Correspondence:

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First let me say what an honor it is to have my book, *How Equal Temperament Ruined Harmony (and Why You Should Care)*, reviewed by so distinguished a scholar on tuning as Rudolf Rasch. That said, I feel obliged to point out a number of criticisms that strike me as somewhat unfair or, at least, that require comment.

His first point, and it seems to me, his basic complaint, is that I do not support the title with the content of the book. It is true that I deliberately chose a provocative title since, in my experience, books about tuning do not appeal to a very large segment of the population, even within the music community, and I wanted the book to be read by a wide musical audience. I do think I explain in detail how the system of twelve equal semitones to the octave has compromised the quality of the harmony in tonal music, a flaw that musicians generally were failing to notice. To that extent, I think the title of my book was fully justified.

However, it is clear that Rasch disagrees with my premise that ET is universally used today. It may be that there is an enlightened tuning atmosphere at Utrecht University, but anyone who has worked in the environment of American conservatories in the last fifty years or so knows that ET is the standard, enforced by pianos tuned in that way. There are sometimes whisperings among string players that the best professionals make adjustments to it, but often, any variants from the standard are towards the high leading notes and wide major thirds of "expressive intonation" as famously endorsed by Pablo Casals. There are some string quartet players and others who recognize that pure major thirds are narrower than ET major thirds (or flatter, as they frequently say), but this is not something that is understood by most musicians, and to suggest that I am setting up a straw man in speaking out against ET is, I believe, to underestimate the strength of its influence in classical music—in this country at least.

Rasch admonishes me that rather than trying to dissuade others from the use of ET, I should simply refrain from using it myself and let other people do as they please. I think any thoughtful reader of my book will conclude that I am simply trying to get musicians to think about tuning as an element that is not always fixed in ET, and that for historical or musical reasons, other tunings might be more suitable. When there is a monolithic default that may not always be appropriate, the only option is to try to chip away at the default, and that is what I have attempted to do.

While acknowledging that I bring to bear much evidence for the use of unequal tuning systems by composers and performers up to the twentieth century, Rasch disagrees that this is significant, concluding: "The music should simply sound in tune, whatever tuning system has been applied. That is all. If one can hear the tuning, something is wrong." In my view, this is a radical statement. There are all kinds of historical tuning systems that can be applied to appropriate repertoires that may sound "out of tune" to an audience unfamiliar with non-ET systems, but that doesn't mean that they should be avoided by performers, or that they do an injustice to the music. What I was trying to do was to expand the concept of what is "in tune," beyond the default of ET, which is how most modern musicians hear it. If Bach, Mozart, and Beethoven, among others, had a concept of tuning that was different from that of modern musicians, why is it harmful to point this out, help them understand the differences, and encourage them to experiment?

Saying that "Teaching basic musical skills on the basis of non-ET tuning would be a very complicated matter," Rasch implies that it would be unwise to do so, and points out that ET—as he grants that I acknowledge—is a very convenient system. Still, the fact that basic musical skills were taught successfully for centuries without ET affirms that ET is not a pre-requisite to basic musicianship. I think it is safe to conclude that Bach, Mozart, and Beethoven were not taught the fundamentals of music in ET, so why is it bad for today's young performers? Does it mean that they will be unable to play twelve-tone music? I jest, of course, since young performers—and indeed most performers today—are not playing twelve-tone music. They are playing tonal music that might benefit, in my opinion, from the use of non-ET tuning. Yet they are not being given the opportunity to find that out.

When I taught a class on tuning immediately after my book was published, I seriously hoped by the end of the semester to convince the class—about twenty-five mostly conservatory students with no previous non-ET experience—of the value of unequal tunings in tonal music. After about two weeks, the entire class was already won over. Singers and non-keyboard players found it immensely valuable for their own performing, and were completely persuaded by the musical result, while the pianists were saying, "OK, you convinced us, so now what do we do?" Many students remarked that "all musicians should take this class." Since a class on tuning awareness for the bulk of musicians is impossible, the book will have to suffice.

