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CONFERENCE REPORT: Symposium on Neo-Riemannian Theory, State University of New York at Buffalo, July 20-21

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[1] Held every fourth summer since 1993, this summer's Symposium on Neo-Riemannian Theory remained true to its tradition as a "working group." In particular, the Organizing Committee (David Clampitt, John Clough, Chair, Richard Cohn, and Jack Douthett) arranged for the papers to be distributed ahead of time among the presenters. As well, the scheduling of three successive non-parallel sessions followed by a fourth in which Richard Cohn responded to papers in the third session and David Clampitt moderated a discussion of the entire symposium by all participants ensured that colloquy was as intense and focused as possible throughout the meeting.

[2] The Symposium opened with Julian (Jay) Hooks' "Thirteen Ways of Looking at the Schritt/Wechsel Group," a survey of terms and mathematical notations that have been used to describe the Riemannian group of 24 triadic transformations (*R*) which involve, respectively, no change of "mode," i.e., between major and minor triads (*R*+), and change of mode (*R*-). Cast within John Clough's suggested larger framework of the group *Q*, which comprises not only Hooks' UTTs (Unified Triadic Transformations) but also inversions (T/I), Hooks' report also dealt with recent cognate studies of non-triadic structures. In particular, Hook pointed out that voice-leading properties are not intrinsic to the shared group structure of triad and seventh-chord transformations, and that the combination of transposition, T_n, and contextual inversion, *J*, which Lewin has applied to Stockhausen's *Klavierstücke III*, can be replaced by a single, simply transitive group, K12 (1,6), or even by the S/W group.

[3] Jack Douthett's "4-Systems in Webern's *Concerto*, Op. 24" provided the Symposium's most detailed analysis of a serial work. Re-casting the usual trichord/hexachord approach to this piece in terms of Hook's UTTs and simply transitive groups, Douthett defined "orbits" of a cyclic group of order 4, which result in GISs (Generalized Interval Systems), specifically 4-systems, analogous to Richard Cohn's hexatonic and octatonic systems, as well as "blocks" that give rise to other GISs, in this instance "supersystems" of 4-, 6-, and 8-systems, analogous to Cohn's hyper-hexatonic and hyper-octatonic systems.

[4] Scott Murphy's study of "Some Intersections between Neo-Riemannian Theory and Graph Theory" formulated neo-Riemannian networks as instances of graphs or what he terms GRSs (Generalized Relational Systems), which are a kind of GIS where int(a,b) = int(b,a) and the set IVLS has only two members, related and unrelated. (Other cases he cited include interval cycles, row partitions, and most equivalence relations.) In general, such graphs can be presented analytically or realized compositionally in several ways. (E.g., all three components of a graph G<S,R> are determined by any two components, i.e., in any of three ways: G,S; G,R; S,R). Accordingly, Murphy focused on comparing and evaluating such alternatives. Emblematic of the oppositions Murphy explored are maximally smooth cycles versus the over-determined triad on one hand, and on the other, Childs' [0258] network and a region of Murphy's typology where there are no GRSs.

[5] Eytan Agmon's account of "The Multiplicative Norm and its Implications for Set-Class Theory" problematized the often

conflated concepts of equivalence and relatedness among pitch and pitch-class sets and intervals. Introducing the notions of "transpo-inversional" relatedness and a "normed interval/distance system," Agmon advanced definitions, propositions, lemmas and theorems to prove that transposition preserves intervals, but inversion does not, and that T/I equivalence, though often valid analytically, is ad hoc in all GISs other than the normed interval/distance system. Agmon's concluding illustration showed that how the opening three melody tones of Schoenberg's Op. 11/1 are connected with other sets of tones in the first 10 measures not through T/I equivalence, but rather via both pitch and pitch-class set equivalence, transpositional equivalence, inversional relatedness (as distinguished from equivalence!), and pitch-set distance-equivalence.

