Intonational Protention in the Performance of Melodic Octaves on the Violin

Janina Fyk
Fryderyk Chopin Academy of Music, Music Acoustics Laboratory, Okólnik 2, 00-368 Warsaw, Poland

Abstract. The purpose of this study was to examine whether, in violin performance, frequency changes occur in the tone preceding a given tone which might represent an announcement of the direction of that tone. In order to examine this possibility, melodic octaves were performed on the violin upwards from B₄ (494 Hz) and downwards from B₅ (988 Hz) on the A and E strings with and without position shift. Altogether 20 octaves performed upwards and 20 downwards were recorded monophonically on tape at a speed of 38.1 cm/s. A method of measuring the frequency of the fundamental partials of the violin tones was applied which took into account the succeeding stages of the tone. Specially prepared computer programs were used for this purpose. Particular attention was focused on frequency changes in the final stage of the first tone of the melodic octave. There was strong evidence to suggest that already in the last state of a given tone an announcement of a pitch change in the following tone is issued. Frequency modification in the last state of a tone which is in agreement with the movement direction of the following tone suggests that the performer incorporates protention (anticipation) in the process of shaping subsequent pitches in order to obtain homogeneous sound unity.

1 Introduction

Music is an art which is actualized in time. According to Husserl (1966/1989), a melody, as well as other elements of a piece of music, can be regarded as an object which is spread out over time. In the perception of a melody, tones which have just been heard represent a perceptive now; yet at the same time, they are constantly made present in the course of the melody. This constant flow of making present creates a unity between what is past and what is to come, and raises expectations concerning future musical events. Therefore In-garden (1973, p.90) maintains that, “a listener perceiving the current phase of a melody does not admittedly actually hear the following phase of the melody, yet s/he feels the directional drift in which the melody is flowing”. This formation of the time sequence in a piece of music has particular significance with respect to intonation in violin playing. Since a melody represents a perceptual entirety, the attainment of so-called pure intonation on the violin – whether at the level of the tone, the interval or the musical phrase – is possible only when the intention of the performer and the movement of the fingers go hand in hand with an awareness of the musical context. Only in this case do conditions exist which are conducive to the shaping and control
of intonation which is in keeping with the total playing event. In addition, as the Polish cellist, K. Wilkomirski aptly puts it (Wilkomirski, 1965, p.90): “Imagination reveals ideal tone pictures, imagined but nevertheless precise, supple and free from imperfections and inaccuracies. The ear perceives real tangible tone phenomena, which are assessed and critically analysed on the basis of the auditory imagination” (p.97). It is likely that, as far as violin movement skill is concerned, one of the effects of directed anticipation of on-coming musical events will be a quicker and more precise movement of the fingers in performing succeeding tones of a melody. The question can be asked, therefore, whether the pitch of a given tone of a melody is already modified towards the end of its execution, as a result of the fact that it precedes this particular tone of the melody and not any other. Do pitch changes take place in a tone currently being performed as a result of the fact that a position shift related to the accomplishment of the pitch of the following tone is about to take place? To answer this question, this study aims to examine whether, in violin performance, frequency changes occur in the final state of the tone preceding a subsequent tone which might represent an announcement of the direction of that tone.

To address the above mentioned question, the author has concentrated on the most basic and elementary level of melodic intonation, and for the purpose of this study, the musical material has been restricted to two tones which make up a melodic octave. This interval satisfactorily illustrates melodic movement and the idea that each individual part affects every other. Even at this level, the manifestation of Gestalt is apparent, and indeed this study is related to the psychological and philosophical foundations of Gestalt theory (Köhler, 1929) with special emphasis on the functional approach and Husserl’s phenomenological theory of time (see Husserl, 1966/1989; Eichert, Schmidt, & Seifert, 1997, this book).

It was hypothesized that a frequency change occurs in the final state of the first octave tone which announces the direction of the second octave tone. Based on Husserl’s concept of protention this phenomenon has been called intonational protention. Intonational protention denotes the performer’s awareness of the musical context closest to the tone presently being performed. This leads to an earlier reaction to the action which is about to take place, i.e., a change in pitch in the following tone of the interval. Thus, protentional frequency change represents an earlier reaction while change in pitch in the following tone signifies action. In other words, the hypothesis set out to examine the performer’s reaction to the action, and for this reason special attention is paid to the connection and interaction between mental anticipation and behavioral (pitch change) levels.

Finally, it must be emphasized that although the problem of the present research is restricted to the intonational aspect of octave performance on the violin, there may be a possible connection with both temporal and neuropsychological aspects of perception and performance (Fraisse, 1966, 1982, 1987; Scheid & Eccles, 1975; Todd, 1994, 1995).