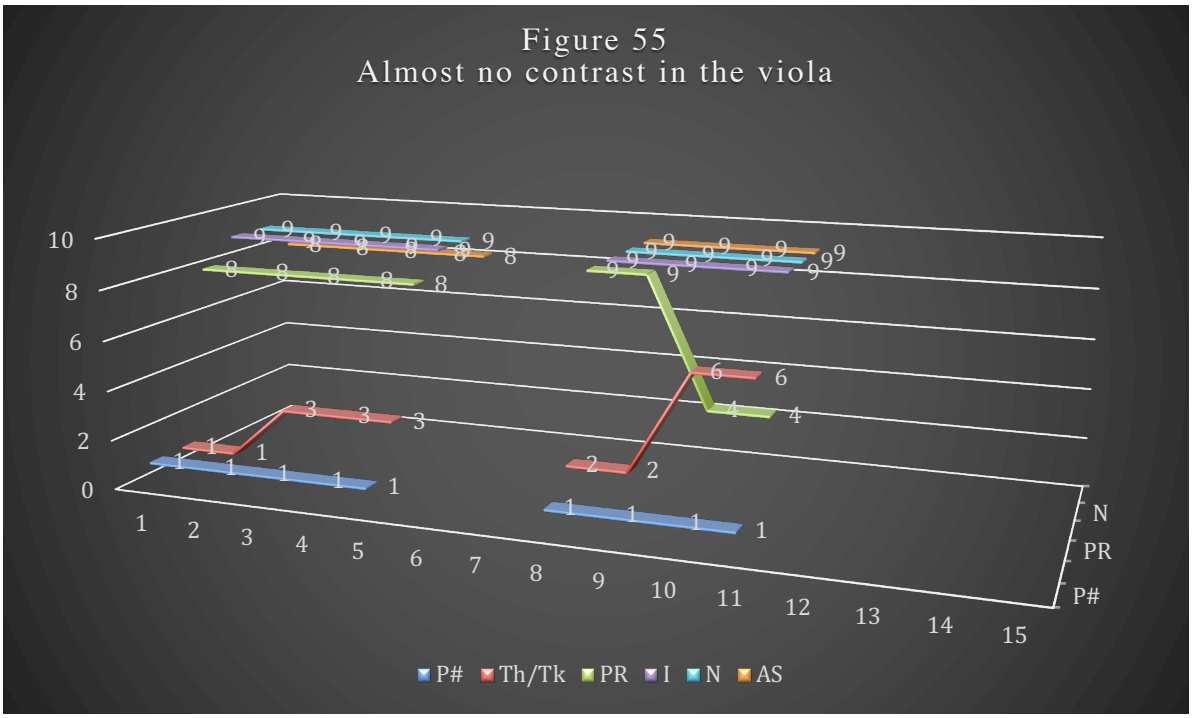
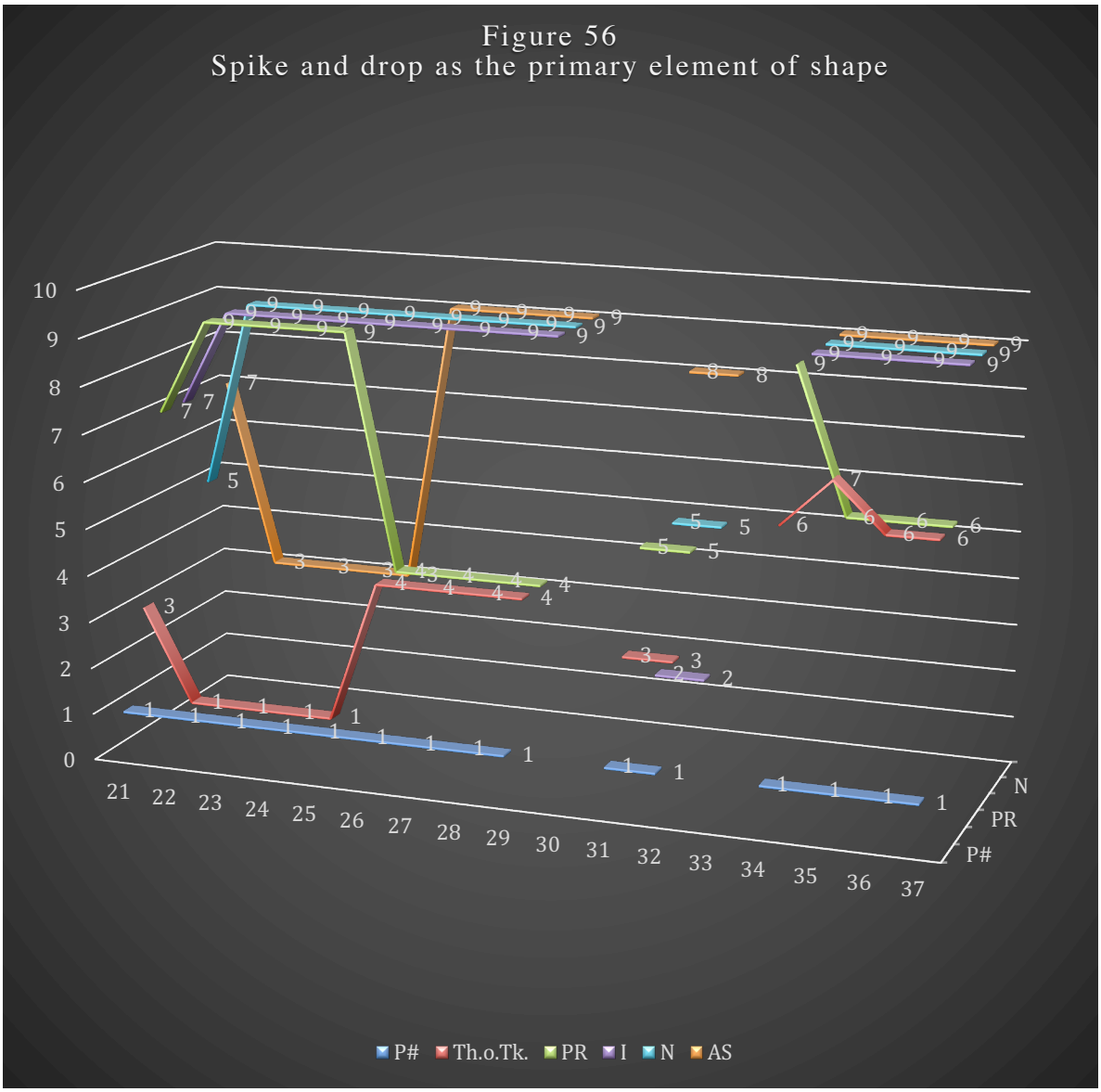
# Chapter 6: The Noisiest Instrument in Crama

