

# **The Musical Representation**

**Meaning, Ontology, and Emotion**

**Charles O. Nussbaum**

**A Bradford Book  
The MIT Press  
Cambridge, Massachusetts  
London, England**

© 2007 Massachusetts Institute of Technology

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please email [special\\_sales@mitpress.mit.edu](mailto:special_sales@mitpress.mit.edu) or write to Special Sales Department, The MIT Press, 55 Hayward Street, Cambridge, MA 02142.

This book was set in Stone Serif and Stone Sans on 3B2 by Asco Typesetters, Hong Kong and was printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Nussbaum, Charles O.

The musical representation : meaning, ontology, and emotion / Charles O. Nussbaum.

p. cm.

Includes bibliographical references (p. ) and index.

ISBN 978-0-262-14096-6 (hardcover : alk. paper)

1. Music—Philosophy and aesthetics. 2. Representation (Philosophy). 3. Emotions in music.

I. Title.

ML3800.N92 2007

781'.1—dc22

2007000510

10 9 8 7 6 5 4 3 2 1

## Index

- Acousmatic experience, 222, 311n49. *See also*  
Western tonal art music, and virtual  
acousmatic space
- Action off-line and on-line, 21–23, 35, 47, 66,  
69–70, 87, 99, 125–126, 140, 189–191,  
200–201, 217, 229–230, 236, 246, 249, 254,  
256–257, 273, 279, 324n25. *See also*  
Simulation
- Actualism, 174
- Addis, Laird, 345n61
- Agawu, V. K., 326n44
- An American in Paris* (Gershwin), 226
- Animism, 64, 66, 70, 229, 231, 234–235, 253,  
256, 261, 269, 289, 296, 298, 313n67,  
313n68, 324n25. *See also* Western tonal art  
music, and animism
- Arbib, Michael, 309n34, 310n44
- Archimedes, 179
- Armstrong, Karen, 267
- Aunger, Robert, 9, 110, 171–173, 306n8
- Autistic spectrum disorders (ASD), 69–70
- Bach, Johann Sebastian, 111, 168  
Chorale, “O Haupt voll Blut und Wunden,”  
315n77  
Second Orchestral Suite, 276  
*St. Matthew Passion*, 111
- Barsalou, Larry, 325n33
- Bartók, Béla, 119, 121  
*Concerto for Orchestra*, 119–121
- Beecham, Sir Thomas, 168
- Beethoven, Ludwig van, 121, 125, 150, 168,  
179–180, 276, 288, 295, 335n41, 349n26,  
352n55, 353n63  
*Fidelio*, 276  
Fifth Symphony in C Minor, 40, 118, 158,  
168, 170–171, 178, 202, 243, 247–249, 289,  
332n21, 344n54, 344n55  
Fourth Piano Concerto in G, 125, 138,  
327n55  
Fourth Symphony in B-flat, 237–242  
*Grosse Fuge*, Op. 133, 202, 327n48  
*Leonore Overture No. 3*, 276–277  
*Missa Solemnis*, 276  
Ninth Symphony in D Minor, 37, 62–64, 119,  
165, 168, 205–206, 274–276, 334n35,  
335n49  
Piano Sonata in A, Op. 101, 313n66  
Quartet in E Minor, Op. 59, No. 2, 56, 121,  
327n50  
Quartet in F, Op. 59, No. 1, 121, 327n50  
Seventh Symphony in A, 168, 176, 276,  
335n41  
Sixth Symphony in F, *Pastoral*, 215–216,  
307n23, 313n62, 314, 327n54, 327n56  
Third Symphony in E-flat, *Eroica*, 179–184,  
202, 228–229, 232, 235–236, 310n43,  
334n39  
*Variations on a Theme of Diabelli*, 121–122  
Violin Concerto in D, 113–115, 123
- Behavioral systems theory (BST), 83
- Benzon, William, 49, 316n85, 324n20, 352n56

- Berg, Alban, Violin Concerto, 122
- Berlioz, Hector, 289  
*Requiem*, 64, 67
- Bermudez, José Luis, 30, 46, 110, 115, 342n38
- Bernstein, Leonard, 102, 113, 123, 327n52  
*West Side Story*, 122
- Bilgrami, Akeel, 224
- Bizet, Georges  
*Carillon* (First *L'Arlesienne* Suite), 243–245  
Symphony in C, 49
- Blackmore, Susan, 9, 152
- Boltzmann machines, 255, 338n7
- Bouwsma, O. K., 248–249
- Boyer, Pascal, 152, 267, 286, 289
- Bradshaw, Denny, 336n55
- Brahms, Johannes, 322n7  
*Academic Festival Overture*, 121, 327n50  
Fourth Symphony in E Minor, 123–124, 316n91, 318–321  
Intermezzo, Op. 117, No. 2, 251  
Second Symphony in D, 78–81, 316n91, 317  
*Tragic Overture*, 40, 300  
*Variations on a Theme of Haydn*, 121
- Brandom, Robert, 10, 11, 17, 18, 45, 101, 197, 251, 304n16
- Budd, Malcolm, 190, 212, 215
- Burns, Robert, 171
- Butts, Robert, 280
- Callen, Donald, 327n56
- Cantor, Georg, 175, 180
- Cantrell, Scott, 167, 334n38
- Casals, Pablo, 168
- Categorization, 6, 40, 58–60, 84, 88, 101, 103–104, 106–107, 109–110, 112–114, 118–119, 139–140, 145–146, 164, 191, 197, 199, 227, 255, 326n36, 343n51
- Chadwick, George W., 288
- Charades, 66, 98, 151, 230–231, 235, 269, 342n48. *See also* Mimesis; Gesture
- Cherubini, Luigi, Symphony in D, 40
- Chomsky, Noam, 13–16, 41, 113, 123, 155, 279, 303n7, 303n8, 304n10, 325n31
- Chopin, Frederic, 182, 184, 186  
Second Piano Sonata in B-flat Minor, 235–236
- Churchland, Paul M., 6, 84, 101, 233, 325n32, 328n59
- Clark, Andy, 15, 45, 322n95, 325n34
- Clark, Austen, 198, 217, 219, 222, 325n29, 339n14, 341n33, 344n56
- Clarke, David S., 219, 306n14, 323n15, 326n38, 326n46
- Clarke, Eric, 35, 56, 305n1, 305n6, 307n16, 311n47, 315n76, 322n93
- Clynes, Manfred, 340n22
- Co-evolution. *See* Science and scientific explanation, and anthropology
- Cognitive trails, 222, 236–237, 243, 245, 253, 343n52, 344n55
- Coker, Wilson, 118–119, 123, 327n47
- Coltrane, John, 122
- Concepts, conceptual organization, and conceptual analysis, 22, 88, 110, 126, 131, 190–191, 194–197, 203–204, 217, 220–223, 225, 237, 243, 245–246, 252, 265–268, 310n45, 312n53, 324n23, 326n45, 327n56, 328n57, 329n66, 328n57, 329n66, 333n24, 341n34, 341n35, 343n52, 345n57, 345n58, 348n10, 349n24, 350n29, 351n37. *See also* Representational content, conceptual and nonconceptual
- Conceptual content. *See* Representational content
- Conkey, Margaret, 351n46, 351n47
- Connectionism, neural networks, and parallel distributed processing, 6, 15, 36, 43, 84–85, 131–138, 172–173, 197, 220, 223, 255, 225, 315n81, 322n93, 322n95, 328n59, 328n62, 338n7. *See also* Recursive auto-associative memory (RAAM) networks and Boltzmann machines
- Craik, Kenneth, 45–47, 81, 233
- Cross, Ian, 282, 286
- Cummins, Robert, 28–29
- Currie, Gregory, 200, 322n1, 336n53

