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---

[Contents](#)[References](#)[MTO Home](#)[SMT Home](#)[MTO Talk](#)

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Report from the Third Triennial ESCOM Conference in Uppsala, Sweden, 7-12 June, 1997

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ABSTRACT: The Department of Psychology at the University of Uppsala, Sweden, hosted the Third Triennial conference of the European Society for the Cognitive Sciences of Music (ESCOM), 7-12 June, 1997. Several papers of particular interest to the music theory community were presented, including those by Eytan Agmon, John Clough and Nora Engebretsen, Jay Rahn, Bengt Edlund, Fred Lerdahl, and Jean-Jacques Nattiez.

[1] The Department of the Psychology at University of Uppsala, Sweden, hosted the Third Triennial conference for the European Society for the Cognitive Sciences of Music (ESCOM), 7-12 June, 1997. Roughly 120 papers were presented during the conference's nineteen sessions: Tristan Cor Anglais Tune; Analysis and Modeling of Cognitive Dynamics Underlying Musical Behavior; Music Cognition: Pitch, Scales, Tonality; Composition, Improvisation; Music Performance: Representation, Practice, and Reading; Musical Psychoacoustics; Ethnomusicology; Music Cognition: Melody, Rhythm; Music Performance: Psychological and Social Aspects; Music Analysis: Composers, Works, Genres; Musical Development; Music Performance. Measurements; Music Analysis: Modeling; Music and Bodily Movement, Dance; Music Cognition: General; Music Experience; Music and Neuropsychology, Music Performance: Motor Processes; and Music Performance: Modeling. There were also three keynote addresses: "Musical Tension: Cognitive, Motional, and Emotional Aspects" by Carol L. Krumhansl (Cornell University); "Can One Seriously Speak of Narrativity in Music?" by Michel Imberty (University of Paris X--Nanterre); and "Standing Together Under One Umbrella: A Multidisciplinary and Interdisciplinary View of Music Psychology" by Donald A. Hodges (University of Texas at San Antonio).

[2] Several music-theory oriented papers were given, including "'Octave Equivalence' versus 'Octave Relatedness': Circle versus Helix; Chord versus Melody" by Eytan Agmon (Bar-Ilan University); "Scales, Sets, and Interval Cycles: A Taxonomy" by John Clough and Nora Engebretsen (SUNY at Buffalo); "Recent Diatonic Theory and Curwen's Tonic Sol-Fa Method: Formal Models for a Kinesic-Harmonic System" by Jay Rahn (York University); "Tonal Closure--Fact and/or Fiction" by Bengt Edlund (Lund University); "Prolongational Structure and Schematic Form in Tristan's 'Alte Weise'" by Fred Lerdahl; "Wagner, Tristan's 'Alte Weise': Two perceptual approaches" by Irene Deliege (University of

Liege); "Quelques jalons pour une réflexion d'hermeneutique psychanalytique a propos du solo de cor anglais du IIIe Acte de Tristan" by Michel Imberty (University of Paris X--Nanterre); and "The Tristan's Cor Anglais Solo: A Semiological Analysis" by Jean-Jacques Nattiez. Unfortunately, the session on Tristan (the aim of which was to compare the different analytic approaches in the concluding discussion) was given at the same time as the Pitch, Scales, Tonality session. All proceedings were printed in their entirety prior to the conference by the Department of Psychology at Uppsala University (ISBN 91-506-1230-1).

[3] In "'Octave Equivalence' versus 'Octave Relatedness': Circle versus Helix; Chord versus Melody," Eytan Agmon warns against the indiscriminate application of octave equivalence, arguing that "contrary to popular belief, octave equivalence does not imply 'inversional equivalence' of intervals." In constructing his argument, Agmon invokes a distinction between the concepts of Octave Equivalence and Octave Relatedness: The former could be conceived of graphically as a circular arrangement of the pitch classes in a single plane and the latter as a helical model of pitch. Agmon asserts that, in practice, the distinction between these two concepts is based upon perceptual differences within melodic and chordal contexts--octave relatedness applies in melodic contexts, while octave equivalence is assumed in chordal contexts. This conclusion, Agmon notes, is supported by existing literature in the field of music perception--for example, Deutsch and Boullenger conclude that "[...] octave equivalence effects should not operate directly in the processing of melodic intervals,"<sup>[1]</sup>--and in turn supports a conceptual distinction between Roman-numeral and figured-bass approaches to chordal analysis.

