

# Studies in Transformational Theory

M9520B  
Winter 2016

Dr. Catherine Nolan  
[cnolan@uwo.ca](mailto:cnolan@uwo.ca)

Tuesdays, 1:30 – 4:30 p.m.  
TC 340

## Overview

Transformational theory refers to a branch of music theory whose origins lie in the work of David Lewin, particularly his influential treatise, *Generalized Musical Intervals and Transformations* (1987). Transformational theory shifts our focus from musical objects and events to the processes that transform one object or event into another and the properties, relations, and musical spaces revealed by such processes. For the last quarter century or more, transformational theory has contributed significantly to a wide range of scholarship on music-theoretical topics ranging from nineteenth-century and twentieth-century pitch relations and harmonic practice, transformational structures in diatonic and other scale systems, and new ways of conceptualizing relations and processes in music theory and analytic practice.

This course will introduce students to the accessible formalisms involved in mathematical musical transformations, will explore the realm of non-mathematical and contextual transformations, and will explore a variety of representative scholarly literature that reflects both theoretical speculation and analytical application.

## Requirements

Assigned readings, class discussions and presentations including reports on supplementary readings, one substantial research project on an approved topic.

## Learning Outcomes

Students will develop a strong understanding of technical and conceptual issues in mathematical and contextual transformations in music theory and analysis. Students will also demonstrate skills in constructing and interpreting transformationally inspired analyses of musical works across a wide range of styles. This course will prepare students to engage in meaningful scholarly discourse about transformational theory.

## Evaluation

Oral reports	10%
Assignments	20%
Participation	10%
Report on final research project	10%
Final research project	50%

Class meetings will include demonstrations of theoretical material, discussions of assigned readings, and exercises relating to the week's topic. Most meetings will include reports by one or two students on supplementary readings that will be assigned early in the course. Further information on the oral reports (supplementary readings) and the final research project will be provided at the first class.

\* \* \* \* \*

## Statement on accommodation for medical illness

University policy regarding medical illness can be found here:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf).

A downloadable SMC (Student Medical Certificate) can be found here:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform\\_15JUN.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform_15JUN.pdf).

## Statement on academic offenses

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic offence, as found at

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_grad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf).

## Statement on health and wellness

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on-campus health-related services to help students achieve optimum health and engage in healthy living while pursuing a graduate degree. Students seeking help regarding mental health concerns are advised to speak to someone in whom they feel comfortable confiding, such as a faculty supervisor, a program advisor, or the Associate Dean (Graduate Studies). Campus mental health resources may be found at

[http://www.health.uwo.ca/mental\\_health/resources.html](http://www.health.uwo.ca/mental_health/resources.html).

**Studies in Transformational Theory**  
**M9520B**  
**Instructor: Catherine Nolan**

Winter 2016

**Syllabus**

This syllabus shows the topic and assigned readings for each class meeting. Supplementary readings, indicated by an asterisk, are not required readings for all students, but each supplementary reading will be assigned to an individual student for an oral presentation. (Guidelines for the oral presentations on supplementary readings will be provided.)

N.B. The readings listed below are subject to change. Any changes will be announced at least a week in advance.

<b>Date</b>	<b>Topic and Readings</b>	<b>Assignments</b>
Jan. 5	<p><b>Representations of Musical Space</b></p> <p>Hook, Julian. 2002. "Hearing With Our Eyes: The Geometry of Musical Space." In <i>Bridges: Mathematical Connections in Art, Music, and Science Conference Proceedings</i>, ed. Reza Sarhangi: 123-34.</p> <p>Westergaard, Peter. 1996. "Geometries of Sound in Time." <i>Music Theory Spectrum</i> 18.1: 1-21.</p> <p>Nolan, Catherine. "Music Theory and Mathematics." In <i>Cambridge History of Western Music Theory</i>, ed. Thomas Christensen, 272-304. Cambridge: Cambridge University Press. (optional)</p>	
Jan. 12	<p><b>Formalisms (1)</b></p> <p>Morris, Robert. 2001. <i>Class Notes for Advanced Atonal Music Theory</i>. Lebanon, NH: Frog Peak Music, 9-18. ["Groups"]</p> <p>Satyendra, Ramon. 2002. "An Informal Introduction to Some Formal Concepts from Lewin's Transformational Theory." <i>Journal of Music Theory</i> 48.1, 99-103. [excerpt]</p> <p>Lewin, David. 1987. <i>Generalized Musical Intervals and Transformations</i>. New Haven: Yale University Press, 16-30. [Chapter 2, "Generalized Interval Systems (1): Preliminary Examples and Definition"]</p> <p>Devlin, Keith. 1994. <i>Mathematics: The Science of Patterns</i>. New</p>	<p>Assignment 1 due</p> <p>(T/I group table)</p>