- Cussins, Adrian, 15, 45, 217, 219–224, 236–237, 243, 263, 266, 341n35, 343n52, 345n57
- Cyrano de Bergerac* (Rostand) and *Roxanne* (motion picture), 122
- Dada, 159
- Damasio, Antonio, 191, 254, 338n11  
and the somatic marker hypothesis, 199
- Darwin, Charles and Darwinism, 46, 51, 96, 98, 152–153, 163, 284, 337n63, 352n54  
and “Darwin’s thesis,” 96–98, 212  
and sexual origins of music hypothesis, 97–98, 211–212, 323n17, 324n19
- Davies, Stephen, 74, 89–90, 119, 141, 146, 160, 167, 228–230, 315n84, 323n11, 327n47, 331n11, 333n22, 334n30, 334n31, 334n39, 340n29, 347n69, 348n7
- Davis, Miles, 122
- Dawkins, Richard, 9, 152–153, 155, 170
- DeBellis, Mark, 316n90, 324n23
- Debussy, Claude, 59, 243  
*Fêtes (Three Nocturnes)*, 73  
*La Mer*, 40  
*Nuages (Three Nocturnes)*, 276
- Dennett, Daniel C., 46, 84, 152, 169–171, 174, 180, 182, 197, 278, 304n11, 333n23, 336n57, 336n60, 337n61, 337n63, 338n6, 352n54
- Descartes, René, 190, 224, 254, 263, 347n70
- de Sousa, Ronald, 191, 254
- Dewey, John, 259
- Diamond, Cora, 353n1
- Dissanayake, Ellen, 286, 352n50
- Donald, Merlin, 96–99, 285–286, 309n32
- Dretske, Fred, 24–27, 44–45, 89, 306n7, 306n11, 310n38, 327n53, 338n6
- Durham, William D., 9, 152, 332n18, 332n19, 332n20, 333n27, 333n28
- Dvorák, Antonin, 121  
*Carnival Overture*, 276  
Cello Concerto in B Minor, 40  
Ninth Symphony in E Minor, *New World*, 165
- Edison, Thomas A., 166, 179–180, 336n58
- Egocentric space, 190, 201, 219–222, 224, 226, 236, 243, 246, 253, 341n33. *See also* Feature space; Representational content, nonconceptual; Western tonal art music, and virtual acousmatic space
- Ekman, Paul, 196, 204–205, 209
- Elgin, Catherine Z., 93, 122, 305n18, 309n36, 322n8, 323n12, 327n49
- Eliot, T. S., 231, 234
- Else, Gerald, 352n52
- Emotion, 21–22, 61, 68, 71, 81–82, 96–97, 99–100, 102–103, 141, 189–205, 209–211, 214–217, 228–232, 234, 246–247, 249–257, 259–265, 267–268, 270–273, 287–290, 292–293, 295–296, 302, 329n68, 332n20, 337n1, 337n2, 338n3, 338n7, 338n9, 338n10, 339n12, 340n22, 342n43, 345n61, 346n66, 347n68, 347n72. *See also* Western tonal art music, and emotion  
and action tendencies, 189, 192, 199–201, 247, 251, 254, 256, 338n3  
and affective feelings, 191, 199–201, 204–205, 214, 216, 246–248, 256, 313n70, 329n68, 338n8  
and appraisal, 191–194, 198, 250–251, 257  
and arousal, 189–193, 195, 199–202, 204–205, 214–217, 246–250, 255–257, 281, 290, 293–294, 322n92, 329n68, 338n7, 340n30, 345n60  
off-line and on-line, 200–201, 204–205, 209, 229–230, 246, 252, 255–256, 339n13, 342n43  
and basic emotions and affect programs, 196, 204–205, 209, 214, 339n20  
and cognition, 189–193, 195, 202–203, 205, 210–211, 214, 216, 222, 246–256, 340n30  
and core relational themes, 192–194, 199  
and functional anatomy, 199, 247  
and intentionality, 191–193, 196–197, 200–204, 204, 209–210, 246–249, 251–253, 338n11