[6] Jonathan Kochavi's treatment of "Parsimony and Contextuality of Diatonic Sequences" first developed a calculus for comparing parsimony in various progressions (between sets of equal cardinality), where degrees of parsimony are determined by the number of common tones and the minimum total number of units (mod n) between their registrally respective members (e.g., 0 3 6 and 0 6 9 would have 2 common tones and a "total voice-leading displacement" or "VL-shift" of 6 = 0+3+3, or comparing 0 3 6 and 0 9 6, 6 = 0+6+0: an undecided distinction in Kochavi's formulation, which allows registral "voice-crossing"). After advancing the theorems that any set forms with its transposition up x units not only the same number of common tones but also the same VL-shift as with its transposition down x units (e.g., 047 as compared with L27 and 059, and that within a mod-7 system, progressions involving the usual triads and seventh chords result in the same numbers of common tones and the same VL-shifts (e.g., 024 vs 025 and 624all mod 7). Kochavi went on to formulate a "sequence succession operator" to deal with progressions comprising interlaced sequences of sub-progressions, illustrating the correspondence between, e.g., C A D B E C and C F D G E C in mm. 214-21 and 254-58 of the Gloria in Beethoven's *Mass in C*.

[7] Ramon Satyendra began the second session with "A Tonal *and* Hexatonic Sonata Form: Shostakovich's *Piano Sonata No. 2* in B Minor, I," positing a "resolution" of the opening B-minor and E-flat major themes in the recapitulation, in so far as their simultaneous combination completes the hexatonic collection (014589). Understanding the Bm and EbM chords not only as salient foreground features that function as linear connectives between tonal structures but also as upper structures in their own right, Satyendra emphasized in his explicitly eclectic analysis the primacy of well-formed (tonal) middleground counterpoint in contrast to the "consistent," "unifying," "dissonant coloration" of the polar triads.

[8] Amy Shimbo's discussion of "Some Transformations between Triads and Seventh Chords" focused on three "split functions" between a major or minor triad (037) and a half-diminished or dominant seventh. In each, there are two common tones: 0368, T137, 0359. Surveying the recent literature on such progressions, Shimbo also drew attention to Ziehn's 1912 account of "symmetrical inversion" and a related passage in Tchaikovsky's *Pathétique* recently analyzed by Yellin and further illustrated her typology by the first 11 measures of the *Liebestod*. Acknowledging that if fully diminished and minor sevenths were included, her typology would specify the same split relation between a particular common chord and three seventh chords (e.g., above, not only T137, but also 0369 and 0358), Shimbo conjectured that "the solution might be as simple as defining different varieties of transformation depending on the chords being exchanged."

[9] Franck's *Piano Quintet in F minor*, I, mm. 26-37 and 90-102 served as the main illustration for Robert Cook's consideration of "Parsimony and Extravagance": any transformations comprising, respectively, two common tones, and three voices each moving a semitone. These provided the starting-point for Cook's reflections on the interplay between naming transformations in response to the immediate experience of listening and the construction and generalization of formal models.

[10] Stephen C. Brown's account of "The Interaction of Ic1 and Ic5 in Twentieth-Century Music" focused on one of the 15 possible dual interval spaces considered in his 1999 dissertation, namely, a space where there are dimensions for ic1 and ic5. Illustrating his talk with passages from Webern's Op. 5/4, Shostakovich's *Sonata for Viola and Piano*, "Clashing Sounds" from Bartók's *Mikrokosmos*, and Ruggles' *Evocations* no. 4, Brown paid special attention to the operation of "interval exchange," which flips pc's around an ic1/ic5 axis. Although his analyses emphasized linear progressions through one or both dimensions, Brown also noted gaps in such processes.

[11] John Clough's "Trichords and Transformations in Two Pieces from Gyorgy Kurtag's *Kafka-Fragments*" considered "Penetrant Judisch" and "Die Guten gehn im gleichen Schritt," as well as the *Quintetto per Fiati*, Op. 2/V, from the perspective of the neo-Riemannian transformations L, R, and P on 014 and the diatonic sets 037 and 025. Clough concluded by proving that for each of the 12 possible Wechsels, there are 55 distinct sequences of 3 Wechsels that correspond to it (if pairs are considered equivalent under reflection).

