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Music and Man in Art: The Future of Media and Technology

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Abstract

Music can provide psychological benefit, and music therapy has been accepted for many people across the world. Iso-principle has been known as an important concept in music therapy. Art is roughly divided into two categories, which are visual arts and reproducing arts. An attempt to overlap these categories would be a method of recording and playing back music. Historically, human could come to experience polyphonic music like the instrument of Carillon, to listen to reproducing music by music score and phonograph, and to be enjoy music anytime by use of media and technology. Recent music environment includes the voice synthesis technology "VOCALOID", a video distribution site on the internet. In the future, music will make people happier if new technologies are widely recognized and personalized use is widespread.

Keywords: Music therapy; Iso-principle; Music score; Carillon; Vocaloid

Introduction

Music has been familiar to everyone in modern era. Whether we are at home, at work, or traveling around the city, we always hear all sort of music. We can actively listen to the favorite music and get event information from Personal Computer (PC) or smartphone without going to CD shop [1]. Thus, modern people always contact with music on a daily basis, which can be a pleasure, a benefit, or a magic medicine when they are in trouble [2]. Music has been known to have psychological effects and music therapy has been accepted for many people across the world [3]. For the relationship between music and human feeling, the important concept “Iso-principle” has been proposed by Altshuler [4]. He was a psychiatrist and pioneer music therapist, and contributed the development of music therapy [5]. Furthermore, there are many opportunities to enjoy music at present, but in the past, there were various historical process for years [6].

Various Elements of Music

This article describes the relationship among people, music, the media connecting them, and the development of the underlying technology. What are the three elements of music? They are rhythm, melody and harmony [7]. From the view point of prehistoric times, people tried to hit bodies and trees at specific time intervals [1]. They felt a spiritual strange feeling and could find its value. This is the birth of "rhythm". Eventually, people had sung along with the development of the language. In other words, they had noticed to learn the pleasure of changing the pitch of the sound. This is "melody" [8]. Consequently, the first song that began to be sung was a “work song,” which seemed to increase the efficiency of work such as hunting, agriculture, and fishing and distract their fatigue [7]. Harmony is the combination of sounds from different pitches. This process has probably taken a long time to become conscious. It was around the 10th century that "Parallel organum" appeared in the history of Western music [9]. Except for special vocal method such as polyphonic overtone singing, humans cannot basically make sounds of multiple pitches at the same time. Furthermore, musical instruments with a variety of pitches will be developed and spread much later. Harmony could be born only when a group of people with the vocalization technology to control the pitch or with the musical skill of the instrument to control the pitch. It took a long time for harmony to actually develop to a systematic level [8]. Historically, how has music been transmitted for long period of years? In the beginning, the content of the music was given by oral transmission. Later, in the middle Ages, music notation was devised in the West countries to show complex songs with multiple parts [10]. After that, a musical score (staff notation) has invented and become popular as a common format for presenting the music. It is the presence of the staff notation that allows us to understand Bach's designs 300 years ago [11]. About music opportunities, people could experience the sound only around them. Later, the media provided information on concerts where music could be heard as they like. Records have evolved from LPs to CDs, and newspapers, radio, television, and recent internet have played a role as the information of music. At present, music itself can be instantly obtained from smartphones anytime, anywhere. Sheet music is certainly a medium for

representing music, but it does not record the finished sound. It's just a blueprint to be played. How it is actually expressed depends on the musician's interpretation and technique.

Art has Visual and Reproducing Factors

Art can be roughly divided into two categories [12]. One is “visual arts”, which are already completed in one form without changes for years, such as paintings and sculptures. The other is "reproducing arts", which includes music and performing arts with the only presence at the moment. An attempt to overlap these categories was "a method of recording and playing back music”. Music boxes appeared in the 17th century, and mechanical self-playing instruments such as automatic pianos appeared in the 19th century. Since the 1870s, Edison invented a phonograph as a sound recorder [13]. After that, it developed using electric and electronic knowledge. As a matter of fact, music playback devices have been present in the past. The authors together visited and observed an instrument called “Carillon” at the Alte Nikolaikirche Church, Frankfurt, Germany (Figure 1).

Figure 1: *Musical instrument of Carillon with automatic play of multiple bells.*

Carillon from 15th century is considered to be the first automatic musical instrument in the West, and it allows automatic control of multiple arranged church bells [14]. In the photo, there are several bells of different sizes at the bottom. Then, in the 1920s, auto-play instrument named orchestras became popular. It has various types of sound generators inside, and can automatically reproduce an ensemble with various sounds. At that time, the fun music of jazz encharmed many people. Auto-play instruments are certainly innovative devices that can reproduce music, but they can only play a specific set of sounds. In that respect, the invention and spread of phonographs (1850s-1930s) was a revolutionary event. Hungarian great composer Bartok (1881-1945) traveled around Eastern Europe and recorded folk songs and music from various places on a phonograph [15]. The influence has been found in his music of Hungarian Folk Dances and Micro cosmos. Thanks to the acoustic recording device, we have access to any music.

Recent Development of Music

Since the latter half of the 20th century, music and sound-related technologies have greatly developed. Since the 1940s, artists' music activities have become a popular culture through television and magazines, and their music presentation have been ongoing from LP records to CDs [16]. Since the 1960s, the Beatles have evolved into audio technology. They have used electricity, with the emergence of effectors that add multitrack editing and sound effects. It is now possible to design music ensembles freely electronically. In the 1970s, compact recording / reproducing devices such as the Walkman appeared, allowing anyone to easily play their favorite music anywhere. In Japan, the culture of karaoke, piano lessons and school brass band have also developed, suggesting that everyone can be a musician [17]. Since the beginning of the 21st century, technology and music-related culture and technology have further evolved [18]. They included voice synthesis technology "VOCALOID", a video distribution site on the Internet, a flat-rate music distribution service, and the spread of smartphones [19, 20]. In summary, the media and technology that connect people and music has evolved over the years, especially in the modern era where new cultures continue to emerge. As a result, we have the opportunity to enjoy music anytime, anywhere. As to the problems and future perspective, it seems that each person cannot recognize existence and benefits of the music or has not fully utilized it. In the future, music will make people happier if new technologies are widely recognized and personalized use is widespread.

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