Introduction

When I was a young composer living in New York City in the late '60s, the debate between tonal and atonal music was in full swing. Composers like Charles Wuorinen considered tonal music to be stuck in the nineteenth century, and tonal composers like Ned Rorem looked on atonality as a virtual violation of all the laws of nature. Composition departments were almost always devoted to one camp or the other, as were listeners, performers and music festivals. History never resolved this conflict, but simply moved beyond it, or around it, and today I can hardly think of a single serious composer who writes truly tonal or truly atonal music. Of course, church hymns and rock, like all the popular songs you are likely to hear in the bar of an expensive hotel, continue to be in major and minor keys, but even in popular music, and particularly in the more recent forms of popular music, the traditional tonic-dominant relationships tend to disappear, and in some cases the scales have less than seven notes, and in some cases everything moves around a single chord, and sometimes one can say the music is really more modal than tonal. At the same time, the serial system for organizing atonal music has gone completely out of practice.

Meanwhile *Other* kinds of harmony have continued developing, though they are not widely discussed. Even in the world of "serious" music, where people write lots of theory books, hardly any contemporary musicologists talk about harmony that departs from the usual categories of tonal and atonal, though there are many forms of this. Some pieces drone away on clusters and microtones, and while they may have one pitch that sticks out as a kind of tonality, they never change chords or otherwise behave like tonal music—or atonal music either. Other compositions employ only a few notes and never change chords enough to be really using harmony. Some composers are mostly concerned with noises and special instrumental effects, and actual pitches are so rare that it is not possible to talk about any kind of harmony. Recent operas often continue to be melodic and dramatic and expressionistic, but they are rarely in a clear tonality, rarely have anything to do with tonics and dominants, nor do they use 12-tone rows or any strict atonal system. Today, however, with the advantage of historical retrospect, one can look back and realize that even Bartok rarely wrote music that was clearly tonal or clearly atonal. Perhaps there is nothing really new about this *Other* music. Perhaps the great dispute over tonal and atonal was a false problem to begin with.

So perhaps it is time for someone to write a new and more up to date book about *Other* harmonies, and this is a very large category. Now, at the age of 74, I felt I was in a particularly good position to do this, as I had worked quite a few years as a music critic, had lectured and written about music theory regularly during the last 10 years, and most important, had focused on new harmonic languages in many of my own compositions. But this was not going to be an easy task, as I wanted to cover the subject generally and not just talk about my own music. I needed to do some serious research, and

after quite a few long afternoons in the music department of the French national library, I made some progress. I remembered that Leonhard Euler had some interesting and original techniques for constructing chords, so I found his complete works and took a closer look at that. I looked at quite a few scores of Josef Matthias Hauer, who had developed another very personal approach to the chromatic scale, beginning already in the 1920s. I remembered Nicolas Slonimsky's amazing *Thesaurus of Scales and Melodic Patterns,* which I had seen many years earlier and wanted to look at again. It was difficult to find this book, but I finally located the one copy that can be found in a Paris library. Also in the library I ran across a book I had never heard of by Nikolas Obouhow, who already in the 1940s was talking about his "total" harmony, which he considered completely different from both tonality and atonality. Another book that was almost impossible to find in Paris, but which is probably more available in the US, is *The Schillinger System of Musical Composition* (1946). I had seen this book many years earlier, but I went back to it now with renewed curiosity and more respect for what Joseph Schillinger had done. I read Olivier Messiaen's *Technique de mon langage musical* more carefully than before, and consulted his posthumous writings, which were published only a few years ago.

I was learning new things about harmony with each library visit, but I was also finding lots of gaps in my knowledge. I realized that to really write a book about what had happened to harmony, I would have to study lots of Scriabin scores, try once again to understand the difficult music theory of David Lewin, look more carefully at the many harmony books I was finding in the library, and actually become a musicologist. It was a little late in life to do that, so I settled for a more modest project. Without pretending to have researched the

subject thoroughly, it would be enough just to explain how the languages of tonal and atonal harmony are no longer the standard ones, how many kinds of Other harmony have been evolving, and how my own harmonic practices fit into this context.