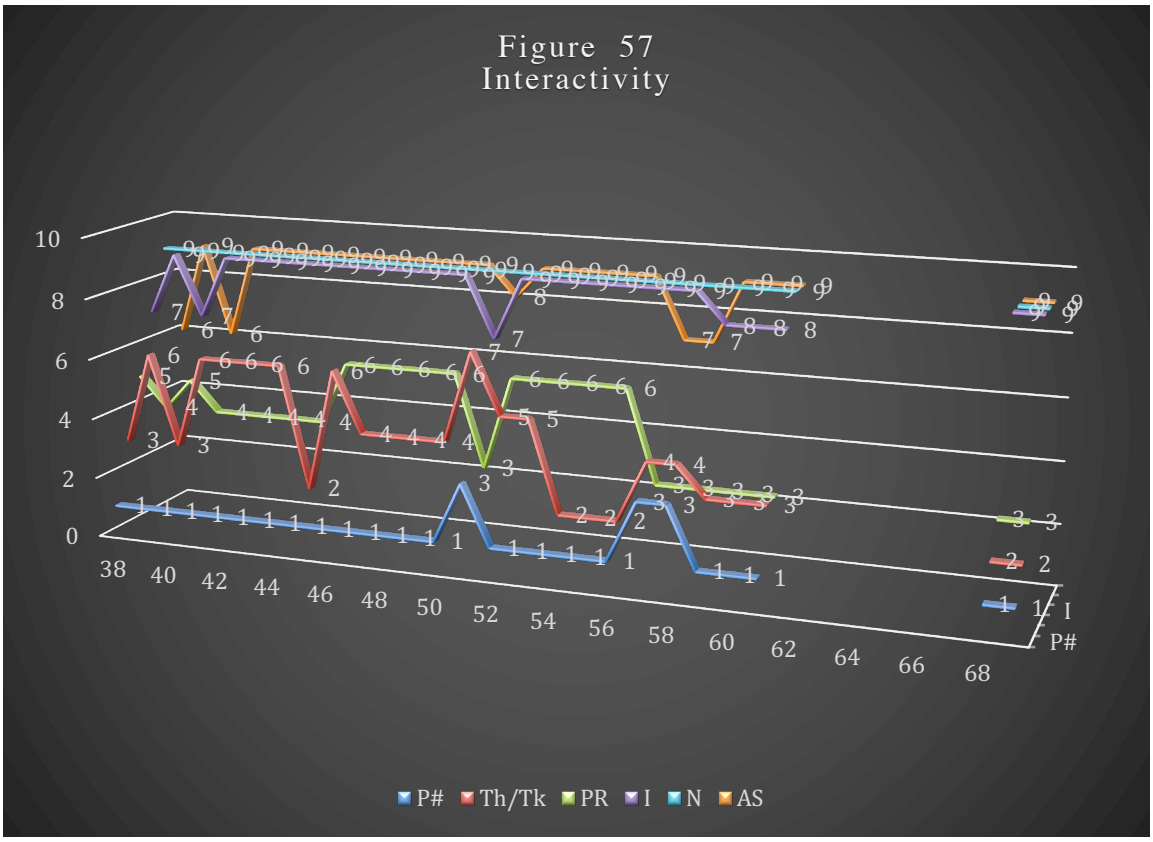
Chapter six discusses the comparisons, in the viola, between different combinations of the contributing elements of sound. The elements are the number of partials, the thinness or thickness of sound, the range of partials, the irregularity of sound, the amount of noise, and the sharpness of attack.