- Emotion (cont.)  
 and the judgmentalist (propositional attitude)  
 theory of, 191, 203–204, 210, 337n2  
 and moods, 191, 199–201, 226  
 and motivation, 191–192, 251, 313n70,  
 332n20, 338n3, 338n10  
 and opponent processing, 198  
 and passions, 191, 199–200, 228  
 and perception, 192–195, 197, 199–200, 203–  
 204, 214, 249, 253, 255, 257, 337n2,  
 339n12  
 and religion, 200, 253–254, 259–260, 262,  
 267, 269–270, 282, 295–296, 347n74,  
 352n56  
 and valence, 82, 191–193, 194, 198–200,  
 203–294, 249, 251, 253, 338n9
- Epidemiological theory of the proliferation of  
 representations. *See* Science and scientific  
 explanation, and anthropology
- Episodic mentality, 98
- Evans, Gareth, 30–31, 45, 217, 219–221, 223–  
 224, 243, 306n12, 307n14, 341n33,  
 341n34, 341n36, 345n57, 345n58
- Existence proofs, 14–15, 83, 127, 131–138,  
 308n28, 322n94
- Feature-placing language and feature domains,  
 102, 218–220, 222, 236–237, 243, 246, 257,  
 344n56
- Feature space, 61, 226, 243, 245, 313n65. *See*  
*also* Egocentric space; Western tonal art  
 music, and virtual acousmatic space
- Ferguson, Donald, 313n66, 313n67, 325n25,  
 327n56
- Flashbulb memories, 288, 290
- Fodor, Jerry A., 9, 72, 76, 340n21
- Franck, César, Symphony in D Minor, 119–121
- Frege, Gottlob, 177, 221, 335n50, 345n58
- Frijda, Nico, 189, 191–193, 195, 197, 199, 249,  
 253–254, 257, 270, 338n3
- Functional and structural kinds, 7, 9, 143, 163–  
 164, 166–167, 180, 182, 184, 186. *See also*  
 Natural kinds
- Galanter, Eugene, 101, 105–106, 282, 310n44,  
 350n33
- Gates, Henry Louis, 121–122, 327n51
- Generative theory of language, 8, 11–16, 101,  
 112–113, 155, 281, 303n7, 304n9  
 and of music, 2, 8, 16, 36–41, 71, 81, 88, 94–  
 95, 99–101, 108, 110, 112, 126, 131, 133,  
 141, 138, 155, 221, 279–280, 298, 309n30,  
 309n31, 315n77, 324n23, 325n35, 326n36,  
 328n64
- Gestalt theory, 41, 71–72, 74, 81, 108, 221,  
 253, 315n81
- Gesture, 40, 76–77, 81, 92, 96, 98, 117–119,  
 121, 139, 141, 167, 228–232, 235, 256–257,  
 285, 323n15, 324n21, 324n25, 325n28,  
 327n47. *See also* Charades; Mimesis
- Gibbard, Allan, 304n14
- Gibson, James J., 24–25, 29, 30–35, 48–49, 61–  
 62, 73, 77, 82, 100, 274, 305n2, 305n6,  
 306n9, 307n22, 308n24, 308n25, 311n47,  
 313n69, 326n36  
 and affordances, 23, 33–35, 47, 77, 100, 115,  
 189–190, 199, 214, 222, 237, 253, 256–257,  
 313n69, 339n12, 342n38  
 and ecological psychology, 48, 61, 82–83,  
 305n6, 308n26, 338n12
- Gilbert and Sullivan, *Yeomen of the Guard*, 215
- Glennie, Evelyn, 339n15
- Gödel, Kurt, 153, 175, 180
- Goehr, Lydia, 334n36, 340n24
- Goethe, Johann Wolfgang von, 255, 268,  
 342n47, 349n19, 349n26
- Goldman, Alvin, 68–70, 232
- Goodman, Nelson, 7, 12, 16–17, 19, 44, 88,  
 90–94, 102–103, 118, 122, 125, 141–142,  
 158, 165, 227, 230, 232, 261–262, 271,  
 306n13, 309n36, 310n37, 322n3, 322n4,  
 322n5, 323n10, 323n12, 328n58, 331n11  
 and exemplification, 21, 43, 91–94, 103, 123,  
 125–126, 141–142, 227, 231, 271, 322n4,  
 322n6, 322n8, 331n12, 350n29
- Good tricks, 180–182, 184, 336n58
- Gordon, Robert, 191

- Gould, Stephen Jay, 51, 53, 153–154, 184, 331n4, 333n26, 333n28, 334n37, 335n42
- Greenspan, Patricia, 191, 203–204, 339n18
- Grice, Paul, 89, 116, 125
- Griffiths, Paul E., 191, 195–196, 204, 233, 339n19, 340n20
- Grue predicates, 6–7, 303n2
- Gurney, Edmund, 98, 202, 211–214, 230, 253
- Guthrie, Stewart, 234, 267, 286, 289, 349n18
- Haack, Susan, 5–7
- Halpern, Andrea R., 68
- Handel, George Frideric, 315n82
- Hanslick, Eduard, 123, 190, 214, 233
- Haptic (tactual) modality, 33, 35, 53–54, 59, 71, 77, 82, 117, 127, 193, 211, 224, 268, 274, 282, 289, 311n50, 329n66
- Hardin, C. L., 346n62
- Harvey, William, 41
- Hatten, Robert S., 305n1, 305n6, 313n70, 316n89, 326n36, 350n27
- Haydn, Franz Josef, Ninety-fourth Symphony in G, “Surprise,” 205, 208
- Heft, Harry, 35, 48–49
- Hegel, G. W. F., 18, 259–260, 263, 266, 284, 347n2, 348n14
- Hennig, Willi, 161
- Heresy of the separable experience, the, 190, 214, 246–248
- Hiltz, Stephen, 333n29, 344n55, 348n6
- Hinde, Robert, 268, 349n20, 349n22
- Horgan, Terry, 132, 304n9, 342n42
- Horror of the contingent, the, 259–264, 269, 283–286, 293, 295–296, 299, 351n35
- Hull, David, 9, 146, 155–156, 162, 169–170, 331n5, 331n7, 331n12, 333n24, 333n28, 334n34, 334n37
- Hulme, Thomas E., 233
- Hume, David, 264
- Information, 4, 14, 23–30, 33–34, 36, 40–42, 45, 47, 49–50, 62, 64, 82, 84, 89, 110, 118, 131–133, 135, 138, 152, 171, 194, 197, 215–217, 224, 306n8, 306n9, 306n10, 306n11, 308n24, 308n25, 308n26, 310n38, 338n6, 339n12, 343n50
- context-free, 29
- and *de re* informational content, 25–27, 30–31, 45, 87, 89–90, 306n10
- hard and soft, 84
- and the human informational system, 30, 34, 47, 341n34
- and informational invariants, 24–25, 33, 82, 118, 232–233, 305n3
- and informationally structured objects and events, 23, 25, 30–33, 35–36, 47, 62, 82, 88, 152, 315n81, 326n36
- and informational states, 27, 29–30
- and informational vehicles, 23, 27–31, 35, 84, 89–90, 197, 307n15
- and information links and informational tracking, 219–220, 224, 247–248, 341n33, 344n56
- and information theory, 24–27, 152, 306n7, 306n8, 306n9
- local, 29
- natural, 29
- and representation, 27–31, 34, 90, 306n11, 307n15, 308n24, 308n25, 308n26, 326n36, 339n12
- Inge, Leif, 334n35
- Interpretation *de dicto* and *de re*, 11–12. *See also* Metarepresentation
- Invariance principle, the, 325n30
- Isomorphism (first-order structural resemblance), 28–29, 34, 43, 84, 89–90, 271, 309n35
- and paramorphism (higher-order structural resemblance), 43, 48, 84, 131, 271–272, 280
- Jackendoff, Ray, 2, 15–16, 33, 36–41, 47, 49, 71, 81–82, 88, 94–96, 100, 108–109, 112, 126, 138–139, 141–142, 155, 221, 237, 279–280, 308n28, 309n31, 315n77, 324n23, 325n35, 328n64
- James, William, 230, 267–269, 349n18