My choice of Euler, Obouhow, Hauer, Schillinger, Slonimsky and Messiaen as important precursors is of course subjective. Other writers would no doubt have chosen other theorists, but these are the sources that have been most important for me, and between them they make the observations that seem essential for understanding harmony that goes beyond the usual categories of tonal and atonal. And one finds many observations here that have paved the way for my own harmonic practices, and for most of the Other harmony that has developed in recent years.

Many texts by other writers are dealing with tonal harmony, and I have little to say about that, though I treat it briefly in the first short section of this book. Far fewer texts are concerned with atonal harmony, but Allen Forte's *Structure of Atonal Music* finally gave an intelligent overview of all the chords one can construct with the complete chromatic, so the chapter on atonal harmony is a bit longer. But the many kinds of Other harmony I have been finding are hardly ever treated, so about 85 percent of the book is devoted to these.

In every sub-section of the main part of this book, the techniques I discuss are ones I have used at one time or another in my own compositions, some of which are rarely used by anyone else, but I will not discuss any of my particular compositions here. Talking about oneself is necessarily subjective, so if I want to write music theory and explain particular principles, it is best to try to keep everything on an objective

pedagogical level. Thus, the examples here are all composed especially for this book, and some of them are admittedly not very good music. They are written simply to present the ideas as clearly as possible. I explained the reason for this already in the introduction to my other theoretical book, *Self-Similar Melodies* [Johnson 1996, p. 9–10]. As I said there,

> *"Actual compositions are full of texts and contexts, instrumentation and interpretation questions, humorous notes and satirical notes, ethical and political messages, and all sorts of things that are difficult to explain and that have little to do with the behavior of self-similar melodies."*

And such things have nothing to do with the study of harmony *per se* either.

Despite the pedagogical goals, *Other Harmony* is not a text book, and we didn't want to include exercises, which are equivalent to homework, but for those who wish to internalize the ideas, we have added a page of "continuation" at the end of each chapter. The suggestions marked with one star simply review essential points, those with two stars encourage the reader to go a bit further, and those with three stars lead to more original interpretations.

I should add a note about what this book is ***not*** about. Many people feel that avoiding microtonality and limiting music to the chromatic scale is behind the times, and that we should also deal with electronic sounds, extended instrument techniques and all the other new sounds that have become an important part of contemporary music, but all these things are not really harmony. Harmony for me is about notes of the chromatic scale, and this is already a vast field.

This text presupposes that you already know about major seconds and dominant sevenths, and I will not talk about why composers avoid parallel fifths, or how to construct a 12-tone row, and I will assume that you can play and listen to the musical examples in one way or another. Block designs and homometric pairs and some of the other ideas will be new to almost everyone, but I will try to explain these carefully as I go.

While it is true that much of what I write here will be new to most readers, it will all be pretty familiar to the mathematicians and music theorists who attended the monthly music and mathematics MaMuX seminars at IRCAM in Paris between 2001 and 2010, as I did, and I must particularly thank Emmanuel Amiot, Moreno Andreatta, Franck Jedrzejewski and Guerino Mazzola, who taught me a lot in their stimulating lectures in these MaMuX meetings.

It was also important that my old friend Maya Bild arrived one day with a gift, *Kaleidophone*, a very rare out-of-print book by Joseph Schillinger. I have not been able to find this 1940 edition in any of the libraries where I have looked, and it is an important source for *Other Harmony*, as you shall see.

The Irish composer Siobhán Cleary read carefully through the first draft and her contributions helped clarify many points. I must also mention Gilbert Delor, who knows my music very well, and made many useful suggestions. And most of all I must thank my old friend in Tenerife, Javier Ruiz, who not only wrote the Math Addendum, but did extensive editing, proofreading and designed the book.

Tom Johnson, September 2014