of the Laban system of notation, stated that Laban

> . . . devised signs of the notation system as visual representations of the equivalent occurrences . . . easily associated with the particular movement properties like direction, duration, right and left, etc. They form a congruous, logically organised system and they correspond to sensitively established fields of notions. (p.13)

It seemed to the researcher that a more thorough investigation of the content of notation scores would assist in clarifying specific claims of validity. Therefore, the purpose of this study was to ascertain whether notators with experience in the notation system could adequately record in a movement domain less well-known to them. Accurate recording in a movement domain less well-known would provide further information regarding the validity of the system. It may also reveal the scope of the notation system

to provide a transcription device with which one can observe, analyze, and record in other movement domains.

B. Methods

1. Preliminary Study

Organization of this research began with a preliminary study involving seven participants who came from a range of movement backgrounds, but were novices in the applications of the notation system. Their movement experience included: aerobics, children's dance, gymnastics, modern dance, and jazz dance. They had heard of the Laban system of notation and were interested in learning the system for use in their own teaching and performing.

The seven participants in this study took part in a three week intensive course in Labanotation which involved learning the elementary principles, orthographies, and symbologies of the system through the reading and writing of selected movement patterns. Participants were then given specific readings in various movement areas. For instance, the principles of recording step patterns were explored in class and then a specific step pattern was selected for recording purposes. The participants were then asked to select and record an equivalent step pattern in their own movement domain. Thus, through theoretical and practical application of the rules of the system, the participants extended their knowledge and were able to record in their own movement areas.

At the conclusion of the course, the participants were asked to record two phrases of movement, one in a movement domain known and one in an area less well-known to

them. From the information regarding their movement experience, it was evident that each of the seven participants had little experience in ballet. Therefore, a short ballet phrase was used as the less well-known movement domain, and an equivalent phrase in their own specific movement domain was used for the well-known domain. Each participant received a videorecording of the ballet phrase and one of an additional phrase in their own movement domain.

The participants returned their notated scores to the researcher and, through subsequent discussion, the following questions were addressed: was it easier to record in the movement domain known?; was it possible to record in the movement domain not as well-known?; and, what problems did you encounter in trying to record the two phrases?

The participants' responses indicated that it was definitely easier to notate in the movement domain known to them. They identified specific difficulties in the movement domain less well-known to them. They felt that they did not know enough about the ballet style and, therefore, were not able to accurately record the finer details of the content of the ballet phrase. In both situations, the major problem encountered was that of not being able to record what they observed nor to identify what they felt to be the content of each of the phrases.

The findings of this preliminary study provided some information regarding the validity of the system, that is, the system is capable of recording the features of movement in different movement domains and it is possible to apply the system in an area less well-known to the notator. The researcher felt that certain changes were needed before further investigations into the research question could be made. Although it was

possible to compare the participants' recordings of the ballet phrase, it was not satisfactory to compare the recordings in their individual movement areas. It was also difficult to confirm the findings when the participants had little experience with the use of the notation system. Therefore, two major changes were required: the first being in the selection of movement forms to be recorded; and, the second being the involvement of participants with a higher level of experience in the notation system.

2. Recording Study

A group of notation practitioners with varied backgrounds and experiences in both notation and movement were invited to take part in this study. Nine participants agreed to take part in the study. However, two of the participants had not returned their notation scores at the time of the data analysis.

The participants were asked to identify their experience with the notation system and in the following dance and movement areas; ballet, modern, jazz, ethnic, aerobics, and gymnastics. They were also asked to identify: whether they had participated at the professional or student level; whether they had taken classes at school, university, recreationally, or in another setting; and how long they had been involved in these movement areas (see Appendix D).

It was found that four of the participants had extensive experience in the use of the notation system. The remaining three only had one year of intensive study in the notation system.

In terms of their movement experience, each of the participants had extensive experience in ballet, but less experience in each of the other dance forms. All had little or no experience in gymnastics. Therefore, it was decided to select ballet and gymnastics as the movement areas for this study.

From the background information, a group of six participants was organized. All participants had the same experience in ballet and gymnastics. Four of the participants had extensive experience with the notation system and three had less experience with the notation system. In order to have an equal group experienced and less experienced participants, in terms of the notation system, it was decided to randomly select three participants from the group of four.

The choreographing and recording of the two movement phrases were organized in the following way. The adage ballet phrase was choreographed for an earlier study in this research project by a distinguished teacher of ballet (see Figure 29). The gymnastics phrase was composed and performed by an experienced performer (see Figure 32). Both phrases were notated by the researcher in consultation with the choreographers and then checked by an independent notator. The independent notator received the video-recording of the performance and the notation scores in order to confirm the content of the notation scores.

The participants were sent a videorecording of the adage ballet phrase and the gymnastics phrase and asked to record the content of each of the phrases. They were asked to return their notated scores to the researcher.