- Jazz, 121–122, 165
- Jeannerod, Marc, 41–42, 45, 61, 66, 68, 70, 100, 309n33, 310n44, 311n48
- Johnson, Mark, and the body-in-the-mind hypothesis, 21, 35, 54–55, 88, 126–128, 139–141, 225, 234, 272, 276, 299, 312n53, 312n54, 328n57
- Johnson-Laird, Philip, 45–46, 50, 82, 101–105, 107–108, 116, 223, 225, 233, 235, 308n25, 309n35, 310n41, 310n44, 325n26, 328n65, 342n50
- Kant, Immanuel, and the Critical Philosophy, 46, 167, 230, 246, 264–267, 270–273, 276–282, 295–299, 310n41, 342n45, 348n10, 349n15, 349n23, 349n24, 350n29, 350n30, 351n36, 351n37, 352n57, 352n58, 353n59, 353n60, 352n62  
and aesthetic ideas, 270–273, 279–281, 297  
(see also Mental models and modeling, aesthetic)  
and indirect symbolic hypotyposis (indirect presentation), 270–274, 276, 279, 282, 297, 299, 349n24
- Karajan, Herbert von, 168
- Katz, David, 53–55, 77, 269, 289, 311n53, 312n55, 346n67
- Keijzer, Fred, 83–85, 309n34
- Keil, Frank, 103
- Keller, Helen, 54–55, 268
- Kenny, Anthony, 191, 194–195, 197, 203
- Kilmer, Joyce, 288
- Kinkade, Thomas, 288
- Kitcher, Philip S., 145, 164, 166
- Kittay, Eva F., 101–103, 108, 218, 326n39, 326n45
- Kivy, Peter, 147, 175–176, 178–180, 182, 186, 202, 204, 214, 228–229, 280, 313n67, 328n63, 331n10, 335n45, 335n49, 339n17, 344n55
- Koffka, Kurt, 41
- Korsgaard, Christine, 304n14
- Kripke, Saul, 335n48
- Lakoff, George, 21, 35, 54, 88, 126–128, 139–141, 225, 234, 272, 276, 312n53, 312n54, 328n57
- Lalo, Eduard, *Symphonie Española*, 40
- Lamarck, Jean-Baptiste, 156
- Langer, Susanne K., 326n38, 345n61
- Large, Edward W., 132–138, 328n62
- Lashley, Karl S., 15, 41
- Lawson, E. Thomas, 287–290, 351n43
- Lazarus, Richard, 191–193, 204, 250, 338n12
- Leclerc, Ivor, 348n14
- Leibniz, Gottfried Wilhelm von, 281–282
- Lerdahl, Fred, 2, 36–41, 47, 49, 64, 71, 81–82, 88, 94–96, 100, 108–109, 112, 133, 138–139, 141–142, 155, 215, 221, 237, 245, 279–280, 308n28, 308n29, 309n31, 312n54, 315n77, 316n86, 324n23, 325n35, 326n36, 328n64, 345n59
- Lessing, Gotthold Ephraim, 265
- Levinson, Jerrold, 93, 158–162, 167, 174, 177, 181, 186, 323n10, 326n42, 329n66, 351n40
- Levitin, Daniel J., 312n54, 312n60, 315n76, 315n78, 315n82, 324n19
- Lewis, Cecil Day, 234, 256, 313n68
- Lewis, David K., 336n51
- Library of Orpheus, the, 180–182
- Lidov, David, 201
- Lifschey, Marc, 168
- Lock, Andrew, 332n20
- Lorand, Ruth, 329n2
- Lyons, William, 191, 203
- Mahler, Gustav, 121  
First Symphony in D, 64–65, 121  
Fourth Symphony in G, 73–74
- Marr, David, 14, 308n25, 315n80
- Matravers, Derek, 191, 246–248, 345n60
- McCauley, Robert N., 287–290, 326n37, 332n20, 333n29, 335n44, 344n53, 351n42, 351n43
- McDowell, John, 45, 341n34
- McGinn, Colin, 43, 46, 84, 104–105, 217, 223–225, 342n42, 346n63, 346n64, 346n65



- McNeill, David, 101–102, 111, 115, 117, 125, 139, 232
- Mead, George H., 98, 230
- Meissner, H. A., 265
- Memes and memetics, 144, 148, 151–152, 154–156, 169–173, 333n28, 335n43
- Mendelssohn, Felix, 235–236, 349n25
- Mendelssohn, Moses, 296
- Mental content. *See* Representation, internal; Representational content
- Mental models and modeling, 21, 23, 28, 43, 45–48, 77, 81–82, 84, 87, 94, 99–100, 103–107, 114, 116–118, 123, 125–126, 131, 138–141, 190, 211, 220, 223, 225, 230–236, 252, 248, 252, 256, 257, 269, 271–273, 280–282, 295, 297, 299, 309n34, 309n35, 310n39, 310n40, 310n41, 310n44, 310n45, 324n24, 325n26, 325n31, 325n32, 328n57, 328n65, 343n50, 346n63, 346n64, 346n65. *See also* Representation, analog; Representation, nonconceptual
- aesthetic, 233–235, 256, 272, 281, 297
- and images, 46–47
- musical, 21, 48, 82, 109, 114–116, 118, 123, 125–126, 131, 140–141, 190, 232, 235–236, 246, 248, 251, 256–257, 269, 272, 281–282, 299, 301, 327n49
- Metaphorical transference, 54, 127, 131, 140, 141, 231, 272, 282, 299, 311n53, 312n54, 313n71
- Metarepresentation, 2, 4, 8–13, 16, 18, 30. *See also* Interpretation
- descriptive-explanatory, 8–10, 16, 36, 144, 263, 348n9
- interpretive, 1–2, 8, 10–13, 16–20, 23, 36, 88, 144, 263, 337n2
- and reflexive metainterpretation, 17–20, 36, 87–88, 99
- Meyer, Leonard, B., 71, 190, 209, 215, 340n30, 348n5
- Miller, George A., 15, 101–108, 282, 310n44, 350n33
- Millikan, Ruth G., 7, 9, 27–29, 45, 95, 99–100, 146, 148–151, 155, 189, 304n15, 308n24, 323n14, 331n12, 332n21, 335n43
- Mimesis and imitation, 47, 70, 76–77, 87, 95, 96–99, 113, 118, 140–141, 152, 230–231, 251, 273, 282, 285, 290, 293, 323n16, 323n18, 324n21, 324n21, 324n22, 342n48. *See also* Charades; Gesture
- Mithen, Steven, 76, 282, 286, 323n16, 352n56
- Modularity of mind hypothesis, 71–77, 81, 83, 154, 196, 205, 215–216, 233, 255, 326n37, 341n34
- and actual domains of mental modules, 149–150
- and cultural domains of mental modules, 149–151, 289
- and proper domains of mental modules, 149–151, 289
- Molino, Jean, 324n21, 325n27
- Motor system, 15, 21–23, 33–35, 40, 41–43, 47, 51, 68–70, 75, 81–83, 99–100, 104, 117, 126, 140, 190, 198, 222, 247, 251, 299, 309n32, 310n45, 311n48, 312n53, 313n73, 322n92, 325n25, 328n57. *See also* Representation, motor and motor-schematic
- Mozart, Wolfgang Amadeus, 121, 167–168, 179, 315n82, 328n63
- Adagio and Fugue* in C Minor, K. 546, 74
- Don Giovanni*, 119, 121, 322n7
- The Marriage of Figaro*, 119, 121
- A Musical Joke*, K. 522, 125
- Piano Quartet in G Minor, K. 478, 205
- Piano Sonata in A, K. 331, 315n77
- Twenty-ninth Symphony in A, K. 201, 276
- Twenty-third Piano Concerto in A, K. 488, 276
- Music. *See* Western tonal art music
- Musilanguage hypothesis. *See* Rudimentary song
- Mythic mentality and culture, 98, 285
- Narayanan, Srini, 127–131, 298
- Narmour, Eugene, 71–77, 81, 209, 316n88