When compared with the others, the viola is almost the noisiest instrument in Crama. The irregularity of sound and the amount of noise are parallel in Figure 55, and bars 8 – 11 indicate the parallelism between the amount of noise, inharmonicity, and sharpness of attack. The parallelism between these elements proves that the sharpness of attack affects the levels of noise and inharmonicity. The number of partials is at its lowest since there is a higher level of noise. Also, the thinness or thickness of sound fluctuates between four and nine. This fluctuation creates a shape for the thinness and thickness of sound category, unlike the other stagnant elements in Figure 55.




Compared with Figure 55, Figure 56 suggests a clear sense of shape due to spikes and drops in the amount of noise and sharpness of attack. The presence of spikes and drops are due to the change of levels among the contributing elements of sound. Hence, peaks and drops always contribute to the evolution of timbre. The shape of a phrase is affected as quality-defining elements of sound are modified. This modification, among sections, bars, or within the section and phrases, can be considered one of the contributing factors to the transformation of timbres in a sound-based composition.




Similar to Figures 53C and 55, the sharpness of attack and the level of noise are parallel for the majority of the time in Figure 57. Also, like Figures 53C and 55, the number of partials here is always between 1 – 3. These similarities indicate the importance of noise in the viola as part of the construction of timbre, when considering viola as the noisiest instrument among the flute, clarinet, and the violin, thus far.

In Figure 57, the lower portion is occupied with the number of partials category. The upper portion is occupied by the interaction between irregularity of sound, the amount of noise, the irregularity of sound, amount of noise, and sharpness of attack. Furthermore, the introduction of new activity between thinness and thickness of sound, the range of strongest partials and range of harmonic partials, contributes to the anatomy and contrast of sound in Figure 57 and the contrast between Figures 57, 54, and 55.