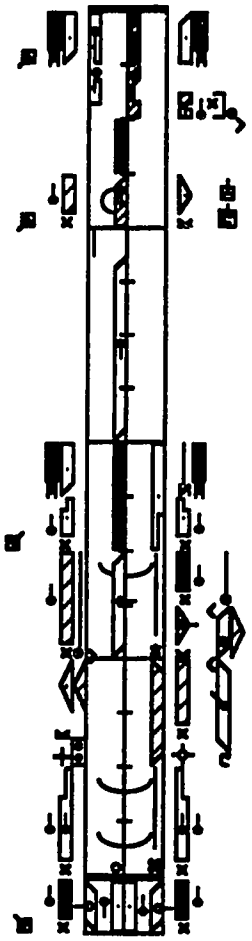


Figure 29. Ballet Phrase

Notation Score of the Choreographer

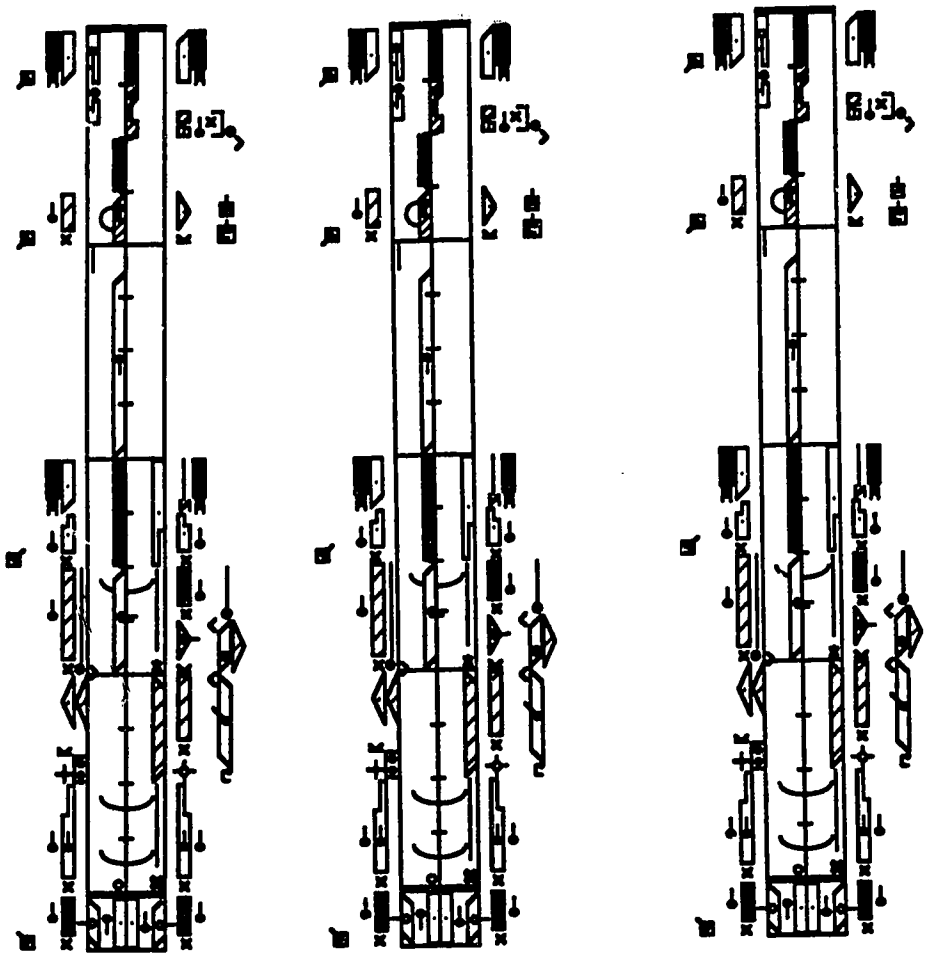


Figure 30. Ballet Phrase

Notation Score of Participants 1, 2, and 3

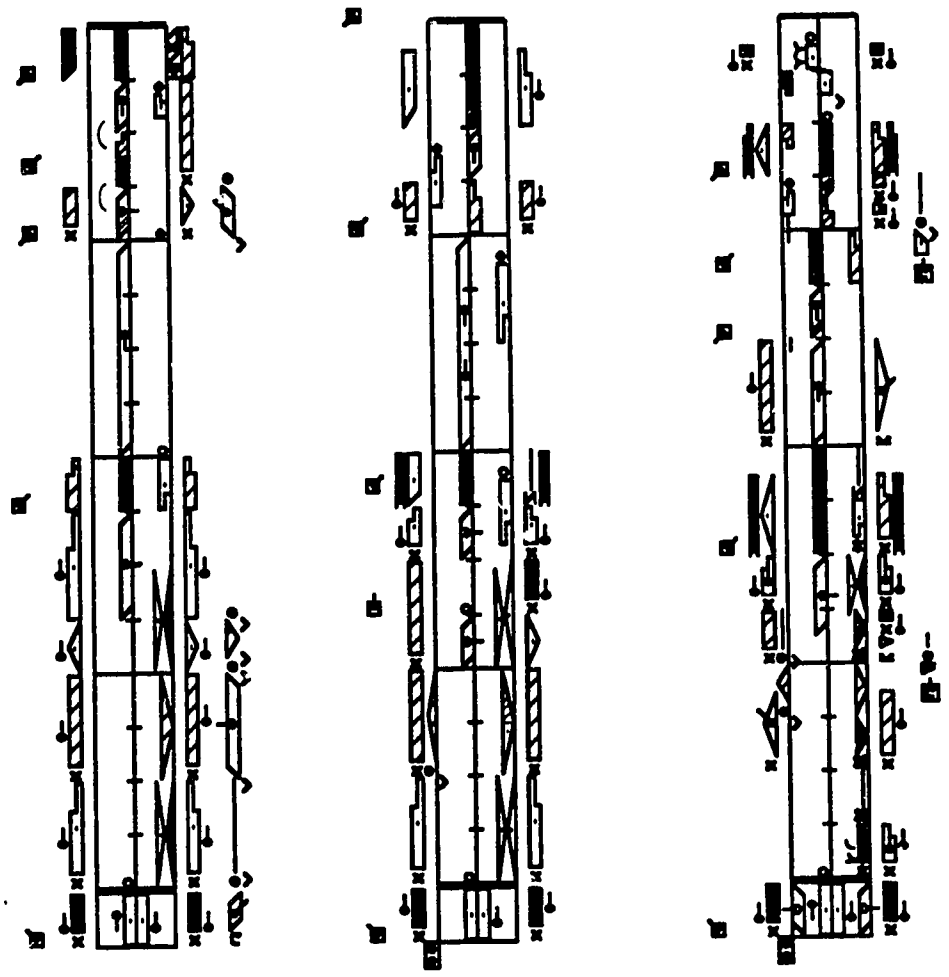


Figure 31. Ballet Phrase

Notation Scores of Participants 4, 5, and 6

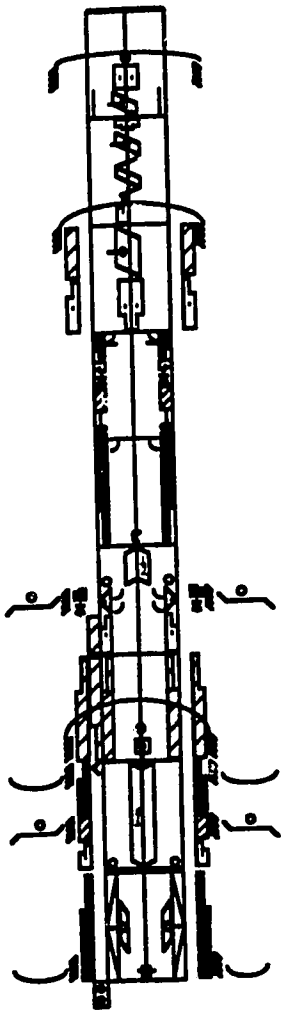


Figure 32. Gymnastics Phrase

Notation Score of the Researcher

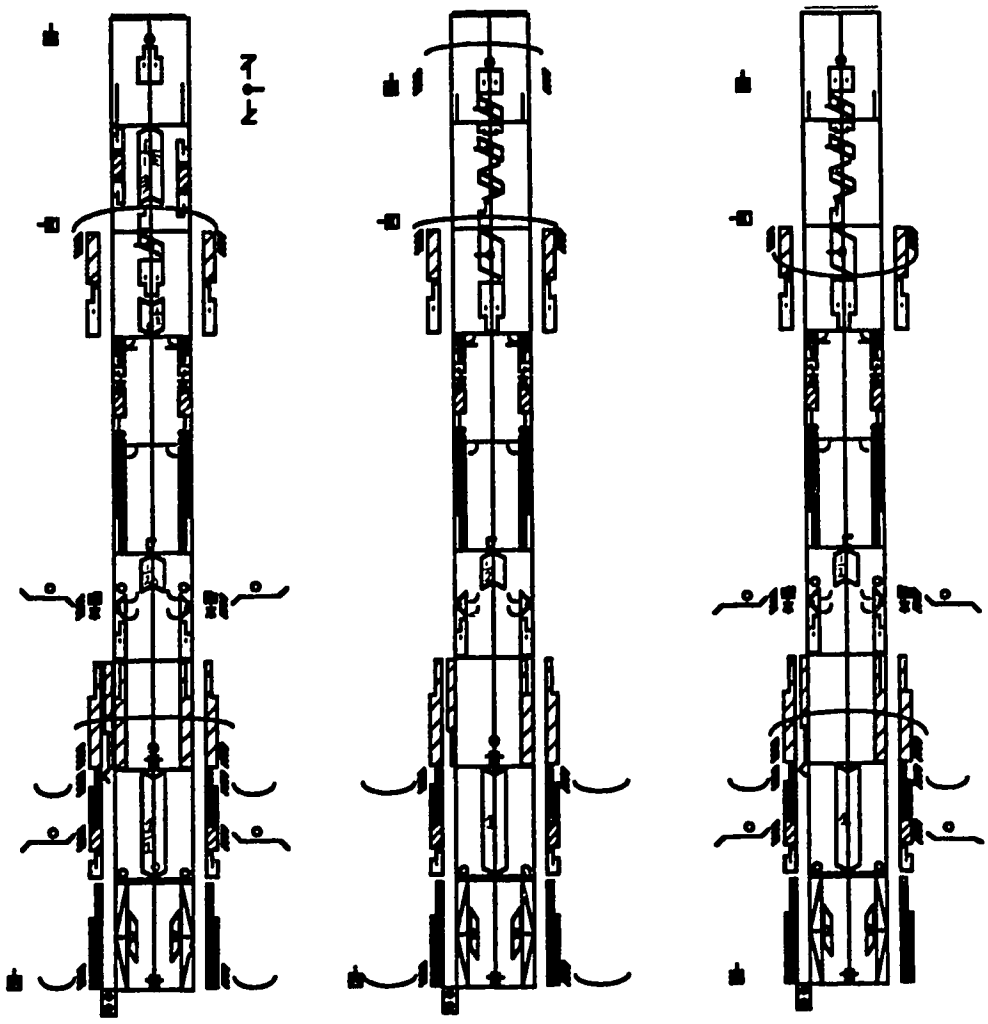


Figure 33. Gymnastics Phrase

Notation Scores of Participants 1, 2, and 3