- Natural kinds, 7, 9, 143–146, 148, 162, 164, 166–167, 191, 196. *See also* Functional and structural kinds
- Neiman, Susan, 259, 347n1, 348n8, 353n61
- Neisser, Ulrich, 288
- New musicology, the, 167
- Nietzsche, Friedrich, 87, 264, 281, 283–285, 296, 300, 351n35  
and the Apollinian-Dionysian distinction, 282–283, 285–286, 292–293, 296
- Nonconceptual content. *See* Representational content, nonconceptual
- Norms and normativity, 1–8, 11–13, 17–20, 23, 82, 87–89, 104, 144, 146, 148–151, 174, 197, 303n6, 324n23  
and norm-kinds, 143–144, 157, 162
- Norrington, Roger, 168
- Noyes, Alfred, 234–235
- Nussbaum, Martha C., 191, 203, 327n50, 337n2, 338n5, 338n11, 339n13, 340n27, 351n44
- Otto, Rudolf, 267–269, 273
- Parasympathetic dominance, 294–295
- Pascal, Blaise, 260, 263, 289
- Peacocke, Christopher, 44–46, 104, 217, 220–221, 223, 232, 310n42, 341n36, 342n49, 345n57
- Peel, John, 315n77
- Peirce, Charles S., 147, 303n1
- Perry, John, 221
- Peters, Charles R., 324n21, 325n28, 332n20
- Petri nets, 128–129, 131
- Pfeiffer, John, 286, 351n46, 351n47  
and the “twilight state,” 290–291, 293
- Philosophical naturalism, 1–8, 16–17, 19–20, 149, 177–178, 191, 197, 204, 225, 264, 274, 283, 292, 296, 304n13, 304n14, 349n23  
epistemological, 2–3, 5–8, 20
- Piaget, Jean, 77, 316n87
- Picasso, Pablo, 249
- Pinker, Steven, 14–15, 305n19
- Plans, 22, 35, 41–43, 47–48, 61, 64, 68, 77, 81–83, 87–88, 98, 100–101, 105–107, 113, 126–128, 131, 138–139, 214, 234–235, 248, 252, 267, 269, 273, 279, 290, 309n32, 310n44, 350n33  
and musical plans, 21, 43, 47, 62, 82, 87, 99–100, 109–110, 118, 125, 131, 140, 155–156, 189, 191, 211, 213–214, 217, 230–232, 236, 246, 248–249, 253, 256, 269, 279, 281–282, 298, 301, 310n43, 341n37
- Plato and Platonism, 122, 190, 259–261, 263–264, 266, 283, 295, 335n46, 347n3, 348n11, 348n14, 351n35, 351n36, 353n59. *See also* Western tonal art music, and Platonism
- Plotinus and Neoplatonism, 264, 266–267, 273, 278, 283–285, 329n67, 348n11, 348n12, 348n14, 348n15, 349n16, 349n17, 350n28, 351n37, 351n38, 353n59
- Plotkin, Henry, 9, 153, 171, 254, 304n12, 338n8
- Poetry, 87, 96–98, 102, 111, 123, 231, 234–235, 253, 256, 271–273, 276, 281, 288, 313n68, 325n27, 350n34
- Popper, Sir Karl R., 350n31
- Pribram, Karl H., 101, 105–106, 282, 310n44, 350n33
- Prinz, Jesse J., 35, 46, 61, 191–194, 196, 200, 204, 306n11, 337n1, 337n2, 338n3, 338n4, 338n9, 338n11, 339n12, 346n66
- Prokofiev, Serge  
*Classical Symphony*, 122  
*Lieutenant Kije*, 49
- Proper functions, 6–7, 17, 144, 146, 148–151, 156–157, 162, 286–287, 303n3, 304n15, 352n53  
adapted, 149  
derived, 149, 151, 286, 332n17  
direct, 151, 286, 293, 332n17
- Propositional thought and content. *See* Representational content
- Protopropositional content. *See* Representational content, protopropositional

- Pugh, George H., 309n34, 346n63
- Putman, Daniel, 307n21, 340n28
- Putnam, Hilary, 301, 353n1
- Pythagoras, 175, 347n3. *See also* Western tonal art music, and Pythagoreanism
- Quine, Willard Van Orman, 2, 5–7, 16, 20, 93, 177, 335n50, 336n54
- Raffman, Diana, 215, 323n8, 323n11, 340n21, 340n29
- Rawls, John, 12, 18
- Recursive auto-associative memory networks (RAAM), 131–138
- Reflective equilibrium, 2, 12, 16–20, 149, 174, 251
- Religion and religious experience, 11, 17, 200, 253–254, 260, 266–270, 285–286, 289, 293, 295–296, 302, 340n25, 349n18. *See also* Emotion, and religion; Ritual, religious
- Rembrandt, 288
- Representation, 1–4, 7–11, 14–22, 23–25, 27–31, 33–38, 40–51, 61, 64, 69–71, 73, 76, 81–85, 87–89, 94–100, 104, 110–111, 113, 116, 123, 129, 131–133, 136, 138–139, 141–143, 150–153, 155–157, 169, 187, 189–190, 194, 197, 201–202, 223, 225–226, 230, 232–233, 237, 251, 253, 271, 266, 271–272, 278, 283, 285–287, 290, 303n4, 304n9, 305n4, 306n10, 306n13, 307n14, 307n15, 310n39, 310n42, 310n45, 322n93, 322n1, 323n12, 324n21, 332n17, 338n4, 342n42, 350n29. *See also* Metarepresentation; Western tonal art music, and representation
- analog, 21, 28, 43–46, 48, 82, 104, 117, 223, 225, 272, 310n40
- artifactual, 9, 143, 171, 187, 322n1
- conceptual (sentential), 104–105, 115, 118, 128, 150, 217, 225, 324n23
- digital, 45
- external, 4, 8–9, 21–24, 28, 31, 33, 81–82, 87–89, 95, 99, 100, 117, 143, 271
- and intentional icons, 45, 95, 99, 149, 189
- and intentionality, 19, 27, 29–30, 34, 47, 84, 89–90, 95, 98–99, 105, 107, 141, 149, 159–160, 186–187, 197, 209–210, 225, 230, 246–249, 306n10
- internal (mental), 2, 4, 8–9, 13–14, 21–24, 28–29, 34–36, 43, 45–47, 71, 81–85, 87, 95, 99–100, 105, 136, 138, 143, 153, 221, 223, 225, 232, 279, 308n24, 308n25, 308n27, 309n34, 310n39, 324n23, 325n31, 325n32, 339n12
- and language, 2, 8, 11–16, 28, 30, 40–41, 44, 72, 76, 83, 90, 96–98, 101–104, 111–113, 115–116, 118–119, 121, 123, 138–139, 149–150, 152, 155, 180, 201, 209, 218–220, 223, 225–226, 232, 234, 236–237, 243, 251, 272, 280, 298, 310n45
- motor and motor-schematic, 35, 40–43, 45, 47, 50–51, 61, 66, 71, 81, 83, 100, 127, 139–140, 190, 231, 254, 257, 282, 308n26, 309n32, 309n33, 310n45, 322n92, 325n25 (*see also* Motor system)
- musical (*see* Western tonal art music, and representation)
- natural, 9, 28–29, 143, 322n1
- nonconceptual (nonsentential), 21, 70, 81, 94–95, 115, 220, 223, 225, 236, 257, 272, 279–282, 279–280, 282, 293, 295, 298, 301, 306n14, 324n23, 328n65, 346n63 (*see also* Mental models and modeling)
- and pragmatics, 87–89, 95, 121, 125, 138
- and prosody, 40, 96–97, 118, 139, 285, 301, 327n53
- pushmi-pullyu, 88, 95–96, 98–100, 141, 155, 189, 209, 211, 230, 237, 249, 256, 323n14
- and representational vehicles, 89–91, 95, 105, 115, 123, 201, 220, 279
- and signs, 28–29, 88–90, 92, 96–98, 111, 141, 149, 151, 201, 230, 303n1, 307n14, 323n15, 326n38

