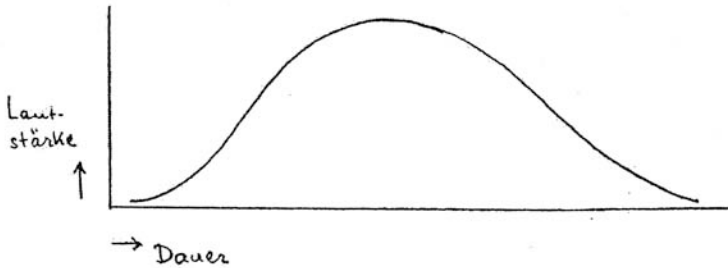


HELMUT LACHENMANN'S “SOUND TYPES”



MING TSAO

HELMUT LACHENMANN, IN HIS ARTICLE “Klangtypen der Neuen Musik” (“Sound Types for New Music,” 1966), defines two classes of sound types that are perceived either as musical processes or objects.¹ For a sound type to be perceived as process, the sound’s *Eigenzeit* or “own time” must be identical with its real time duration, in other words a sound type whose duration is dependent upon a “characteristic process of unfolding.”² A *Kadenzklang* (or cadence sound), for example, is a sound as process where its *Eigenzeit* is identical to the time it takes for its characteristics to unfold and achieve cadence. For Lachenmann, the *Eigenzeit* of a sound structure that is identical with its real time duration (such as the *Kadenzklang*) can contribute to a more active listening.³ (See Example 1.)

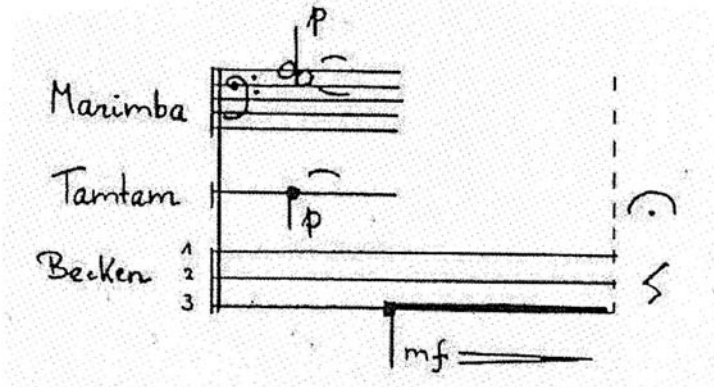


EXAMPLE I: A SCHEMATIC DRAWING OF THE TYPICAL SHAPE OF A KADENZKLANG, WHERE THE X-AXIS INDICATES DURATION AND THE Y-AXIS INDICATES AMPLITUDE

(“Klangtypen der Neuen Musik” in *Musik als existentielle Erfahrung*: 3)

Lachenmann’s *Impulsklang* (impulse sound) is a subclass of the *Kadenzklang* by reducing the *Kadenzklang* to a process of attack impulses followed by natural or artificially constructed decay. “Natural,” in this context, means assembling or disassembling the energy of the sound as part of the internal structure of that sound (usually through its resonance). On the other hand, “artificial” means assembling or disassembling the energy of the sound from without: i.e., as a composed process.⁴ The other types, *Einschwingklang* (attack sound) and *Ausschwingklang* (decay sound), are simply the two component parts of the *Impulsklang*.⁵ (See Examples 2 and 3.)

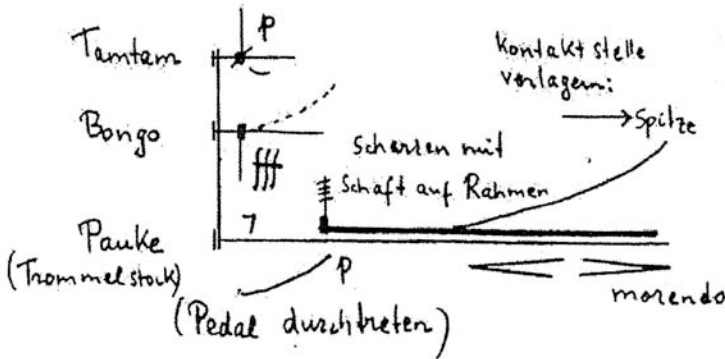
For a sound type to be perceived as an object, the sound’s *Eigenzeit* is less than its real time duration, in other words a sound type whose characteristics are appreciable before the sound finishes. Examples of sound types as objects are *Farbklang* (color sound) and *Fluktuationsklang* (fluctuation sound), where both are defined by their static or periodic outer contour comprised either by a static sound (such as a sustained chord) or periodic internal processes that create an overall impression of a static sound (periodic arpeggiations, micropolyphony in a fixed register, etc.). With these examples, a listener can appreciate the sound type independent of the sound’s *Eigenzeit* through a shortening or lengthening of their durations.⁶ (See Examples 4 and 5.)