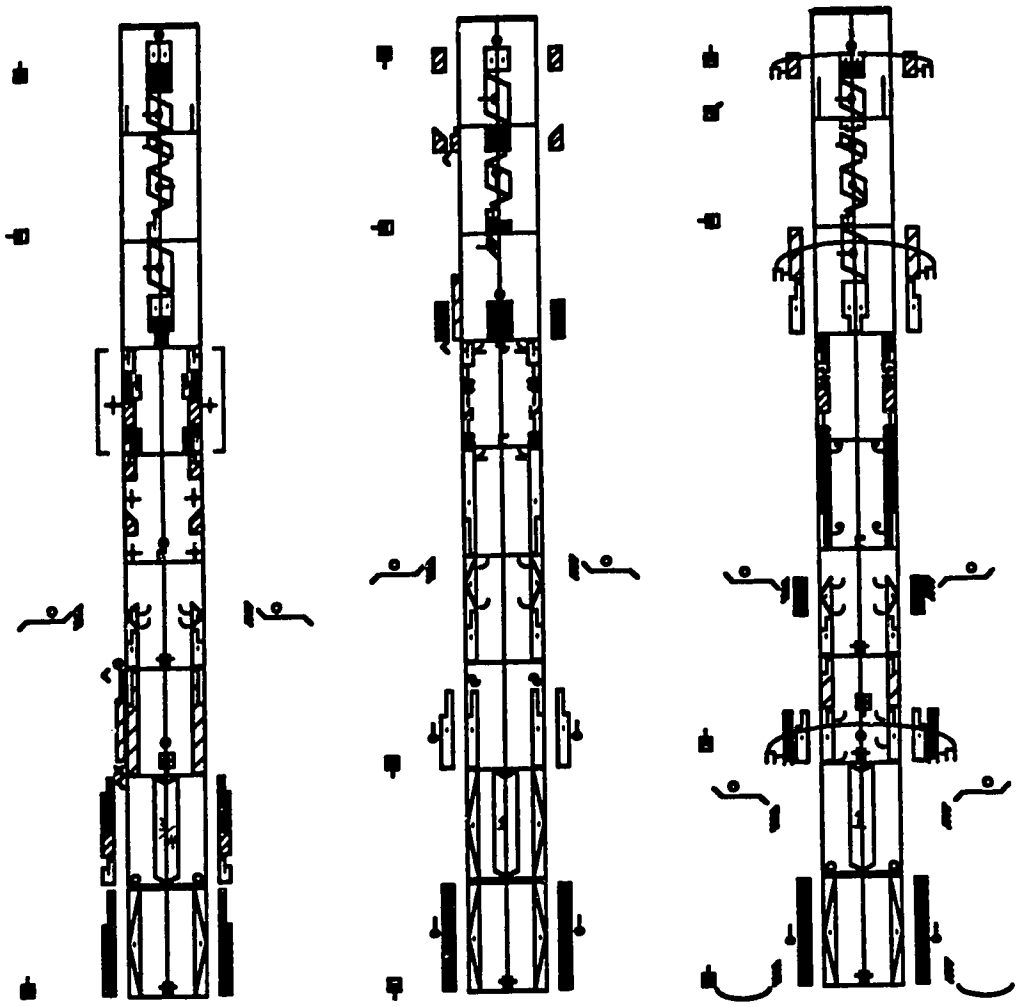


Figure 34. Gymnastics Phrase

Notation Scores of Participants 4, 5, and 6

3. Rating Procedure for the Recording Study

The rating of the notation scores was undertaken by the researcher and the following procedures were implemented to ascertain the degree of reliability and validity in the notation system. Each participants' notation scores were compared to the scores of the researcher. All agreements, disagreements. and omissions were recorded on the data sheets which were categorized by the features of action, time, and space.