- Representation (cont.)  
 and symbols and symbolization, 25, 28, 34, 44, 81, 84, 88–89, 91–95, 98–99, 102, 118, 141, 151, 177, 210, 226–227, 230, 232, 261–263, 270–272, 279, 286, 290, 297, 299, 322n1  
 and syntax, 13, 44, 82, 87–92, 94–96, 99, 104, 112–113, 116, 119, 138, 141, 151, 155, 169, 243, 271, 304n9, 325n27
- Representational content, 1–4, 9–10, 12–13, 16, 18–19, 88, 95, 99, 104, 107, 113, 115–117, 122–123, 125–126, 131, 139–141, 152, 223  
 analog, 44–45  
 conceptual (propositional), 28, 45, 95, 104, 115–116, 118, 123, 125–126, 131, 140–141, 152, 169, 194, 196, 201–202, 211, 224, 236, 251–252, 272, 305n20, 326n46, 329n66, 342n42, 343n50, 345n57  
 and meaning, 1–5, 8, 10, 12, 16, 19, 21, 28, 87–91, 96, 101–105, 109, 111, 149, 199, 214, 217, 224, 233, 235, 249, 263, 271, 322n2, 344n52, 346n64 (*see also* Saussure, Ferdinand de, and structuralist linguistics)  
 nonconceptual (nonpropositional), 21–22, 45, 48, 82, 92, 94–95, 98, 115, 125, 139–140, 152, 189–190, 197, 201–202, 211, 214, 217, 219–220, 221–225, 237, 250, 257, 268–270, 279, 282, 298, 326n46, 341n34, 342n39, 343n50  
 protopropositional, 201, 220–223, 235  
 and scenario content, 87–88, 113, 123, 125–126, 140, 220–221, 235  
 and semantic fields, 21, 88, 101–109, 111–119, 123–126, 140–141, 227, 231, 271–272, 326n39, 326n41, 327n53  
 and semantics, 8, 10, 12–13, 24, 26, 30, 44–45, 70, 82, 87–89, 91–93, 96, 103–105, 108, 111, 116, 121, 123, 125, 128, 138, 141, 169, 202, 247, 249, 279, 303n6  
 semi-propositional, 305n20
- Representational theory of mind (RTM), 82–83
- Reproductively established characters, 146–147, 171, 331n9, 331n12
- Reproductively established families (REFs), 146–147, 148, 151–152, 157–159, 162, 164–167, 169–171, 173–174, 184, 186, 286, 331n10, 331n12, 331n14, 335n43
- first-order, 146, 156, 159, 165, 172, 186, 332n17
- higher-order, 147–148, 154, 156, 159, 165–166, 170, 172, 186, 332n15
- Respighi, Ottorino, *The Birds*, 226, 307n23
- Ridley, Aaron, 182, 187, 190, 200, 228, 232, 235, 250, 310n43, 337n62
- Ridley, Mark, 163, 331n5, 334n32, 334n33
- Ridley, Matt, 333n24
- Rimsky-Korsakov, Nikolai, *Russian Easter Overture*, 49
- Ritual, 282, 290–294  
 religious, 11–12, 285–288, 291–296  
 and the ritual form hypothesis, 287–290, 292–294, 351n41
- Robinson, Jenefer, 191, 196, 204, 226–227, 232, 237, 243, 249–251, 305n4, 322n92, 326n43, 340n30, 342n43, 342n44
- Rosenberg, Alexander, 9, 331n5, 331n7, 331n8
- Ross, James, 114–115, 117, 326n41
- Rousseau, Jean-Jacques, 54–55
- Rudimentary song and the musilanguage hypothesis, 96–97, 99, 285, 290, 301, 323n16, 352n53
- Rules, 3, 11–14, 17, 83, 92, 324n23. *See also* Norms and normativity
- Russell, Bertrand, 224, 336n56, 342n40
- Sadato, Norihiro, 315n74
- Saint-Saëns, Camille, *Carnival of the Animals*, 53
- Sargant, William, 294–295, 340n26, 352n51
- Sartre, Jean-Paul, 103, 253, 259–266, 295–296, 298, 347n70, 348n13  
 and existential nausea, 256–257, 259–262, 269, 284, 295