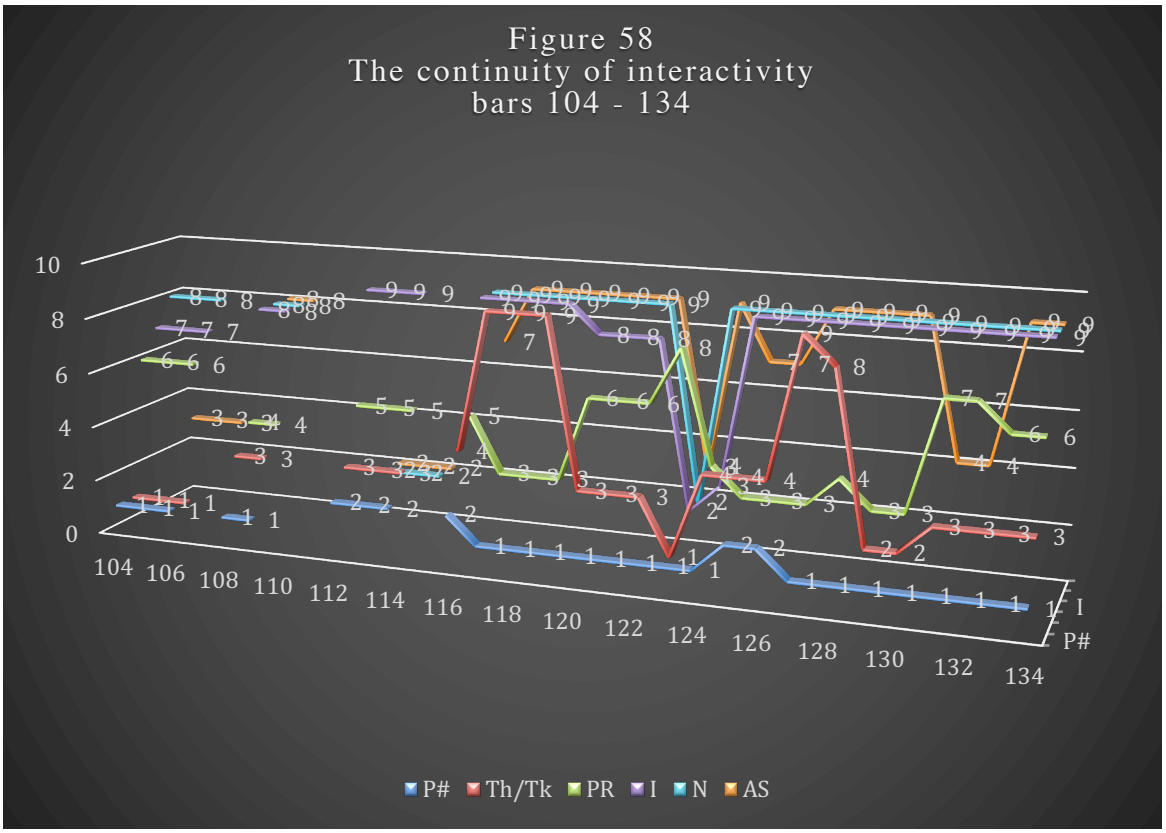


Figure 58
The continuity of interactivity
bars 104 - 134
10
8
6
4
2
0
104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134
I
P#
P# Th/Tk PR I N AS