In the analysis of the notation scores agreements would occur if the features recorded by the participants corresponded directly with the features notated by the researcher.

Two types of disagreement could occur in this process. The first of these occurred when the content of the participant's notation score did not correspond with, that is, was found to be different from or in addition to, the content identified in the notation score of the researcher. The second type occurred when identifiable content was omitted from the participant's notation score.

From this it was possible to determine the degree of agreements, disagreements, and omissions of features in each of the participant's recordings as well as between the members of the group.

C. Analysis of Data

1. Introduction

The purpose of this section was to identify and discuss the findings of this study. The agreements, disagreements, and omissions for the ballet and gymnastics phrases were

Table VI-9

Interobserver Agreements, Disagreements, and Omissions

Researcher and Six Participants

Ballet Phrase

BAR	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	DISAGREEMENTS DUE OMISSIONS %
SP	22	132	120	12	12	100
1	41	246	220	26	6	23
2	72	427	355	73	33	46
3	7	42	34	8	4	50
4	80	480	369	111	33	30
TOTAL	222	1327	1098	230	88	
% SCORES			83	17	38	

Percentage Scores
For Each Participant's Phrase

1	2	3	4	5	6
100	100	100	66	78	74

SP = Starting Position

determined for each participant and for the whole group. They were established by each feature and bar, as well as for the total phrase. Finally, the findings were compared with the notation scores of the researcher. These analyses identified the major findings of the study and provided a further estimate of the reliability of the notation system in the recording of movement. In addition, an assessment of the validity of the notation system, which will allow the notator to record in an movement area not as well-known, will be made.

In order to confirm the findings of the researcher and to provide further evidence of reliability the notation scores were analyzed and rated by a second scorer. Due to the high degree of reliability attained in the previous studies between the researcher and second scorer, verification of the researcher's ratings with a second scorer was felt to be unnecessary in this study. However, it was important to secure a phrase which suitably represented the field of gymnastics and which also contained an equivalent type and number of features as those found in the ballet phrase. Therefore, the content and choreography of the gymnastics phrase was determined through extensive consultation with experts in the field of gymnastics. Then, after further discussion about the content of the notation score, it was agreed that a prescriptive score had been produced which could be used for reconstruction purposes.

2. Analysis of the Recordings

The notation scores of the six participants were analyzed and compared by the researcher. The participants' notation scores for the ballet and gymnastic phrases are

contained in figures 30, 31, 33, and 34, respectively. The responses of the participants were considered individually and collectively.

Tables VI-9 and VI-10 contain the percentage scores for each participant and the total and percentage scores for the group for both the ballet and gymnastics phrases. See Appendix D for details of the participants' scores for each feature of the phrase. Based upon this analysis the following results were found.

a. Ballet Phrase

i. The total number of features identified by the researcher was 222.

ii. In the starting position and the four bars of the phrase there were more agreements than disagreements in both the individual and group responses. Participants one, two, and three, the most experienced of the six participants, attained 100% agreement of the features in the ballet phrase. This result was to be expected as these three participants had considerable experience in both ballet and in the use of the notation system.

iii. The total group response showed a high level of agreement (83%).

iv. Participants four, five, and six, the least experienced of the group, scored highly in the starting position and bars one and three. This was possibly because there were fewer features and the actual movements were less complicated.

v. Analysis of the individual features of the phrase revealed that there was a high level of agreement in the major actions of the phrase; major gestures of the arms, legs, and torso; and, the direction and level of all actions and gestures of the body and of parts of the body.

vi. In general, disagreements on individual features occurred mainly in the timing of actions and gestures, especially in the recordings of participants four and five. Significant examples of timing errors were found in the following instances: in bar one, participants four and six did not indicate the correct timing for the arm, leg, and head gestures; in bar two, participants four and five did not indicate the correct timing for the arms and body gestures; in bar three, participants four, five, and six did not indicate the correct timing for the turn and jump; and, in bar four, participants four, five, and six did not indicate the correct timing for the total features of the bar.

vii. Two disagreements occurred in the actual writing of a movement. The first error was found in the score of participant five where the head position was written as a low side tilt of the head. This would be impossible to perform. It may have been that the participant wished to indicate a facing position for the face. The second error was found in the notation score of participant four where the steps and turns, as well as the leg gesture were written for the wrong side of the body.

Most of the errors identified above were made by participants four, five, and six. This may have been due to the fact these participants had less experience with the notation system.

viii. In many situations, disagreements were due to omissions of details in the participants' scores. Such omissions were to be found in certain stepping and jumping actions; in the parts of the body; in relationships; and in facing indications. Specific omissions occurred in the following situations. Omissions of stepping and jumping actions occurred in bar four, participant four omitted the steps, and in bar three participants four

Table VI-10

Interobserver Agreements, Disagreements, and Omissions

Researcher and Six Participants

Gymnastics Phrase

MOVE	FEATURES	POSSIBLE AGREEMENTS	AGREEMENTS	DISAGREEMENTS	DISAGREEMENTS DUE OMISSIONS	%
SP	19	114	96	18	18	100
1	24	144	101	43	42	98
2	19	114	79	35	29	83
3	29	174	150	24	22	92
4	9	54	50	4	2	50
5	26	156	148	8	6	75
6	21	126	103	23	21	91
7	12	72	52	20	3	15
8	8	48	44	4	4	100
TOTAL	167	1002	823	179	147	
% SCORES			82	18	77	

Percentage Scores
For Each Participant's Phrase

For Total Phrase

1	2	3	4	5	6
96	96	98	70	53	80

SP = Starting Position
MOVE = Movements

and five omitted the jump. Omissions of gestures of the parts of the body occurred in the following instances: participants four and five failed to indicate the turn-out position in the starting position; participant four failed to indicate the torso position in bars one and two, the arm gesture in bar two, and the leg gesture in bar four; participants four, five, and six omitted the head position in bar two; and participants four and five omitted the arm gestures in bar four.