- and his theory of the emotions, 190, 192–193, 253–257
- Saussure, Ferdinand de, and structuralist linguistics, 101, 111–112, 118–119, 326n38, 326n45. *See also* Syntagmatic and paradigmatic contrasts
- Schachter, Stanley, 249
- Schoenberg, Arnold, 307n19
- Schopenhauer, Arthur, 71, 73, 264, 281–285, 296, 340n27, 350n32, 351n36, 351n37, 351n38
- Schubert, Franz  
*Der Lindenbaum*, 215  
 Eighth Symphony in B Minor, “Unfinished,” 274  
 Ninth Symphony in C, “Great,” 122
- Schumann, Robert  
 First Symphony in B-flat, *Spring*, 248  
 Third Symphony in E-flat, *Rhenish*, 231, 236, 246, 248
- Science and scientific explanation, 1, 3, 5–9, 13–15, 17, 20, 93, 145, 150, 162–164, 179, 191, 195–196, 204, 251–252, 255, 278, 285, 303n8, 328n57, 332n20
- and anthropology, 10–13, 16–17, 264, 267, 286–287, 291, 293–294
- and co-evolution, 148, 150–152, 155, 157, 287, 333n28, 348n9
- and cultural evolution, 152, 156, 167, 286, 331n12, 332n20, 333n24
- and cultural exaptation, 149–151, 155, 157, 286–287, 289, 332n18
- and cultural replication, 153–154, 156–157, 165, 169–170, 172, 287
- and cultural selection, 152–157, 286
- and the epidemiology of representations, 9–10, 152–155, 303n4
- and biology, 9–10, 14–15, 17, 19–20, 87, 144–145, 149–151, 157, 163–164, 168, 184, 189, 256, 311n51
- and cladism, 161–164, 166, 184
- and evolution, 7, 15, 17, 22, 51–54, 58, 72, 76–77, 95–96, 98, 145, 149–151, 156–157, 161–166, 169–170, 180, 186, 195, 198, 254, 284, 286, 289, 291, 293, 308n25, 332n20, 338n8, 342n38, 346n63, 352n54
- and evolutionary exaptation, 54
- and evolutionary homology and analogy, 51–54, 59, 76, 96, 150, 166–167, 184, 186, 195–196, 198, 209, 269, 332n20, 334n37
- and the “evolutionary” view of species identity, 161, 163, 165, 186
- and natural selection and design, 7, 10–11, 17, 21, 72, 146, 148–157, 163, 170–171, 182, 186, 197, 199, 278–279, 331n8, 332n16, 333n27, 336n59
- and pheneticism, 161, 164
- and replication, 148, 153, 157, 172, 333n24
- and sexual selection, 97–98, 212
- and chemistry, 3, 14, 20
- and cognitive psychology, 9–11, 16, 19–20, 23, 36, 45, 71–72, 82–85, 87, 116, 189, 233, 256, 264, 281, 267, 281, 287, 308n25, 308n29
- and genetics and genes, 145–149, 152–157, 162–164, 172, 251, 332n16, 332n19, 333n24, 333n26, 333n28, 334n37, 337n61
- and neuroscience, 15, 19, 23, 294, 315n78
- and physics, 1, 3, 13–14, 20, 60, 117, 150, 221, 281, 336n57
- Scriabin, Alexander, *Poem of Ecstasy*, 40
- Scruton, Roger, 73, 100, 112, 146, 243, 257, 298, 311n49, 324n25, 331n13
- Seeger, Anthony, 286, 291–293, 311n52
- Sellars, Wilfrid, 203
- Semantic content. *See* Representational content
- Semantic fields. *See* Representational content
- Semiotic and semiosis, 28, 87–89, 98, 118, 141, 149, 230, 251, 281–282, 326n38, 326n44, 326n46, 327n47
- Set theory, 176–177, 336n50, 335–336n50, 336n54
- Shakespeare, William, 179–180, 200, 224, 288, 300
- Sharpe, R. A., 146, 148, 331n10

- Shepard, Roger, 24, 34–35, 43, 46, 82, 254, 308n27  
and psychophysical complementarity, 34–35, 48, 62, 339n12
- Shostakovich, Dmitri, 119, 122
- Siegel, Harvey, 14–15
- Simons, Peter, 331n12
- Simulation, 23, 28, 33, 35, 43, 46, 64, 66, 68–70, 76, 81–82, 99, 104, 107, 125, 128, 140–141, 213–215, 217, 225, 228–235, 251–252, 255–257, 269, 273, 290, 293, 298, 309n34, 310n45, 339n13  
and mirroring, 69, 229–231, 251, 313n72, 315n76, 347n69
- Singer, Jerome, 249
- Slawson, Wayne, 315n77
- Sloboda, John A., 111, 313n63, 346n64
- Smetana, Biedrich, 121
- Sober, Elliot, 331n5, 331n8
- S/Ojectivity, 237, 243, 252–253, 263, 266, 269–270, 295, 343n52
- Solomon, Richard L., 198, 338n9, 338n10
- Solomon, Robert C., 191, 203
- Sondheim, Stephen, 122
- Sophocles, 283, 301
- Species, 9, 17, 21, 97–98, 143–147, 150, 153–155, 157–158, 160–165, 167, 169, 171, 184, 186, 195–196, 204, 261, 286, 311n51, 331n8, 333n24, 334n32, 334n34, 336n59, 338n8. *See also* Science and scientific explanation, and biology
- Sperber, Dan, 9–10, 12, 16, 143, 149–155, 169, 263, 303n4, 305n20, 333n25
- Spinoza, Baruch, 259–260, 263
- Stalnaker, Robert, 27
- Stanford, Kyle, 164, 336n59
- Steiner, George, 282, 299–300, 347n3, 350n34
- Stevens, Wallace, 103
- Stokowski, Leopold, 32
- Strauss, Richard, 64  
*Also Sprach Zarathustra*, 64, 66  
*Don Quixote*, 40  
*Till Eulenspiegel's Merry Pranks*, 227–228, 230–231
- Stravinsky, Igor, *Pulcinella* Ballet, 122
- Strawson, Sir Peter F., 201, 217–219, 222–226, 236–237, 243, 245, 299, 341n31, 341n32
- Suya of the Mato Grasso, the, 311n52  
and the Mouse Ceremony, 291–293
- Swedenborg, Emanuel, 296, 353n59
- Syntagmatic and paradigmatic contrasts, 111–113, 118, 138, 326n40. *See also* Saussure, Ferdinand de, and structuralist linguistics
- Szell, George, 168
- Tchaikovsky, Peter I.  
1812 Overture, 119  
*Romeo and Juliet* Overture, 276  
Sixth Symphony in B Minor, *Pathétique*, 75, 205, 207, 274, 276  
Violin Concerto in D, 40
- Test-operate-test-exit (TOTE) schema, 101, 130, 138
- Theodicy, 284, 291, 353n59
- Tienson, John, 132, 304n9, 342n42
- Tokens and types, 1, 3–4, 8–9, 11, 13, 19, 20–21, 31, 44, 45, 47, 84, 88–92, 95, 99–100, 104–105, 111, 117, 141, 143, 146–149, 151, 153–158, 161, 165–167, 169–175, 177, 180, 182, 184, 186, 225–226, 230, 246, 286, 292–293, 298–299, 301–302, 329n2, 331n12, 331n14, 332n17, 337n62, 342n42, 345n61. *See also* Western tonal art music, and works, and ontology
- Tomasello, Michael, 98, 323n18, 325n29
- Toscanini, Arturo, 32, 151
- Translation, 10–12. *See also* Interpretation; Metarepresentation
- Uexküll, Jacob von, 83
- Updike, John, 351n48
- Ur-art, 285–286, 288
- van Frassen, Bas C., 20, 254
- Van Gogh, Vincent, 351n48

