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Introduction to “The Movement's Voice”

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The avant-garde theatre of the 1960s era saw a shift away from conventional approaches to playwriting and characterization toward emphases on movement, live sound, and ensemble acting as new ways to create performances, often involving improvisation and even audience participation. In the 1970s and 1980s, many artists turned to formal experimentation, incorporating technology, film, recorded sound, and other elements in tandem with text, movement, and choreography. In "The Movement's Voice," Assaf Benchetrit explores past advancements in the field as well as more current practices and innovations in dance using computer science and technology, as well as improvisation, in his work as a choreographer.

In this essay, he shares his discoveries, positing that his system offers new possibilities of creating dance and engaging dancers in rehearsals, with intriguing implications for traditional dance as well as theatrical forms that utilize dance, movement, music, and technology.

INTRODUCED + EDITED BY DAVID CALLAGHAN + ANN M. SHANAHAN

THE MOVEMENT'S VOICE

BY ASSAF BENCHETRIT, UNIVERSITY OF NEW HAMPSHIRE

INTRODUCTION

It has been said that music is the language of the soul, allowing for communication without words. In my years working as a professional dancer and choreographer, I have found this to be true. I have also found that dance—the relationship it offers between movement and sound—brings further layers of depth and complexity to that communication. My research in recent years explores the nature of the relationship between dance and music, incorporating computer science technology. I have developed a system called The Movement's Voice, a computer program that translates dancers' movements into music and sound in real time. Through use of this system, I have discovered a complex relationship between a dancer's movement and music. The Movement's Voice presents an innovative way to approach choreography, which I hope will be of interest to and put to use by other artists, in the field.

The connection between dance and music has fascinated me ever since I began to dance twenty years ago. My interest in researching this relationship grew during a rehearsal of George Balanchine's Apollo. While dancing Apollo's variation after the muses' introductions, I was trying to follow Stravinsky's contrasting string orchestra composition while facing challenging choreography. My teacher, Nadezhda Timofeyeva, then emphasized how important the music was for Balanchine by quoting his famous saying, "Dance is music made visible" (Joseph 310). A few years later, my interest in this idea grew when I rehearsed the solo of "Time to Talk" from José Limón's masterpiece There Is a Time. The restaging choreographer, Maxine Steinman, told me that music was an essential aspect for Limón, who believed the dancer's body is a musical orchestra. Each part is a completely different instrument, but all together they form a harmonious image. Limón referred to this idea as "voices of the body" (Dunbar 38-9).

During my studies in math and computer science at the university, I became increasingly intrigued by the possibility of combining innovations of science and technology with the art of dance. This research has allowed me to explore personal interests as well the work of dance pioneers who have explored the connection between music and dance through theory and practice. Inspired by these artists and theorists, I explore the dance–music connection through The Movement's Voice. This program investigates the question: "What does movement sound like?" And, furthermore, how can movement create music, instead of following it?

The system I developed translates a dancer's movement using a mathematical algorithm for scaling octaves into different patterns of sound and music. Over time, I expanded the program to include additional functions in relation to color and light as they respond to movement. Consequently, this system allows dancers and choreographers to explore how sound, music, light, and color can be triggered and/or suggested by the physical execution of movements. My research led me to a number of discoveries, which I share in this essay.

THEORETICAL FOUNDATIONS

In combining body movement with sound, light, and color, my work on The Movement's Voice is situated in a centuries-long discourse in Western thought on art synthesis. Contemporary movements in arts synthesis derive from European Modernism of the 1850s–1930s, which strove to combine a variety of art forms and media into a comprehensive whole representing a crucial artistic and/or social point. In the 1980s, new endeavors to theorize arts synthesis utilized research on nonverbal communication, such as Rudolf von Laban's system of body movement expression, and Deryck Cooke's analysis of the expressive elements of music, based on the idea that performance of any kind "draws its character from body movement patterns" (Chapple and Davis 53–4). According to Chapple and Davis's theoretical model, the instrument of the dancer's body combines sets of cultural forms and physiological mechanics in performance. Dance and music interrelate through a rhythmic relationship between musical "tensions," generated by oscillations of sound waves, and "muscle tension fluctuations," produced by activated body parts. Correspondingly, musical pitch has its "equivalent" in "spatial variation" of body movement. Finally, the performers' interaction and movement are connected to all these systems as part of the larger model and process of art synthesis (61–79).

Recent studies in art synthesis, and specifically the relationships between sound, color (or visual form), and movement, emphasize the concept of synesthesia (union of sensations), meaning a cross-sensory experience in the arts. Synesthesia refers to an affective state in which an individual receives a physical stimulus in one sense modality—for example, the sound modality—and experiences a sensation in another—such as the color modality. That is, they perceive colored sound. Synesthesia can be understood as our conscious mind's correlation between the different sensory modalities we use in interpreting the world. Synesthesia—producing stimuli or inducers are various and may include graphemes, phonemes, general sounds, music tonality, musical notes, time units, personalities, colors, textures, and moving or stationary shapes (Robertson and Sagiv viii, 4–5, 15; Cytowic and Eagleman 16–8).