Omissions of relationship indications occurred in the scores of participants four and five in bar one, where they omitted the sliding of the leg gesture and they omitted the touch of the leg gesture.

Omissions of palm facing occurred in bars two and four of the scores of participants four and five scores.

The above disagreements may have been due to the fact that the participants were experienced in ballet and did not feel that they needed to include certain details. This may have been particularly true of the turn-out position and the palm facing indications. Experienced ballet practitioners may have assumed that future readers of the notation score would also be knowledgeable in the ballet style and, therefore, would not require such details.

b. Gymnastics Phrase

In the dance phrases, the movement content had been divided into bars and the specific features of each bar had been identified. It was not appropriate to describe the

movement content of the gymnastics phrase in terms of bars. The performer identified the content as specific movements which followed one another in sequence. Therefore, the groupings of features have been described as movements. The phrase comprises of the following movements: a starting position; a backward roll; a held piked position; a forward roll; a head stand; a series of leg gestures; a transference of weight to a standing position and a turn; a round off; and a turn into a final standing position.

i. The total number of features identified in the gymnastics phrase was 167.

ii. It was found that there were more agreements than disagreements in both the individual and group scores. The three experienced participants attained almost total agreement (96%, 96%, and 98%, respectively). The three less experienced participants attained lower agreement scores. However, the scores of participants four and six showed agreement levels of 70% and 80% percent. Participant five only achieved an agreement score of 53%, having written some movements incorrectly and having neglected to record other movements altogether. It was not evident whether the omissions were through lack of observation or through an inability to notate those particular movements.

iii. There were few disagreements of the actual movements contained in the gymnastics phrase. Most of the participants identified that there was a starting position and eight movements in the phrase. It is interesting to note that some participants failed to observe or neglected to write down certain movements. In a few instances movements were incorrectly described. For instance, participant five did not record the second movement, a piked position supported on the back of the pelvis, and very little detail of the sixth movement, a transference of weight to a standing position. Also participant one

incorrectly described the round off in movement seven. It was described as a forward roll supported on the hands or walkover. There was no indication of the half rotation of the cartwheel and then a turn on the hands.

iv. There were few disagreements of individual features. Those that did occur were: in the direction and level of the arm gestures by participant six, in movement three, and by participant four, in movement six; in the level of the leg gestures by participant five in movement four, and, by participant four in movement five; in the body position, by participant four in movement two; and in the degree of rotation in the round off by participants one, four, five, and six in movement seven.

v. Disagreements occurred mainly in the omission of the individual features of the movements. The percentage of disagreements that were omissions ranged from 50% to 100% in the starting position and the eight movements. The most significant omissions were made by participant five, especially in movement six where there was no movement indicated at all. In other cases, the major omissions were in the relationship indications. These were found in the following instances: in the touching of the hands on the floor in the starting position by participants three, four, and five; in the first and eighth movements by participants four, five, and six; and in the fourth movement by participant four. There was also an omission of the relationship of hand supporting in movement one by participants two, four, and five. Further omissions of features were to be found: in leg gestures in the starting position by participants four, five, and six; in the third movement by participants two, four, five, and six, and in the fifth movement by participant four; in the arm gestures in the first movement by participants four and five and in the third

movement by participant four; and in the turning action of movement three by participants five and six.

It was considered that the participants' lack of experience in gymnastics caused the majority of the omissions. They were not cognizant of the importance and relevance of the features of a movement. They may have also been unsure of which features were directly attributable to the style of the individual performer. In the case of participant five, it may have been that this individual did not have enough experience in the notation system to analyze and then record the specific features.

D. Discussion

In general, the results of this fourth study strongly support the hypothesis that those knowledgeable in the notation system are able to record in varied movement domains. The fact that the participants were able to record in movement areas less well-known to them provides further evidence of the validity of the notation system. The expectations of notation practitioners and researchers that the person involved in recording or reconstructing movement should be experienced with the notation system are shown to be appropriate and to have been supported through the findings of this study. This was evident in the high level of agreement in the scores of the group for both the ballet phrase (83%) and the gymnastics phrase (82%). It was particularly significant in the individual scores of the three experienced participants. The results in the ballet phrase showed a 100% agreement between each of the participants' scores and that of the researcher; while in the gymnastics phrase the results were at 96%, 96%, and 98% levels of agreement.

It was also suggested that the notator should apply the notation system in a movement domain that is well-known. This idea was endorsed when both the individual and group scores are considered. Those participants who were most experienced in the ballet and the notation system achieved the highest scores. It is also significant that those participants with an equivalent high level of experience in ballet but with less experience with the notation system, also achieved fairly high scores.

The use of music may have helped those less experienced in either the movement form or the notation system. The use of the same piece of music for both phrases may have further assisted in the identification of rhythm and phrases.

It has also been suggested that knowledge in the notation system provides a particular analytical framework through which the notator is able to record or reconstruct in any movement domain. The findings of this study also support such discussions, as indicated by the high scores achieved by the participants in the gymnastics phrase. All of the participants had little experience in this movement domain, yet they attained between 53% and 98% level of agreement. It is particularly significant that those participants who had the most experience with the notation system also gained high scores in the recording of the gymnastics phrase.

In conclusion, it can be stated that the findings of this study support the theory that an experienced notator is able to record and reconstruct in a well-known movement domain as well as in a less well-known domain. These findings would be strengthened if the study was repeated with a group of gymnasts knowledgeable in the notation system but with little experience in ballet. As the participants had varied levels of experience in

both the movement forms and in the notation system, the high levels of agreement make it clear that the Laban system of notation is a valid tool for recording movement.

Bibliography

Bartenieff, I., Hackney, P., True Jones, B., Van Zile, J. & Wolz, C. (1984). The potential of movement analysis as a research tool: a preliminary analysis. Dance Research Journal. 16/1. Spring. pp.3-26.

Fox, I. (1988). Notating a Chinese classical dance syllabus. Conference Proceedings of the Congress on Research in Dance. International Committee on Research in Dance Conference. Toronto, Canada. pp.76-82.

Marion, S. (1987). Beyond accuracy: authenticity and interpretation in dance notation. Dance Notation Journal. 5(1). pp. 33-39.