- Vaughan, Henry, 273, 276
- Vaughan-Williams, Ralph, *The Lark Ascending*, 49
- Virtual objects, 24, 34, 47. *See also* Western tonal art music, and virtual objects
- Virtual scenarios, 47. *See also* Western tonal art music, and virtual scenarios, layouts, environments, and terrains
- Vygotsky, Lev S., and psychological predicates, 117
- Wagner, Richard, 186, 335n40, 335n49  
*Tristan und Isolde*, 175, 182  
 and the *Prelude to Tristan und Isolde*, 184, 329n3, 330  
 and the *Tristan* chord, 175–176, 178, 182, 184–185, 337n62
- Wallis, W. T., 267, 348n14
- Walter, Bruno, 215
- Walton, Kendall, 327n56
- Wartofsky, Marx, 324n24
- Weber, Carl Maria von, 335n41  
*Der Freischütz* Overture, 289  
*Oberon* Overture, 56–57
- Weininger, Otto, 261, 348n5
- Western tonal art music, 2, 18, 20, 23, 38, 40, 50, 60, 81, 94, 119, 121, 126, 141, 150, 167, 215, 260–261, 273, 279, 293, 297–298, 301–302, 333n22, 340n23, 352n53, 353n63  
 and animism, 64, 66, 70, 231, 234–235, 253, 256, 261, 269, 298, 313n67  
 and arousal theories of musical experience, 189–191, 202, 205, 215, 217  
 strong, 191, 246, 248–249, 256, 345n60  
 weak, 191, 202, 204, 214, 246, 249, 256  
 and cognition, 189–190, 202–205, 211, 214, 216, 222, 247–248, 205, 211, 214, 222, 245–248, 250, 279, 340n21, 340n30  
 and creation, 142, 144, 147, 159–160, 179–182, 184, 186, 344n55  
 and discovery, 142, 144, 174–180, 186, 261, 344n55  
 and emotion and affective feelings, 21–22, 96–100, 141, 187, 189–191, 197, 200–205, 209–217, 225, 227–232, 246–253, 256–257, 259–260, 262, 267–270, 273–274, 276, 282, 290, 292–293, 295–296, 302, 322n92, 329n68, 340n30, 342n43, 345n61, 347n68, 347n74, 352n56  
 and expression, 228–230, 247–248, 251, 342n44, 345n60  
 and extramusical content, 21, 126 (*see also* Western tonal art music, and meaning)  
 and extramusical form, 21, 88, 111, 126, 141 (*see also* Western tonal art music, and meaning)  
 and field structure, 88, 108–109, 111, 113–119, 123, 125–126, 138, 140–141  
 and formalist theories of musical experience, 189–190, 202–203, 209–211, 214  
 and the haptic or tactual modality, 33, 35, 47, 53–54, 59, 71, 77, 82, 117, 127, 193, 311n50, 329n66  
 and intervals and scales, 33, 55–60, 71, 76–77, 109, 113–114, 133, 177, 297–298, 312n57, 312n58, 312n60, 313n61, 313n63, 313n64, 315n82, 316n86  
 and invention, 142, 144, 174, 176, 179–182, 186, 261, 297  
 and meaning, 21, 24, 48, 87–88, 91, 100, 105, 109, 111, 113, 115, 117–119, 123, 125–127, 131, 139, 141, 190, 263, 276, 282, 301, 322n2, 327n52, 327n56 (*see also* Western tonal art music, and extramusical form, and extramusical content)  
 and musical affordances, 21, 23, 34, 190, 199, 214, 256  
 and the musical touch effect, 189, 201, 211, 213, 253, 269, 295, 302, 311n50  
 and mystical ecstasy, 212, 268–269, 296, 302, 340n25  
 and neurofunction, 66, 68–69, 313n73  
 and paradigmatic contrast, 113, 116, 118, 138

- Western tonal art music (cont.)
- and performances, 21–22, 23, 88, 92–95, 99, 109, 125, 141–143, 146, 148, 151, 155–168, 172–174, 186–187, 189, 201, 205, 209, 211, 214–216, 230, 246, 248–249, 261–262, 268, 286–288, 290, 292–293, 295, 298, 302, 322n7, 322n8, 329n2, 331n3, 331n10, 331n14, 332n21, 333n22, 334n30, 334n31, 334n35, 352n53 (*see also* Western tonal art music, and works, and ontology)
  - and Platonism, 164, 175–180, 335n49, 344n55
  - and program music, 125–126, 327n54, 327n56
  - and Pythagoreanism, 280–281
  - and quotation, 94, 119, 121–122, 327n49, 327n49, 327n50
  - and representation, 1–2, 18–24, 34–38, 40–41, 47–50, 61–62, 64, 69–71, 73, 81–82, 87–89, 94–95, 97–100, 104, 110–111, 113, 115, 123, 131–139, 141–143, 151, 155, 157, 169, 187, 189–190, 197, 199, 201–203, 209, 211, 213, 225–226, 230–232, 237, 246, 250–251, 256–257, 262–263, 269, 276, 279–283, 286, 290, 293, 295, 298, 305n4, 313n70, 324n23, 325n25, 327n56, 329n66, 345n61
  - and scores, 92, 148, 154–155, 157–160, 167, 187, 213, 322n6, 332n15, 334n36
  - and utterance, 21, 87, 92, 94, 189, 210, 230, 249
  - and virtual acousmatic space, 21, 23, 49–51, 53–62, 64, 73, 82, 87–88, 99–100, 117–118, 123, 125–126, 131, 141, 190, 201, 213, 226, 231–233, 237, 243, 245–246, 253, 257, 269, 279, 281–282, 298–299, 301, 305n1, 311n50, 311n52, 312n54, 324n25, 345n59, 349n21 (*see also* Egocentric space; Feature space)
  - and virtual motion and action, 23, 32–33, 41, 47, 49–51, 53, 55–56, 59–62, 73, 82, 190, 201, 228–229, 232, 246, 257, 273, 313n66, 313n71, 324n25
  - and virtual objects, 21, 24, 32, 34, 47, 64, 69, 82, 99, 123, 141–142, 201, 231, 235, 243, 246, 249, 257, 269, 282, 305n4, 305n5, 316n85
  - and virtual scenarios, layouts, environments, and terrains, 21, 23, 31, 33, 35, 47–48, 61, 81–82, 87–88, 113, 123, 125–126, 140, 201, 214, 222, 230, 246, 249, 251, 257, 282, 299
  - and works and ontology, 21, 40, 81, 92–94, 142, 142–148, 157–169, 171–173, 184, 186–187, 226, 260–261, 286, 295, 298, 301–302, 307n17, 323n9, 329n2, 329n3, 331n10, 334n30, 334n31, 348n6 (*see also* Tokens and types; Western tonal art music, and performances)
- Whitehead, Alfred N., 259
- Whitehouse, Harvey, 351n41
- Williams, George C., 153, 333n25, 333n26
- Williams, Mary, 331n6
- Windsor, William S., 305n6, 308n30
- Wing, Lorna, 70
- Winkelman, Michael, 294
- Wittgenstein Ludwig, 302, 350n31, 353n1
- Wolff, Christian, 265
- Wolterstorff, Nicholas, 143–144, 147, 157, 162, 186, 329n2
- Zajonc, Robert, 191, 210, 338n8
- Zbikowski, Lawrence, 55, 60–61, 121–122, 139–141, 164, 311n52, 312n54, 313n67, 325n30, 327n51, 329n67, 329n68
- Zuckerandl, Victor, 347n73, 349n21