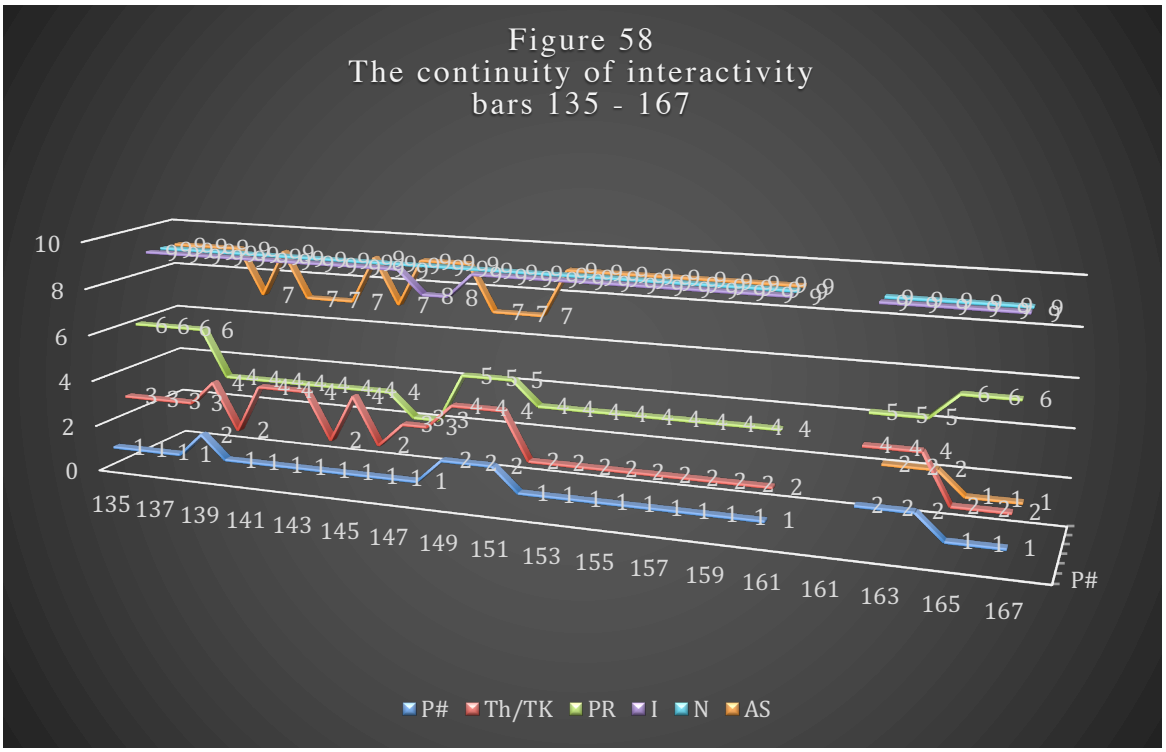


Figure 58
The continuity of interactivity
bars 135 - 167
10
8
6
4
2
0
135 137 139 141 143 145 147 149 151 153 155 157 159 161 161 163 165 167
P#
P# Th/TK PR I N AS

There is an interactivity between the sharpness of attack category and the range of strongest partials and the thinness and thickness of the sound category, which creates contrast in timbres with Figures 56 and 57. There is an evolution in the interactivity between the elements of sound from Figures 56 – 58, which contributes to the transitional variation character of this section. The transformational character of the section above resonates with the idea that the structural process is the principal procedure to form in Crama.

Figure 58 can be divided into three sections: A) bars 104 – 114, showing stagnant parallelism; B) bars 116 – 134, showing spikes and drops; and A') bars 135 – 168, showing stagnant parallelism. There is a clear ABA' shape to this Figure 58, and the notion of organized form supports the idea that the contributing elements to sound are the primary elements of sections. The introduction of such an organized shape also shows the contrast between Figure 58 and Figures 56 and 55. As Crama evolves, form becomes more clear.