Pforsich, J. (1978). Labananalysis and dance style research. An historical survey and report of the 1976 Ohio State University Research Workshop. Essays in dance research. Dance Research Annual IX. pp. 59-74.

Topaz, M. (1988-89). The Balanchine project. A brief history. Dance Notation Journal. Vol. 6. Winter/Spring. pp. 1-2.

Ullmann, L. (1976). What a notated movement can tell. In R. Lange (ed.) Dance Studies. Vol. 1. Centre for Dance Studies. pp. 19-29.

Van Zile, J. (1983). How much does a score say? Proceedings of the 13th International Council of Kinetography Laban.

Youngerman, S. (1984). Movement notation systems as conceptual frameworks: The Laban system. In M. Sheets-Johnstone (ed.) Illuminating Dance. Philosophical Explorations. New York: Associated University Presses.

CHAPTER 7

SUMMARY AND DISCUSSION OF THE RESEARCH

A. Introduction

This chapter presents an outline of the purposes and procedures, and results of the overall research design. The major issues of the research plan are summarized and discussed in relation to the four studies designed for this research. The chapter concludes with recommendations for further research.

B. Research Studies

The global issues addressed in this research concerned the reliability and validity of the Laban system of notation in the recording and reconstructing of movement and dance. Two specific issues were addressed in this research. Firstly, whether an accurate recording or reconstruction can be produced; and secondly, whether knowledge in the notation system provides a framework through which a notator is able to work in any movement domain.

The Laban system of notation is the responsibility of and is organized and clarified by the custodial body of the system, the International Council of Kinetography Laban. The specific objectives of the council are to unify the symbology and principles of the system and to regulate and coordinate the applications of the system. The content of the system, that is, whether a symbol actually represents what it says it represents and whether all possible movements can be mapped, has been well established. Thus, having accepted that the system has content validity, this research sought to ascertain and to descriptively analyze the reliability of the system. As the

notation system has been used primarily in the recording and reconstructing of dance, the construct validity of the system was explored and extended by moving into other areas of movement.

Four studies were designed to investigate the particular issues. The first investigation constituted a pilot study, in which an appropriate design and procedure for assessing the reliability of the notation system, was investigated. Once a design and procedure had been confirmed, three further studies were constructed to consider both the recording and reconstructing of selected movement and dance forms.

The second and third studies were implemented specifically to consider the consistency of the notation system in recording and reconstructing movement. Study two replicated the design of the pilot study, but was extended to include two dance forms, for recording purposes. The third study investigated the validity of the system in the reconstruction of a modern dance phrase. A fourth and final study further explored the issue of reliability but it also investigated the validity of the notation system in the recording of movement in a well-known and in a less well-known movement domain.

The participants who agreed to take part in these studies included notation practitioners with varied backgrounds of experience with the notation system and in both movement forms. The participants were asked to either record or reconstruct a selected movement phrase and to return their notation score or video-recorded performance to the researcher.

The selected dance and movement phrases were selected by the researcher and included ballet, modern dance, and gymnastics. The modern dance phrases were choreographed by the

researcher and the ballet and gymnastics phrases were choreographed by experts from those respective fields. In each situation the movement content was recorded by the researcher. However, the notation scores of both the ballet and the gymnastics phrases were discussed with the choreographers and checked by an independent notator for clarity and accuracy.

Each of the studies controlled for variance in four specific ways. Firstly, video-recordings were used in each of the recording studies in order to provide an exact replication of the dancer's performance. Secondly, a comparative number of features were selected for each of the movement phrases so that comparison between phrases could be made. Thirdly, the responses of the participants were looked at both individually and collectively in order to probe the reliability of the system. And fourthly, the studies included different forms of movement in order to discuss the issue of validity.

The analysis of the participants responses involved a comparison of the individual participants' notation scores or performances with the notation score of the researcher. The scores were rated according to the level of agreement and disagreement in both the individual features and the total phrase. In the first instance, this analysis was undertaken by the researcher. However, it was considered that the researcher's findings should be confirmed and thus a second scorer was involved in the analysis of the second and third studies. This would further determine the reliability of the system.

The results of the four studies provided positive information regarding both the reliability and validity of the system. The pilot study provided information that the designed procedure did have distinctive merit for assessing the reliability of the notation system even though the

reliability was low. The fact that high levels of agreement of the features in the phrase were not obtained were mainly due to omissions of certain details. These omissions were considered to be the result of the following factors: the choices made by the participants; the limited time for the recording process; the video-recording being played for the group and not for the individuals; and, the time for consideration and preparation of the finished score was short. In subsequent studies many of these factors were modified, especially in the area of time allocation.

The second study replicated the pilot study. More time was made available and more individual use of the video-recording was allowed in this replication. This study clearly established that the Laban system of notation is an accurate and reliable tool in the recording of movement. In particular, one participant with extensive experience in both ballet and the notation system attained high levels of agreement in each of the three dance phrases recorded. Even though the remaining participants did not achieve high levels of agreement, their recordings revealed that they were able to capture the significant features of the dance phrases. Errors in their notation scores were considered to be due to inexperience.

In the third study, the participants were asked to reconstruct a modern dance phrase from a notated score. In general, the participants produced an acceptable performance of the dance phrase, that is, there was evidence of the major features. In particular, the fifth participant performed an excellent reconstruction with only a couple of the notated features omitted. The high levels of agreements clearly demonstrated that it is possible to translate movement from a notation score and to produce an accurate interpretation of the content. These results again supported the hypothesis that the Laban system of notation is able to capture the essential

features of a movement phrase; that is, it is a highly reliable and valid system for recording movement.

The fourth study in this research further investigated the validity and reliability of the notation system by involving participants in the recording of movement. The study probed whether the system provides a suitable analytical framework for the notator so that any form of movement could be analyzed and recorded; that is, the validity of the system was experimentally challenged. The reliability of the system was revealed in the degree of accuracy of the participants notation scores when compared with the notation score of the choreographer.

The participants in this study were asked to record in two movement domains: firstly, in ballet in which all of the six participants had extensive experience; and secondly, in gymnastics in which the participants had less experience. The high levels of agreement obtained in both the well-known movement domain and the less well-known domain indicated that knowledge of the notation system does provide a means by which the notator can adequately record movement content. Strong support for the validity of the system resulted. Further, more information regarding the reliability of the system was established. This evidence, that the Laban system is a valid tool for recording movement, along with a related and high level of reliability, gives strong support to the overall hypothesis of this research project.