[4] In "Scales, Sets, and Interval Cycles: A Taxonomy" John Clough and Nora Engebretsen begin by noting that while recent discoveries in scales theory may seem diverse, they are connected through their common emphasis on the role of interval cycles in the generation of scales. In particular, Clough and Engebretsen focus on eight properties of scales--*generated* (Wooldrige notation), *well-formed* (Carey and Clampitt), *Myhill-property* (Clough and Myerson), *maximally even* (Clough and Douthett), *diatonic* (Agmon; Clough and Douthett), *deep* (Gamer), *Balzano*, and one previously undefined property, *distributionally even*, under which a generic interval comes in either one of two sizes. They identify a network of implicative relationships among these features, and then present a taxonomy, based on twelve different combinations of these features, governing all pitch-class sets corresponding to interval cycles or cycle combinations. Algorithmic approaches to the generation of all pc sets with specific combination of features were also discussed.

[5] In addition to describing interactions among various scale properties and thus unifying recent contributions to scale theory, Clough and Engebretsen also hinted at relationships between their work and that of others--including Eytan Agmon's linear transformation property and Richard Cohn's maximally smooth cycles--and suggested possible areas for further study related to their newly defined DE property. This presentation was a revised version of the paper with the same title presented at the AMS/SMT Conference in New York in 1995.

[6] In "Recent Diatonic Theory and Curwen's Tonic Sol-Fa Method: Formal Models for a Kinesic-Harmonic System," Jay Rahn explores different aspects of English educator and priest John Curwen's (1816-1880) ear-training pedagogy. Curwen was the inventor of Tonic Sol-Fa Method including the hand-sign system that is still in use today within the Kodaly tradition, for instance. Rahn discusses the logic underlying Curwen's system, describing, for example, how the distribution of vowel sounds among the seven syllables and the visual and motor-kinesic aspects of the hand movements correspond to voice leading and tendency-tone properties of the diatonic scale. Rahn suggests that, in this respect, Curwen's hand signs "illuminate one of the most difficult distinctions in music theory, between scale and tonality," in that they model distinctions between and the interaction of consonances and dissonances. Rahn also notes an isomorphism between Curwen's hand signs and Benjamin Boretz's formulation of voice-leading structures and triadic tonality, and sets out to extend Boretz's work.<sup>[2]</sup> More specifically, Rahn discusses Curwen's privileging of the tonic, dominant, and subdominant triads on the basis of the following relationship: the tonic triad plus its transpositions upward and downward by five semitones/three scale degrees yields the complete scale. Rahn formalizes this property, focusing in particular on the cardinality of the "tonic" chord versus that of the scale, on the distribution of intervals of two and three scale degrees within the "tonic" chord, and of course on the degree of transposition required to generate

the entire scale. Patterns of resolution, then, are arranged symmetrically about a tonic half octave. This formalization leads to the fascinating insight that "Curwen's structures implode and explode fractally"--a notion Rahn illustrates with the example of a nineteen-note scale, generated from a seven-note tonic chord which itself displays a Curwen resolution pattern.

[7] Rahn concludes with some thoughts as to how one might test for the functioning of Curwen patterns in an experimental setting. In his final paragraph, however, he takes an ideological turn, which is as unexpected as it is stimulating: "Whereas delicate non-pitch (i.e., timbral, micro-rhythmic/loudness) factors are all one can cite in defense of Curwen's apparently Euro-centric privileging of major (as well as root position, dominant skewing, and raised leading-tones), one must acknowledge that Curwen's formulation itself has been for more than a century a worldwide factor in shaping production, perception, cognition, and conceptualization at all levels of formal training. Arguably, the closed, 'totalizing,' hierarchical structure of Curwen tonality has been a powerful agent of European aesthetic hegemony, enabling quick 'overlearning' of authoritative, tonal structures, while erecting barriers to subsequent influence in 'other' possibilities."