[12] The third session began with a joint presentation by Fred Lerdahl and Carol Krumhansl of "Modeling Tonal Tension and Attraction in Chromatic Contexts." They construed tonal tension and relaxation in terms of harmonic motion to and from the tonic, and to and from near or distant chords, whereas, for example, tonal attraction to the tonic is high in the leading tone, and tonal attraction to the leading tone low in the tonic. Lerdahl's forthcoming book *Tonal Pitch Space* models these relations according to a multi-dimensional scaling in integers. E.g., chord distance is measured by numbers of 3-degree transpositions (mod 7), and distances between diatonic collections by numbers of 5-semitone transpositions (mod 12). Such chords are located on toroidal surfaces comprising not only the usual neo-Riemannian functions but also triadic/octatonic and triadic/hexatonic configurations. Other tension values are weighted without such spatial modeling: e.g., if there is a non-harmonic tone, add 1 if it is a seventh; otherwise, add 3 if diatonic, and 4 if chromatic. Melodic, voice-leading, and harmonic attraction are quantified by means of sums, products and ratios, and chord grammar, expressed in generative trees, cross-cuts all these distinctions.

[13] Krumhansl's experimental report focused on the results of comparing components of Lerdahl's quantitative models in various combinations with listeners' tension responses. The latter involved moving a mouse horizontally on a computer screen. For diatonic and chromatic versions of the Grail theme from *Parsifal*, and mm. 1-6 and 7-12 of Messiaen's *Quartet for the End of Time*, V, correlations between models and listeners' responses were uniformly quite high: R^2 ranged from 0.66 to 0.99, depending on which components of the models were combined. The quantitative scaling results were presented not only statistically but also graphically, the latter by means of color gradations in a two-dimensional display. After the formal presentation, Krumhansl demonstrated how the quantitative models and the subjects' responses can be compared moment-to-moment in a pair of constantly shifting, real-time displays on a single PC monitor.

[14] Reporting "On Riemann's Theories of Dissonance as a Resource for Analysis," Edward (Ed) Gollin explored an aspect of Riemann's *Skizze* that has been largely neglected in favor of his Schritt-Wechsel system. In analyzing the rondo theme of the Forlane from Ravel's *Tombeau de Couperin*, Gollin favoredas arguably Riemann might havean interpretation of the recurrent 0148 sonority in terms of functional (e.g., subdominant and submediant) "transpositions" and chromatic alteration of chord tones (cf. 0159). In a similarly "traditional, tonal" vein, Gollin interpreted particular sonorities at the beginning of William Grant Still's "Cloud Cradles" in terms of W3 and W7 transformations (e.g., 03478L as 047<->L38 and 0347 as 037<->047).

[15] In "Functional Fishing with Tonnetz: Toward a Grammar of Transformations and Progressions," Charles Smith argued that nineteenth-century music is best understood in terms of chord progressions comprising tonic, dominant and dominant-preparation functions, within the framework of a two-dimensional triadic Tonnetz. Illustrating particular progressions by excerpts ranging from Beethoven to Rachmaninoff and Errol Garner, Smith claimed, for example, that the dominant function depends solely on the leading tone's inclusion in a chord (e.g., V, V7, bvi, vii, and iii (with the possibility that a iii triad might be considered to serve a tonic function); a half-diminished chord is a minor triad with the usual seventh as root and vice versa; and bIIb7 is a dominant, whereas bII is a dominant preparation.

[16] Daniel Harrison concluded the final session with "Two Short Essays on Neo-Riemannian Theory." In "The New Riemann: Same as the Old Riemann?" Harrison critiqued the notion of transformation in terms of such oppositions as being-becoming, subject-object, and dynamic-static. In "Some Hypotheses about Tonic and Antitonic Trichords," he advanced the view that 026 comprises three kinds of discharge function (e.g., FGB of G7 resolving to C, E, or Ab). These he described as "antitonic" rather than dominant because, in each, two tones serve a dominant function (G-G, B-C; G/Fx-G#, B-B; G-Ab, B-C) and one a subdominant function (F-E; F-E; F-Eb). Citing theorists from Rameau to Persichetti and Ulehla, Harrison explored progressions among antitonic trichords and their resolutions, favoring a view in which, e.g., whole-tone subsets are understood as dynamic rather than static.

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