Tessellated Tonics: Zuckerkandl's Toy for Music Fundamentals

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This file includes the abstract, keyword list, bibliography, and related material for the video essay, "Tessellated Tonics: Zuckerkandl's Toy for Music Fundamentals" by Daphne Tan, Alexis Millares Thomson, Tegan Ridge, and Emma Soldaat. This video-essay may be found at https://vimeo.com/societymusictheory/smtv113tan

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Abstract for

Tessellated Tonics: Zuckerkandl's Toy for Music Fundamentals by Daphne Tan, Alexis Millares Thomson, Tegan Ridge, and Emma Soldaat, SMT-V 11.3 (2025)

In the early- to mid-twentieth century, many music educators were concerned with creating engaging and effective approaches to teaching music fundamentals. This video-article brings to life a pedagogical device from 1946 that was invented by the music theorist Victor Zuckerkandl but never produced. We demonstrate how this "small toy" can be used to learn major and minor keys, as Zuckerkandl intended, as well as intervals, modulations, and more. We also connect this device to manipulatives in mathematics education.

Short Keyword List

Music fundamentals, music theory pedagogy, tonality, Victor Zuckerkandl, key signatures, manipulatives

Extensive Keyword List

Music fundamentals, music theory pedagogy, tonality, Victor Zuckerkandl, key signatures, manipulatives, musical game, musical toy, musical mnemonics, learning aid, teaching device, tessellation, musical tiles, diatonic scale, scale degrees, tonic, accidentals, sharps and flats, major key, minor key, relative minor, parallel minor, letter name, generic pitch, pitch class, specific intervals, circle of fifths, modulation, music education, high school music, liberal arts, early twentieth century, mid-twentieth century, music archives, St. John's College Annapolis, Wellesley College, The New School, Sound and Symbol, Man the Musician, The Sense of Music, The Educational Power of Music, music notation, staff notation, piano keyboard, Peter Dykema, Hannah Cundiff, New School Music Handbook, Emma Adele Betting, Verna Leonard, Mabelle Allen, Dorothy Miller, musical checkerboard, Sigmund Spaeth, The Tune Detective, Music for Fun, Dienes blocks, Jean Piaget, Jerome S. Bruner, concrete thought, symbolic thought, abstract thought, mathematics education, elementary mathematics, embodied cognition, concrete manipulatives, tangible manipulatives, virtual manipulatives, self-correcting, finger patterns, J. S. Bach, Bach Sinfonia 11, BWV 797, Joseph Haydn, Hob. XVI:27

About the Contributors

Daphne Tan is Associate Dean, Academic & Student Affairs, and Associate Professor, Music Theory at the University of Toronto. Her research explores questions about music and the mind, with methodologies and perspectives from the history of music theory and cognitive science. Her work has been published in *Music Theory Spectrum, Journal of Music Theory, Music Theory Online, Music Perception, Psychology of Music, Musicae Scientiae, Theoria, Journal of Music Theory Pedagogy,* and *Empirical Musicology Review,* and in several edited collections. She is the editor and co-translator (with Christoph Neidhöfer) of *Music Psychology* by Ernst Kurth (Routledge 2022, orig. pub. 1931). With the co-authors of the present video-article, she created the <u>Victor Zuckerkandl Index</u>, an online finding aid of unpublished archival materials related to Victor Zuckerkandl.

Alexis Millares Thomson is a PhD candidate in music theory at the University of Toronto whose research interests include the study of microtonal harmony and tuning systems and the analysis of music post-1945. His dissertation develops a set theory for just intonation and introduces a theory of harmonic complexity to analyze harmonic progressions in contemporary Western microtonal music. Part of the dissertation also explores equally tempered approximations to just intonation, particularly through the music of Georg Friedrich Haas. Alexis has presented his work at the annual meetings of the Society for Music Theory and Music Theory Midwest. He holds a BFA with great distinction from Concordia University, specializing in Music Composition, and an MA in Music Theory from the University of Toronto, where he was awarded an Ontario Graduate Scholarship. His doctoral work is supported by a Doctoral Fellowship from the Social Sciences and Humanities Research Council of Canada (SSHRC).

Tegan Ridge is a PhD student in musicology at the University of Toronto, where she obtained an Honours BA in German Studies and Music and an MA in musicology, supported by a SSHRC CGS-M. Tegan's doctoral project explores musico-sonic "dust": surface noise that signifies the passage of time. She is particularly interested in German-language repertoires, representations of horror and the g/Gothic, and new materialisms. **Emma Soldaat** is a PhD candidate in music theory at the University of Toronto, having completed her MA in music theory at U of T and her BMus at Mount Allison University. She teaches at Dalhousie University (Halifax, NS) as a lecturer in music theory. Her dissertation research, supported by a SSHRC Doctoral Fellowship, examines form in Mahler's symphonies by combining form-functional theory with theories of memory drawn from Bergson and Proust. She has presented this work at the Society for Music Theory, Society for Music Analysis, Royal Musician Association, and MUSCAN annual meetings. Her other ongoing projects include corpus studies on nineteenth-century form and research on Victor Zuckerkandl's archival manuscripts. She lives in Halifax with her husband Benjamin, their black cat Ziggy, and many unfinished crochet projects.

Contributors' Note

AMT, **TR**, and **ES** contributed equally to writing and filming this video-article and are listed alphabetically by last name. **DT** conceived of the video-article, supervised the writing and filming stages, and led the post-production process.

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The following two pages are a printable template for Zuckerkandl's music fundamentals toy. For two-sided/duplex printing, choose a long-edge flip.



