

Atonal Chords

The piece is based on the emergence and dissipation of the following chords:

The image displays four atonal chords, labeled 1 through 4, arranged in four systems. Each system consists of four staves: a grand staff (treble and bass clefs) and a single bass clef staff. The chords are represented by groups of notes with accidentals (sharps and flats) on various staves.

- Chord 1:** Located in the first system, it consists of three notes in the treble clef (F4, G4, A4) and one note in the bass clef (C3).
- Chord 2:** Located in the second system, it consists of three notes in the treble clef (G4, A4, B4) and two notes in the bass clef (D3, E3).
- Chord 3:** Located in the third system, it consists of three notes in the treble clef (A4, B4, C5) and two notes in the bass clef (F3, G3).
- Chord 4:** Located in the fourth system, it consists of three notes in the treble clef (B4, C5, D5) and two notes in the bass clef (G3, A3).

Each chord is atonal, and built using a method whereby each note that is added contributes to a dissonant interval with the two that came before it. By ensuring that each successive group of three notes contains false relations, the chord that results is one that cannot exist within the tonal system. Whilst the system guarantees the production of an atonal chord, there are many ways of selecting the notes that are input into it, and decisions of this kind determine the characteristics of the result. My first chord uses just three pitch classes, and

the product is one that can be divided into smaller fragments at will. The second uses just two intervals, a minor second followed by a major sixth, and is essentially a stack of notes one semitone apart. The third is freely composed, and the fourth contains all intervals within the octave. Each one was constructed with the capabilities and limitations of the string quartet for which they were composed in mind, and as such are restricted in a number of ways. The first is range, as placing any note below that of the open fourth string of the cello would mean that it would need to be excluded, for example, and the registral qualities of each of the three different instruments have implications for the timbral and dynamic balance of the ensemble. Second is the spacing of each chord, for with two treble instruments and only one of each of the alto and bass, I naturally had more capability for orchestrating notes in the higher register.

When it came to fitting these chords into my instrumentation, I discovered that it was not always possible for the notes as I had voiced them to be sounded together. I researched the capabilities of string instruments, and after getting to grips with harmonics and the various means of producing them, had a greater pitch range to work with. Samuel Adler's *The Study of Orchestration* was my main point of reference, and I learned here that the clearest and most stable harmonic was that which is produced by touching a fourth above a pressed note or open string.³ As well as being of practical use, harmonic notes have an idiomatic timbral quality, which I have employed in order to provide textural variation. With four instruments of the same family, I discovered that textural contrast can be employed in a rhetorical manner, and looked to the past in order to find techniques idiomatic of atonal and serial string music. I was surprised to find Arnold Schoenberg dismissive of the expressive potential of timbre in atonal music,⁴ but learned much from the 'stylised noise'⁵ of Krzysztof

³ Samuel Adler, *The Study of Orchestration* (London: W. W. Norton & Co. Ltd., 2002), p. 57.

⁴ Bryan R. Simms, *The Atonal Music of Arnold Schoenberg, 1908-1923* (Oxford: Oxford University Press, 2000), p. 77.

⁵ Jonathan James Hargreaves, 'Well, What Do You Know? Or, What Do You Know Well?', in *Music and Familiarity: Listening, Musicology and Performance*, ed. Elaine King and Helen M. Prior (Abingdon: Routledge, 2016), p. 152.

Penderecki's *Threnody for the Victims of Hiroshima* as demonstrated by the instances of passages in the higher register of the violin. Whilst there was no opportunity to have my work performed, I did make a number of amendments following a review of my score during a tutorial, particularly to the final chord which is now to be played non vibrato. This is the antithesis to the tremolo which pervades the piece up until this point, and serves as the final textual contrast as the cello at last drops to its open C string.

Bibliography

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