It seemed evident to the researcher that the only way to assess the reliability and validity of the notation system was to initiate certain procedures which would test the notation system in both the recording and the reconstructing processes. The procedures involved the recording and reconstructing of designed movement phrases in selected dance forms. The completed notation

scores were analyzed and compared with the notation scores of the choreographer and considered for their accuracy in capturing the required details of the movement phrase. Hutchinson Guest (1984) stated that the value of a notation system can only "be determined by how faithfully the movement is recorded and the ease with which scores can be used" (p.117). Even though there was an attempt to control for variance, it was recognized that it would be impossible to totally eliminate some of the problems encountered in the notation process. Hutchinson Guest (1984) further considered that there would always be "a margin of error on the part of both writer and reader" (p.117). It would seem that, from this statement, a certain degree of error can be anticipated in the recording or reconstruction of movement; that is, that a probability of error is evident. From this research, the level of error was found to be low.

C. Recommendations

Based on the methods, results, and observations of the four studies in this research the following are considered to be sound recommendations to further extend the hypothesis that the Laban system of notation is a valid and reliable tool in the recording and reconstructing of movement.

1. Implementation of the recording and reconstructing studies with larger groups of participants. This would further assess the reliability of the notation system.

2. Extend the recording and reconstructing studies with other dance and movement forms. This would further substantiate the validity of the notation system.

3. Introduce the notation system to beginning dance students to assess its value as a teaching device. By monitoring the ability and understanding levels of the students it would be possible to assess whether and how the notation system enhances their ability to learn, observe, analyze, and teach dance. Application to non- dance situations could also be explored.

4. Design a study in which a notated score of a participant-choreographer is reconstructed by other participants. Those performances would then be compared and the reconstructions assessed by the participant-choreographer. Acceptance of the reconstructions by the choreographer-participant would provide further evidence that the notation system is able to capture the essential components of a dance.

5. Extend and examine participants' responses to recording and reconstructing in a less well-known domain. This would further support the validity, and ideally, the reliability, of the system as a movement notation device.

6. Discuss with professional notators, choreographers, dancers, students, teachers, who have recently become involved with or have been involved for some time with the notation system, as to their impressions, ideas, and feelings about the application of the notation system. This would provide useful information for the development and the relationship of notation in the teaching programmes, dance sessions, and recording and reconstructing settings.

Appendix A

Pilot Study

Participants' Experience in Notation & Dance

All seventeen participants were asked to provide information regarding their experience in both notation and dance: qualifications in Labanotation; training and experience in Labanotation; knowledge and experience in other notation systems; and, training and experience in the modern and ballet dance forms. The following charts indicate the experience and identifies the selected "expert", randomly-selected member and the seven participants of the pilot study.

PARTICIPANTS NOTATION EXPERIENCE

PILOT STUDY

PARTICIPANTS		LEVEL OF EXPERIENCE ELE.	INT.	ADV.	TEACHING	OTHER
1		*	*	*	+	−
2		*	*	*	+	−
3		*	*	*	+	−
4		*	*	*	+	+
5		*	*	*	+	−
6		*	*	*	+	−
7		*	*	*	+	+
8	(R)	*	*	*	+	−
9	(E)	*	*	*	+	+++
10		*	*		−	−
11		*	*	*	−	−
12		*	*	*	−	−
13		*	*	*	−	−
14		*	*	*	−	−
15		*	*		−	+
16		*	*		−	−
17		*	*	*	+	−

* = experience
\+ = extensive experience
− = little experience

PARTICIPANTS DANCE EXPERIENCE

PILOT STUDY

PARTICIPANTS	MODERN DANCE		BALLET	
	TRAINING	TEACHING	TRAINING	TEACHING
1	*	*	*	*
2	*	*	*	*
3	*	*	*	*
4	*	*	*	*
5	*	*	*	*
6	*	*	*	*
7	*	*	*	*
8	*	*	*	*
9	*	*	*	*
10	*	*	*	*
11	-	-	*	*
12	*	-	-	-
13	*	-	-	-
14	*	-	-	-
15	*	-	-	*
16	*	*	*	*

* = experience
\- = little experience

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

PILOT STUDY

CHOREOGRAPHER WITH GROUP

BAR	FEATURES	PARTICIPANTS						
		1	2	3	4	5	6	7
SP	20	13	19	20	13	19	20	20
1	11	8	9	9	5	9	8	9
2	34	18	19	32	18	21	20	22
3	21	12	12	15	8	10	7	17
4	28	9	7	14	15	11	9	9
5	23	10	16	14	8	12	12	13
6	53	10	20	18	30	37	32	28
7	23	14	17	12	15	17	12	18
8	44	25	17	35	32	26	10	28
9	28	11	17	22	15	5	2	10
TOTAL	285	131	153	191	159	167	132	174
% SCORES		46	54	67	56	59	46	61

SP = Starting Position

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

PILOT STUDY

"EXPERT" WITH GROUP

BAR	FEATURES	PARTICIPANTS						
		1	2	3	4	5	6	7
SP	20	12	20	19	14	20	19	19
1	11	8	10	10	6	10	9	10
2	40	17	16	35	15	19	19	20
3	23	12	12	15	8	10	7	17
4	32	7	6	14	13	10	9	8
5	32	18	15	17	13	18	15	17
6	57	18	20	21	33	40	28	27
7	34	14	17	14	14	18	15	20
8	47	25	16	33	28	24	11	20
9	20	5	5	4	13	3	0	4
TOTAL	296	136	137	182	157	172	132	162
% SCORES		46	46	61	53	58	45	55

SP = Starting Position

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

PILOT STUDY

RANDOMLY-SELECTED MEMBER WITH GROUP

BAR	FEATURES	PARTICIPANTS						
		1	2	3	4	5	6	7
SP	14	13	13	14	13	13	14	14
1	11	9	9	11	5	9	10	9
2	39	24	22	26	22	23	24	29
3	23	13	15	16	8	11	8	17
4	24	12	11	7	14	16	15	11
5	40	26	15	18	14	17	16	20
6	45	12	16	21	20	31	24	26
7	35	18	22	15	18	24	21	28
8	36	25	17	28	26	25	12	23
9	13	1	1	6	1	1	8	1
TOTAL	280	153	141	162	141	170	152	178
% SCORES		55	50	58	50	61	54	64

SP = Starting Position

Appendix B

Study # 2 - Recording

Participants' Experience in Notation & Dance

Three participants agreed to take part in this study. They were asked to provide information regarding their experience in both notation and dance: qualifications in Labanotation; training and experience in Labanotation; knowledge and experience in other notation systems; and, training in the modern and ballet dance forms. The following chart indicates the experience of the three participants.