Figure 59
The flute


Figure 59
The clarinet

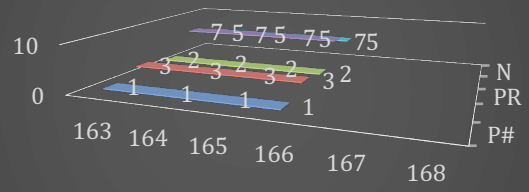



Figure 59
The violin

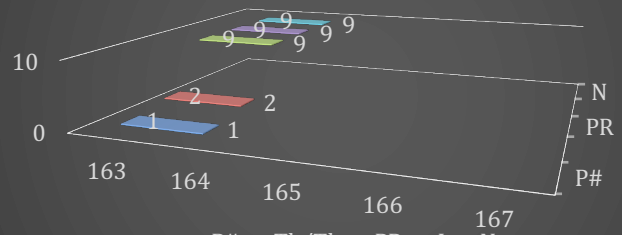
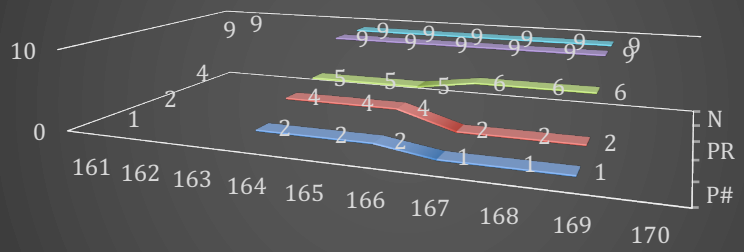



Figure 59
Viola



The number of partials and the sharpness of attack are parallel in Figure 59, as does the irregularity of sound and amount of noise, which is similar to Figure 56, the beginning section. This means there are connection and return between the beginning and ending sections in the viola. The return can be considered as a tool to create form, as it is used in a sound-based composition such as Crama.

In this Figure, the range of partials, the irregularity of sound, and the amount of noise in the viola are all parallel. This is in contrast to the woodwind instruments, as those elements of sound do not display parallelism, which exaggerates the difference between woodwinds and the strings. Note the parallelism between the irregularity of sound and the amount of noise in this section.

**Conclusion:**

In the viola, the interactive relationships between different elements of sound contribute to the construction of the timbre and its evolution through various sections. As a result, this relationship affects the construction of shapes, phrases, sections, and form.