	<p>York: Scientific American Library, 1-7. [Prologue, “What is Mathematics?”]</p> <p>* Morris, Robert. 1998. “Voice-Leading Spaces.” <i>Music Theory Spectrum</i> 20.2: 175-208.</p>	
Jan. 19	<p><b>Formalisms (2)</b></p> <p>Satyendra, Ramon. 2002. An Informal Introduction to Some Formal Concepts from Lewin’s Transformational Theory.” <i>Journal of Music Theory</i> 48.1, 104-117. [excerpt]</p> <p>Rings, Steven. 2011. <i>Tonality and Transformation</i>. Oxford: Oxford University Press, 9-40. [Chapter 1, “Intervals, Transformations, and Tonal Analysis.”]</p> <p>Lewin, David. 1987. <i>Generalized Musical Intervals and Transformations</i>. New Haven: Yale University Press, 1-15. [Chapter 1, “Mathematical Preliminaries”]</p> <p>Devlin, Keith. 1994. <i>Mathematics: The Science of Patterns</i>. New York: Scientific American Library, 145-150. [Chapter 5, “Symmetry and Regularity,” excerpt]</p>	<p>Assignment 2 due</p> <p>(Symmetries of the square)</p>
Jan. 26	<p><b>Neo-Riemannian Theory</b></p> <p>Cohn, Richard. 1998. “Introduction to Neo-Riemannian Theory: A Survey and Historical Perspective.” <i>Journal of Music Theory</i> 42.2: 167-80.</p> <p>Harrison, Daniel. 2011. “Three Short Essays on Neo-Riemannian Theory.” In <i>The Oxford Handbook of Neo-Riemannian Music Theories</i>, ed. Edward Gollin and Alexander Rehding, 548-77. Oxford: Oxford University Press.</p> <p>Hyer, Brian. 2011. “What is a Function?” In <i>The Oxford Handbook of Neo-Riemannian Music Theories</i>, ed. Edward Gollin and Alexander Rehding, 92-139. Oxford: Oxford University Press.</p> <p>* Capuzzo, Guy. 2004. “Neo-Riemannian Theory and the Analysis of Pop-Rock Music.” <i>Music Theory Spectrum</i> 26.2: 177-99.</p> <p>* Lehman, Frank. 2013. “Transformational Analysis and the Representation of Genius in Film Music.” <i>Music Theory Spectrum</i> 35.1: 1-22.</p>	<p>Assignment 3 due</p> <p>(Neo-Riemannian of historical circles of 24 keys)</p>

<p>Feb. 2</p>	<p><b>Hexatonic Systems</b></p> <p>Cohn, Richard. 1996. "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late Nineteenth-Century Triadic Progressions." <i>Music Analysis</i> 15.1: 1-66.</p> <p>Cohn, Richard. 2012. <i>Audacious Euphony: Chromaticism and the Triad's Second Nature</i>. Oxford: Oxford University Press, 17-41. [Chapter 2, "Hexatonic Cycles"]</p> <p>Satyendra, Ramon. 2002. An Informal Introduction to Some Formal Concepts from Lewin's Transformational Theory." <i>Journal of Music Theory</i> 48.1, 118-123. [excerpt]</p> <p>* Engebretsen, Nora. 2008. "The Over-Determined Triad as a Source of Discord: Nascent Groups and the Emergent Chromatic Tonality in Nineteenth-Century German Harmonic Theory." In <i>Music Theory and Mathematics: Chords Collections, and Transformations</i>, ed. Jack Douthett, Martha M. Hyde, and Charles J. Smith, 107-36. Rochester: University of Rochester Press.</p> <p>* Kopp, David. 2002. <i>Chromatic Transformations in Nineteenth-Century Music</i>. Cambridge: Cambridge University Press. Chapter 6, "Riemann's Legacies and Transformation Theories."</p>	<p>Assignment 4 due</p> <p>(P/L group table)</p>
<p>Feb. 9</p>	<p><b>Klumpenhouwer Networks</b></p> <p>Lambert, Philip. 2002. "Isographies and Some Klumpenhouwer Networks They Involve." <i>Music Theory Spectrum</i> 24.2: 165-95.</p> <p>O'Donnell, Shaugn. 1998. "Klumpenhouwer Networks, Isography, and the Molecular Metaphor." <i>Intégral</i> 12: 53-80.</p> <p>Buchler, Michael. 2007. "Reconsidering Klumpenhouwer Networks." <i>Music Theory Online</i> 13.2.</p> <p>Klumpenhouwer, Henry. 2007. Reconsidering Klumpenhouwer Networks: A Response." <i>Music Theory Online</i> 13.3.</p> <p>Devlin, Keith. 1994. <i>Mathematics: The Science of Patterns</i>. New York: Scientific American Library, 173-82. [Chapter 6, "Position"]</p> <p>* O'Donnell, Shaugn. 2007. "Embracing Relational Abundance." <i>Music Theory Online</i> 13.3.</p> <p>* Stoecker, Philip. 2007. "Without a Safety (k)-Net." <i>Music</i></p>	