PARTICIPANTS	BALLET	MODERN	NOTATION
1	10 years	4/5 years	3.5 semesters Intermediate Certificate
2	14 years	4 years	14 years Advanced & Teachers Certificate
3	6 years	6 years	3.5 years Advanced & Teachers Certificate

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY # 2 - RECORDING

CHOREOGRAPHER AND THREE PARTICIPANTS

BALLET PHRASE #1

BAR	FEATURES	PARTICIPANTS		
		1	2	3
SP	22	19	22	22
1	41	38	41	26
2	72	48	72	52
3	6	5	7	4
4	80	47	80	58
TOTAL	222	157	222	162
% SCORES		71	100	73

SP = Starting Position

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY #2 - RECORDING

CHOREOGRAPHER AND THREE PARTICIPANTS

BALLET PHRASE #2

BAR	FEATURES	PARTICIPANTS		
		1	2	3
SP	28	21	27	23
PR	38	29	33	27
bar 1 beat 1	22	20	18	18
bar 1 beat 2	40	38	37	29
bar 1 beat 3	22	11	19	13
bar 1 beat 4	28	22	27	22
bar 2 beat 1	33	23	28	24
bar 2 beat 2	33	19	24	25
bar 2 beat 3	13	13	3	12
bar 2 beat 4	26	18	26	18
TOTAL	283	214	242	211
% SCORES		76	86	75

SP = Starting Position

PR = Preparation

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY #2 - RECORDING

CHOREOGRAPHER AND THREE PARTICIPANTS

MODERN DANCE PHRASE

BAR	FEATURES	PARTICIPANTS		
		1	2	3
SP	25	24	25	24
1	34	19	33	31
2	30	19	26	23
3	38	15	34	28
4	35	28	33	32
5	31	18	31	20
6	16	6	16	7
7	34	17	29	19
8	51	27	31	25
9	37	23	37	27
10	31	19	31	23
11	49	18	49	32
12	33	25	33	25
13	31	26	31	15
14	22	12	18	12
15	18	7	18	8
16	30	21	31	20
TOTAL	545	324	506	371
% SCORES		59	93	68

SP = Starting Position

Appendix C

Study # 3 - Reconstruction

Participants' Experience in Notation & Dance

Five participants agreed to take part in this study. They were asked to provide information regarding their experience in both notation and dance: qualifications in Labanotation; training and experience in Labanotation; knowledge and experience in other notation systems; and, training and experience in the modern and ballet dance forms. The following chart indicates the experience of each participant.

PARTICIPANTS	BALLET	MODERN	NOTATION
1	2 years	2 years	8 months
2	2 years	2 years	8 months
3	2 years	2 years	8 months
4	20 years	3 years	1.5 years Elementary Certificate
5	Extensive	Professional performer	1 year

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY #3 - RECONSTRUCTION

CHOREOGRAPHER AND FIVE PARTICIPANTS

MODERN DANCE PHRASE

BAR	FEATURES	PARTICIPANTS				
		1	2	3	4	5
SP	36	34	36	34	35	36
1	10	10	8	10	10	10
2	56	37	38	36	38	56
3	89	84	85	83	86	87
4	56	45	52	40	53	56
5	66	66	65	51	66	66
6	67	60	56	40	63	67
7	45	44	42	36	43	45
8	45	43	42	29	39	45
9	40	39	39	29	34	40
10	57	50	53	39	51	57
11	56	49	50	30	51	55
12	43	31	29	24	35	43
13	48	23	35	21	29	48
14	73	57	63	41	49	73
15	49	40	42	28	34	49
16	39	29	31	30	26	39
TOTAL	875	741	766	742	742	872
% SCORES		85	88	85	85	99.7

SP = Starting Position

Appendix D

Study #4

Recording in a Known and Less Well-Known Domain

Participants' Experience in Notation & Dance

Six participants agreed to take part in this study. They were asked to provide information regarding their experience and qualifications in Labanotation. They were also asked to provide information regarding their experience and qualifications in several dance forms (ballet, modern, ethnic, and jazz), aerobics and gymnastics. The following chart indicates the participants' experience and qualifications in notation and movement forms.

EXPERIENCE (YEARS) IN DANCE, AEROBICS & GYMNASTICS

PARTICIPANTS	BALLET	MODERN	JAZZ	ETHNIC	AEROBICS	GYMNASTICS
1	30	8	0	2	10	0
2	20	10	10	10	4	0
3	20	8	10	10	0	0
4	10	3	6	0	3	0
5	17	10	13	3	0	0
6	9	1.5	0	3	0	0

EXPERIENCE & QUALIFICATIONS IN LABANOTATION

PARTICIPANTS	EXPERIENCE	QUALIFICATIONS CERTIFICATES
1	14 years	Advanced & Teacher
2	10 years	Advanced & Teacher
3	10 years	Advanced
4	1 year	Elementary
5	1 year	Elementary
6	1 year	Elementary

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY #4

RECORDING IN A KNOWN AND LESS WELL-KNOWN DOMAIN

BALLET PHRASE

BAR	FEATURES	PARTICIPANTS					
		1	2	3	4	5	6
SP	22	22	22	22	16	16	22
1	41	41	41	41	28	36	33
2	72	72	72	72	38	49	57
3	7	7	7	7	4	4	5
4	80	80	80	80	32	41	56
TOTAL	222	222	222	222	119	146	173
% SCORES		100	100	100	66	78	74

SP = Starting Position

PARTICIPANTS' SCORES

FOR FEATURES AND TOTAL PHRASE

STUDY # 4

RECORDING IN A KNOWN AND LESS WELL-KNOWN DOMAIN

GYMNASTICS PHRASE

BAR	FEATURES	PARTICIPANTS					
		1	2	3	4	5	6
SP	19	19	19	17	13	13	15
1	24	24	22	24	19	5	7
2	19	18	17	18	9	0	17
3	29	29	27	29	18	24	23
4	9	9	9	9	7	7	9
5	26	26	26	26	18	26	26
6	21	21	21	21	18	1	21
7	12	6	12	12	8	6	8
8	8	8	8	7	7	6	9
TOTAL	167	160	161	163	117	88	134
% SCORES		96	96	98	70	53	80

SP = Starting Position