[8] The most provocative music-theoretic presentation was Bengt Edlund's "Tonal Closure--Fact and/or Fiction." Edlund presented the results of an experimental study in which five groups of university-level music students listened to versions of Schubert's Waltz in B minor (no. 10 from op. 18/D. 145), altered with the intent of eliminating tonal closure. The entire composition contains only two eight-bar periods, each of which is repeated. The first section begins in B minor and ends on D major, and the second section ends in B minor. Edlund altered the piece in two ways so that it ends in D major. In the first version, D major is prolonged from the double bar through the end of the piece; in the second version, the first section ends in B minor, and D major is not established until toward the end of the piece. Given the direction "something is odd with the harmonic/tonal development of the music--find out what it is!," more than half of the eighty-eight subjects were unable to identify the problem--even after three to five playings in some cases. Listeners, Edlund concludes, do not demand tonal closure even within the context of a short, harmonically straightforward piece.

[9] On the basis of these rather distressing results, Edlund urges us to examine the relationship between perception and theories of musical structure, and questions in particular the relevance of Schenkerian analysis's emphasis on tonal closure--and thus the relevance of Schenkerian analysis itself. "The principle of tonal closure, the *Ursatz*, is not only considered to be aesthetically vital--Schenkerian theory necessarily ascribes fundamental *methodological* importance to it. If the existence of the *Ursatz* (along with much of the middleground activities prolonging it) is perceptually unimportant when you listen, why should it govern the analyst's eye? Is the metaphysical foundation for it really strong enough to support the element of top-down processing in tonal analysis? And what else is left to recommend it when the collected analytic evidence from successfully reduced masterpieces can be questioned?"

[10] Whether or not Edlund's experiment demonstrated the listener's lack of interest in tonal closure is open to some debate. Following his presentation, for example, the question was raised as to whether his subjects might not have heard the first variant as a D-major piece beginning on the submediant--a point Edlund himself had conceded in his paper. However, since similar results have been reported by others--Edlund cites Nicholas Cook [{3}](#) and Vladimir Konecni and Mitchell Karno [{4}](#)--Edlund's criticisms might better be addressed on a different level. Even if a majority of listeners do not attend to tonal closure, would this suggest that the Schenkerian approach is somehow flawed? After all, tonal closure is undeniably a characteristic trait of the works to which Schenker intended his analytic approach to apply--whether or not the majority of listeners recognize its presence.

[11] Although Edlund himself acknowledges that "there is no intrinsic need for an analytic theory to model perception," he suggests that "[...] we should be wary not to adopt the notion that there is no intrinsic relationship between the value of a theory and the extent to which it deals with the musical phenomena we hear, indeed with the musical surface we see." In his haste to dismiss Schenkerian analysis on the basis of his experimental findings, Edlund fails to acknowledge that Schenkerian analyses do capture numerous perceptually salient foreground details, including motivic

relationships and details of voice leading. Indeed, it is doubtful that musicians such as Murray Perahia would show interest in Schenkerian analysis if this approach did not yield perceptually relevant musical insights. Certainly different insights might be gained, as Edlund argues, "from other, less 'tonal' reductions, from descriptions that are suppressed by analytical orthodoxy," but his findings are by no means as "devastating" as he suggests and absolutely do not support the outright abandonment of one of the most powerful analytic approaches we have for tonal music.

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---

 [Return to beginning of article](#)

[Contents](#)

[References](#)

[MTO Home](#)

[SMT Home](#)

[MTO Talk](#)

---

## References

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[Return to text](#)

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[Return to text](#)

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[Return to text](#)

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[Return to text](#)

 [Return to beginning of article](#)

---

[Contents](#)

[References](#)

[MTO Home](#)

[SMT Home](#)

[MTO Talk](#)

---

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