	<i>Theory Online</i> 13.3.	
Feb. 16	No meeting, Reading Week	
Feb. 22	<p><b>Contextual Transformations</b></p> <p>Lambert, Philip. 2000. "On Contextual Transformations." <i>Perspectives of New Music</i> 38.1: 45-76.</p> <p>Pearsall, Edward. 2004. "Transformational Streams: Unraveling Melodic Processes in Twentieth-Century Motivic Music." <i>Journal of Music Theory</i> 48.1: 69-98.</p> <p>Nobile, Drew. 2013. "Interval Permutations." <i>Music Theory Online</i> 19.3.</p> <p>Straus, Joseph. 2014. "Total Voice Leading." <i>Music Theory Online</i> 20.2.</p> <p>* Callender, Clifton. 1998. "Voice-Leading Parsimony in the Music of Alexander Scriabin." <i>Journal of Music Theory</i> 42.2: 219-33.</p> <p>* Gollin, Edward. 1998. "Some Unusual Transformations in Bartók's 'Minor Seconds, Major Sevenths'." <i>Intégral</i> 12: 25-51.</p>	
Mar. 1	<p><b>Extended Transformational Analyses</b></p> <p>Rings, Steven. 2011. <i>Tonality and Transformation</i>. Oxford: Oxford University Press, 185-202. [Chapter 6, Brahms, Intermezzo in A major, op. 118, no. 2]</p> <p>Roeder, John. 2013. "Transformational Aspects of Arvo Pärt's Tintinnabuli Music." <i>Journal of Music Theory</i> 55.1: 1-41.</p> <p>*Gillespie, Jeffrey L. 1992. "Motivic Transformations and Networks in Schoenberg's 'Nacht' from <i>Pierrot Lunaire</i>." <i>Intégral</i> 6: 34-65.</p>	Proposal for final project due
Mar. 8	<p><b>Animations and Perspective</b></p> <p>Attas, Robin. 2009. "Metaphors in Motion: Agents and Representation in Transformational Analysis." <i>Music Theory Online</i> 15.1.</p> <p>Lind, Stephanie and John Roeder. 2009. "Transformational Distance and Form in Berg's 'Schlafend trägt man mich'." <i>Music Theory Online</i> 15.1.</p>	

	<p>Roeder, John. 2009. "Constructing Transformational Signification: Gesture and Agency in Bartók's Scherzo, Op. 14, No. 2, measures 1-32." <i>Music Theory Online</i> 15.1.</p> <p>* Rogers, Nancy and Michael Buchler. 2003. "Square Dance Moves and Twelve-Tone Operators: Isomorphisms and New Transformational Models." <i>Music Theory Online</i> 9.4.</p>	
Mar. 15	<p><b>Retracing the Pathways (1)</b></p> <p>Cohn, Richard. 2004. "Uncanny Resemblances: Tonal Signification in the Freudian Age." <i>Journal of the American Musicological Society</i> 57.2: 285-324.</p> <p>Satyendra, Ramon. 2002. "An Informal Introduction to Some Formal Concepts from Lewin's Transformational Theory." <i>Journal of Music Theory</i> 48.1, 99-141. [complete]</p> <p>Hook, Julian. 2002. "Uniform Triadic Transformations." <i>Journal of Music Theory</i> 46.1-2: 57-126.</p> <p>* Clough, John. 2008. "Flip-Flop Circles and Their Groups." In <i>Music Theory and Mathematics: Chords Collections, and Transformations</i>, ed. Jack Douthett, Martha M. Hyde, and Charles J. Smith, 23-47. Rochester: University of Rochester Press.</p> <p>* Hoeckner, Berthold. 2006. "Paths Through <i>Dichterliebe</i>." <i>19<sup>th</sup>-Century Music</i> 30.1: 65-80.</p> <p>* Siciliano, Michael. 2005. "Toggling Cycles, Hexatonic Systems, and Some Analysis of Early Atonal Music." <i>Music Theory Spectrum</i> 27.2: 221-47.</p>	
Mar. 22	<p><b>Retracing the Pathways (2)</b></p> <p>Straus, Joseph N. 2011. "Contextual-Inversion Spaces." <i>Journal of Music Theory</i> 55.1: 43-88.</p> <p>Cook, Robert. 2005. "Parsimony and Extravagance." <i>Journal of Music Theory</i> 49.1: 109-40.</p> <p>Spitzer, Michael. 2003. "The Metaphor of Musical Space." <i>Musicae Scientiae</i> 7. 2: 101-20.</p> <p>* Gollin, Edward. 1998. "Some Aspects of Three-Dimensional <i>Tonnetze</i>." <i>Music Theory Spectrum</i> 42.2: 195-206.</p>	

	* Santa, Matthew. 1999. "Defining Modular Transformations." <i>Music Theory Spectrum</i> 21.2: 200-29.	
Mar. 29	Student presentations	
Apr. 5	Student presentations	
<b>Final Project Due: Friday, April 22</b>		