

Introduction:

As a new member of the team of theory teachers of the Royal Conservatoire in 2020 I was fascinated by the dusty, somewhat worn-out building. Not the state of the building itself caught my attention, it was the realization history was written here. In the concert halls famous pieces were premiered, in the hallways the world's most famous composers had visited and in the staircases generations of students and teachers had found their way. Between classes I found myself wandering around the building, opening doors with the curiosity of a child: sometimes accidentally disturbing a class, other times finding posters that sparked even more wonder.

When a year later the new Amare building was planned to be inaugurated the reality was not all departments could move yet. A part of the school, amongst others the Sonology department, could already inhabit their new rooms, whilst others had to wait roughly half a year longer. This practically meant that I had to walk twice a week from the old building to the new, allowing me to think about the potential, differences and similarities of the facilities. The Sonology department had resided in darkness for multiple decades. In the old building the obscure rooms were a testament of the history: outdated technology was widespread, both in the shape of teaching facilities as well as in spare parts of disassembled electronics lying around randomly. The new building, with its huge windows located on the 6th floor, offered the absolute contrary. Some of the old technology got stored in glass cupboards and a perfectly organized row of studios were about to be installed.

In my weekly walks I started to mull over the idea to bridge the two buildings. Not physically by walking from one place to another, but to bring some of my fascination with the history from the old building into the new. How could some of the heritage be saved without simply putting it behind glass as an artefact of the past? In one of the explorations in the old building I stopped my walk halfway the staircase gazing at Peter Schat's Tone Clock windows hanging in the entrance of the building, as a static artwork in front of the ant nest The Hague Central Station can be at the backside. While my right hand clamped around the staircase armrest I realized Schat could have halted here as well. Not looking to his own windows since these were still decorating his attic in his Amsterdam house at the Oudzijds Voorburgwal but enjoying the liveliness of the city. My hand was resting on a piece of wood potentially touched by Peter Schat, Louis Andriessen, Kees van Baaren, Jan van Vlijmen and the famous visitors like Mauricio Kagel, John Cage and Karlheinz Stockhausen. This armrest, albeit never played as a musical instrument, was fueled with history and I instantaneously wanted it to sound.

As a composing instrument builder I drafted a plan to remove one or two armrests from the old building after the move. I'd slice it in square parts, cut it up in manageable lengths and tune them. The instrument I wanted to create with it was a diamond marimba, as designed by Harry Partch in the 1940's. Some years ago I constructed a 7,5 meter wide instrument with marimba keys so I knew the drill of tuning wood, this was a great opportunity to research the heritage of American hobo, composer and woodworker Partch. Amsterdam based ensemble Scordatura commissioned me several instruments over the years, I've made them various marimba's and wrote some music for various project. It was an insightful process, mostly focussed on the construction of his instruments, while I mostly studied his *Genesis of a Music* for that purpose. This would be the moment to also get acquainted with the theory behind the instruments. And since the instrument is so closely connected to Partch' theory I imagined it to become an asset for the institution as a whole. A theoretical tool for the creative departments and a performative tool for the performing departments.

Besides the somewhat poetic wish to bring the old building into the new via the wooden armrest there was a very practical necessity for this instrument. Since my employment in The Hague I teach the Sonologists of the institute a course called 'music theory for sonologists'. I learned quickly that

in this studies the level of music theory cannot be more varied: some students never read notes before and can't read any sheet music, others enrolled to this study after first obtaining a bachelor degree in the classical department - including all the connected theoretical courses. Determined to not exclude any of the students I tried to scavenge through all possible perspectives on the broad term 'music theory' in order to find an angle that might appeal to all of them. What both types of students have in common is the computer as their interface for musical creation, but I knew the correlated software and programming are not my forte. However, ever since this approach to music making came into existence theorists like Pierre Schaeffer and Denis Smalley have attempted to create a new approach to sound, next to the physics that underly it. This could be a potential way in, with the diamond marimba as a loyal companion.

Potential insights:

Every year The Royal Conservatoire organizes the Spring Festival. A broad array of new music is presented, written by both students and composers. I knew the marimba could be presented there. In the concert I'd present a new work for the instrument next to two solo concertos by colleague and composer Martijn Padding. Since this in itself was more a project than a research a rightful question was asked with regard to the objectives of the build: was there an underlying question? Mulling over my intentions I firstly wanted to know whether this instrument could indeed be a connecting tool for various departments, but I also wanted to highlight

Partch calls this instrument 'the theoretical Tonality Diamond' brought to practical tonal life. In fig. 1 we find the tonality diamond Partch is referring to: a 6 by 6 field of ratios build from all ratios found in an 11-limit tuning between 1/1 and 2/1. Partch' *Genesis of a Music* builds towards this point via the 5-limit diamond, a system potentially most familiar to the ear trained in equal-temperament. He uses this more bare-boned system (containing only 9 squares) to explain that a number can appear in the over Numerary Nexus (Oidentities of an Otonality) or appear in the the under Numerary Nexus (Identities of an Utonality).

The reasons why Monophony proceed to the limit of 11 are basic and quite specific, as will be seen, but the reason for resting at the limit of 11 is a purely personal and arbitrary one. When a hungry man has a large table of aromatic and unusual viands spread before him he is unlikely to go tramping along the seashore and in the woods for still other exotic fare. And however skeptical he is of the many warnings regarding the unwholesomeness of his fare - lik the 'poison' of the 'love-apple' tomato of a comparatively new generation ago - he has no desire to provoke further alarums.

Although Arnold Schönberg has called 'F#' the 11 identity in the 'key of C' quite without reservation (Schoenberg, problems of Harmony, in *Modern Music* 11:170). The fact is that the 11 identity is vertically a 'quarter tone - 48.7 cents - below 'F#' in the 'key of C'. It seems obvious, even when the effort is not as conscious as Schönberg's, that in this modern day we *are trying to express harmonies of 7, 9 and 11 in a system - instruments and notation - designed for those 3 and 5 only.*

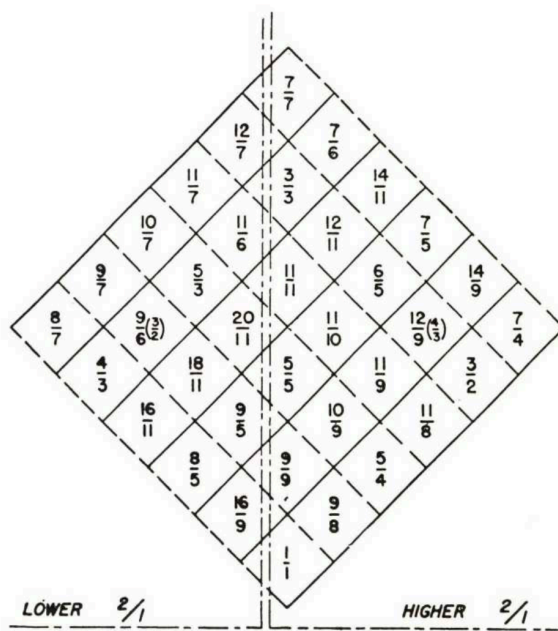


DIAGRAM 9.—THE EXPANDED TONALITY DIAMOND