Figure 60
The appearance of P#, Th/Tk, PR, I, N, AS, in the flute in Crama

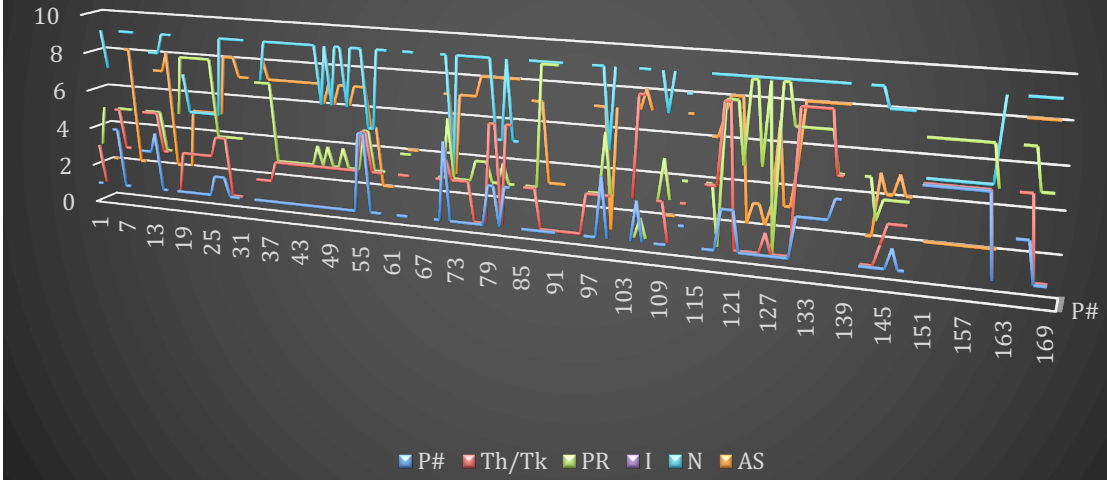



Figure 61
The appearance of P#, Th/Tk, PR, I, N, AS, in the clarinet in Crama

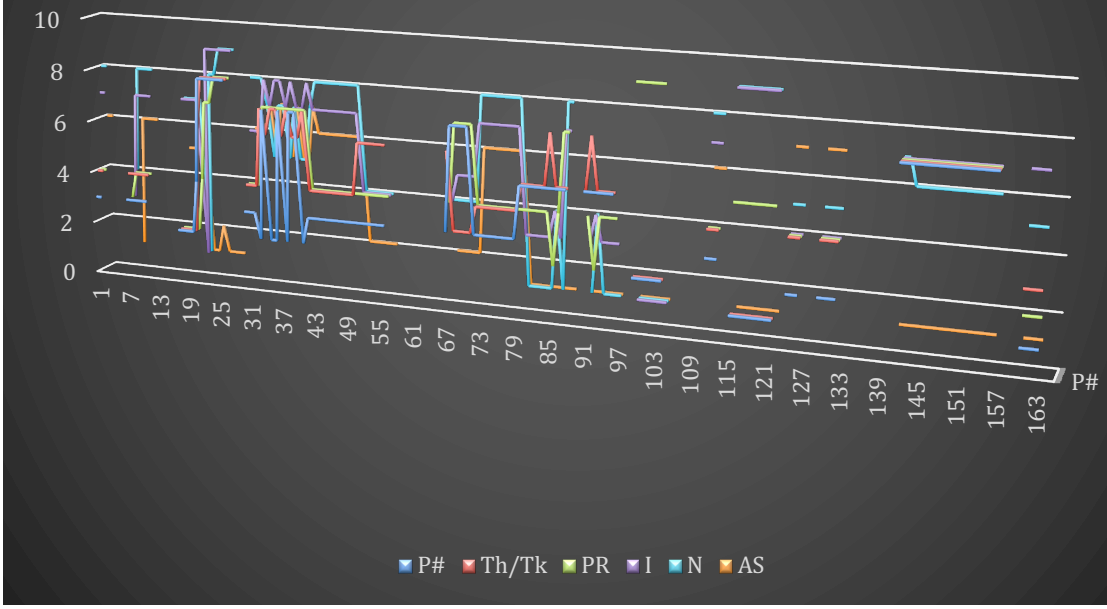


Figure 62
The appearance of P#, Th/Tk, PR, I, N, AS, in the violin in Crama

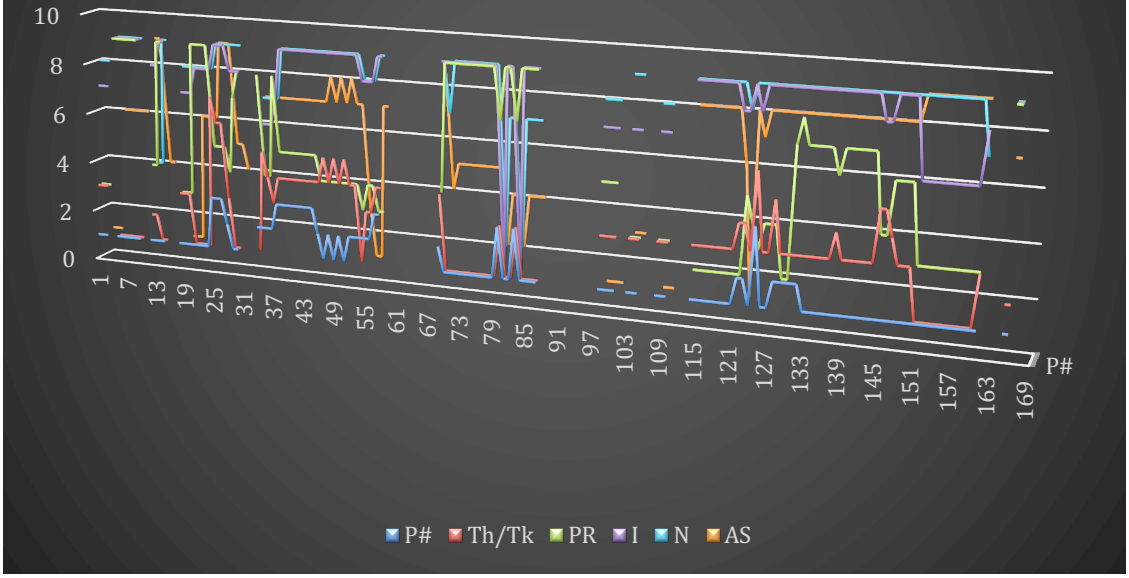



Figure 63
Different elements of sound in the viola for the entire piece