Rasch acknowledges that my book has "some scholarly characteristics" and "absolutely satisfactory" documentation but opines that it "certainly cannot be considered a treatise." By this, I suppose he means that my book is not a systematic treatment of the subject of tuning. That is true. It was never intended to be a comprehensive study of tuning systems and their history. There are few books that would so qualify, and none of them are being read by the number of people I wanted to reach with this book. Anecdotes, cartoons, and side-bars make it unusual for a book with "scholarly pretensions," but I believe it is perfectly suited for the task I had in mind in a topic with a long history of misunderstanding, disinterest, and even fear.

Oddly, Rasch draws to a close with two specific complaints. The first is that I perpetuate "Murray Barbour's false conception of the mean tone as a major second that is half the size of a major third." Indeed, Rasch cites the eighteenth-century theorist Robert Smith as the source of the "correct"

definition of meantone as the average of the 9:8 and 10:9 major and minor tones of Just Intonation. To Rasch, therefore, there is only one meantone—quarter-comma meantone—since that is the only one that possesses a pure major third and whose whole tone averages the major and minor tone of Just Intonation. No matter how "correct" that may be in Rasch's eyes, it is a more restrictive view of meantone than is in common use today. To quote Mark Lindley's "Temperaments" article in *New Grove*: "But mean-tone temperament with major 3rds larger than pure also flourished."

Besides, Rasch may have missed this footnote running across the bottom of pp. 34-35 in my book: "Actually, in quarter-comma meantone, the whole tone is also the average (mean) between the 9:8 and 10:9 major and minor tones of Just intonation, a system where all intervals are pure. This makes sense because both Just and quarter-comma meantone use pure 5:4 major thirds, but Just achieves them by using one large and one small whole tone, whereas meantone has a single size of whole tone that divides the major third in two, and simultaneously averages the two different sizes of whole tone in the Just system. Since other forms of meantone, like fifth- and sixth-comma systems, do not have a pure 5:4 major third, their whole tones are not an average of the two Just whole tones, although they are always one half of their respective major thirds, as they are in ET." I don't think it is entirely fair to characterize that explanation as perpetuating an incorrect definition of meantone.

Rasch's other specific complaint is that I "adhere to Bradley Lehman's totally speculative 'Bach tuning.'" It is true that I find Lehman's theory of the tuning system intended for Bach's *Well-Tempered Clavier* to be convincing in terms of his interpretation of the evidence and the musical result. Besides demonstrating that Bach did not mean ET when he said "Well-Tempered," I cited this tuning in the context of pointing out the narrowing of the fifths of the open strings of the violin family by one-sixth of a comma—a characteristic that, in any case, Bach-Lehman shares with most other keyboard tuning systems recently put forward as candidates for what Bach had in mind. As to the specifics of the tuning and the evidence for it, Bradley Lehman is more than capable of responding to specific criticisms and I suggest that if Prof. Rasch has complaints about them, that he address them to Lehman directly, or in a detailed response to his writings. Readers interested in the subject might visit Lehman's website where he gives the full text of critical writings and his own responses.

Rasch's final comment on the book is a resounding mixed message: "It contains valuable insights, but perhaps musicians should simply figure out what tuning to use themselves rather than be told to adhere to a particular system, or to avoid another one." If I had confidence that musicians were able to do that on the basis of the current general state of knowledge and understanding of tuning, I would not have written the book. And to suggest that I am being too rigid in my promotion of "harmonic intonation," as I call it, seems somewhat ungenerous when I take great pains to avoid trying to create another monolith: "And remember, I'm not saying that harmonic intonation should replace ET entirely and substitute its own tyranny; only that ET is not necessarily the best temperament for every single musical situation encountered by today's musicians" (p. 158). That is the fundamental message I hope readers take from my book, and one I think Rasch has sufficiently failed to credit.

I greatly respect Rudolf Rasch's work in tuning over several decades. I fundamentally disagree with him, however, that most musicians today already understand the subject and are actively making

informed tuning choices for themselves. That would be a state of affairs that we could both agree is a good thing. However, in North America at least (and also as messages from readers in the United Kingdom, Western Europe, and Australia attest), the musical world has a long way to go to achieve that sort of enlightenment. I believe that *How Equal Temperament Ruined Harmony* is serving as an aid to that end, and sincerely invite PPR readers to decide for themselves whether it succeeds in increasing their own appreciation of this complex, yet vitally important, subject.