HELMUT LACHENMANN, *INTÉRIEUR I*, BLATT 1 UNTEN

EXAMPLE 2: ASSEMBLING THE ENERGY THROUGH "NATURAL" MEANS:
A COMPLEX SOUND IS BUILT THROUGH THE
RESONANCE OF SINGLE ATTACKS ON INSTRUMENTS

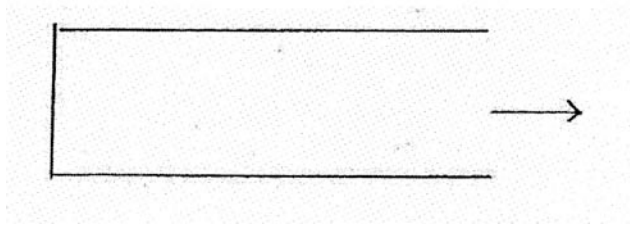
("Klangtypen der Neuen Musik" in *Musik als existentielle Erfahrung: 2*)



HELMUT LACHENMANN, *INTÉRIEUR I*, BLATT 17 UNTEN

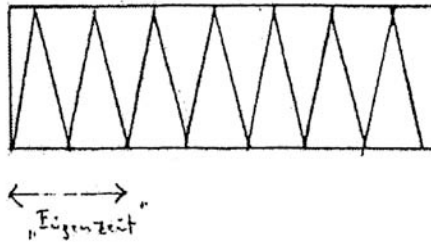
EXAMPLE 3: ASSEMBLING THE ENERGY THROUGH "ARTIFICIAL" MEANS:
A COMPLEX SOUND IS BUILT THROUGH
COMPOSED GESTURES ON INSTRUMENTS

("Klangtypen der Neuen Musik" in *Musik als existentielle Erfahrung: 2*)



EXAMPLE 4: A SCHEMATIC DRAWING OF THE
TYPICAL SHAPE OF A *FARBKLANG*

(“Klangtypen der Neuen Musik” in *Musik als existentielle Erfahrung*: 8)

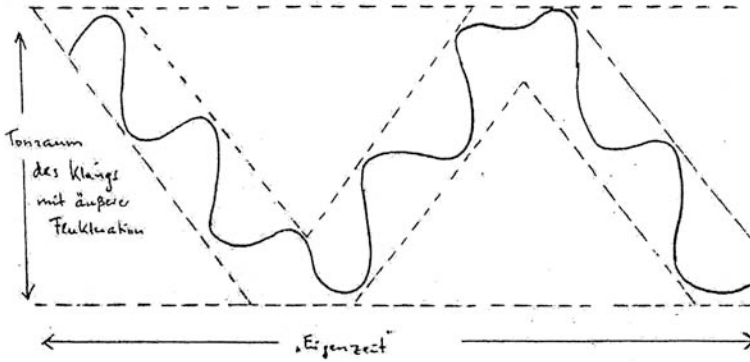


EXAMPLE 5: A SCHEMATIC DRAWING OF THE TYPICAL SHAPE OF A
FLUKTUATIONSKLANG: THE OUTER CONTOUR IS STATIC BUT INTERNALLY
COMPOSED OF PERIODIC PROCESSES. THE TIME IT TAKES
FOR A LISTENER TO REGISTER ITS
EIGENZEIT IS ONE OR TWO OF ITS PERIODS

(“Klangtypen der Neuen Musik” in *Musik als existentielle Erfahrung*: 11)

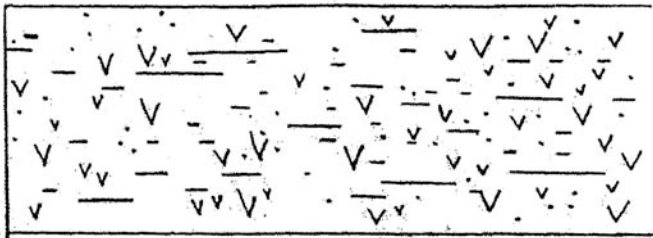
Sometimes the outer contour of a *Fluktuationklang* can itself be dynamic but periodic at the same time. In this case its *Eigenzeit* can be perceived after one or two of its external fluctuations. (See Example 6.)

A more complex sound object is the *Texturklang* (texture sound), where the details of the sound are continually changing (making it internally more complex than the *Farbklang* or *Fluktuationklang* whose internal details are static or periodic), but whose general shape is static, akin to a statistical sound field. Although every detail of the *Texturklang* is more or less different, its overall shape does not depend upon its real time duration of unfolding through relationships and is experienced after some time as an object.⁷ (See Example 7.)



EXAMPLE 6: A SCHEMATIC DRAWING OF THE TYPICAL SHAPE OF A *FLUKTUATIONSKLANG* WHOSE OUTER CONTOUR IS DYNAMIC BUT PERIODIC

(“Klangtypen der Neuen Musik” in *Musik als existentielle Erfahrung*: 13)



EXAMPLE 7: A SCHEMATIC DRAWING OF THE TYPICAL SHAPE OF A *TEXTURKLANG*

(“Klangtypen der Neuen Musik” in *Musik als existentielle Erfahrung*: 16)

Thus, Lachenmann has the following classification:

SOUND AS PROCESS:

Kadenzklang

Impulsklang

Ausschwingklang

Einschwingklang

SOUND AS OBJECT:

Farbklang

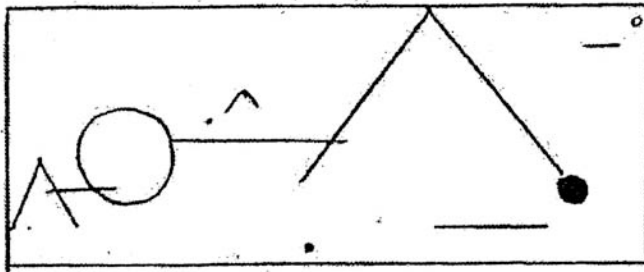
Fluktuationklang

Texturklang

For Lachenmann, sound as process as well as the *Farbklang* and *Fluktuationsklang* are composed of details that generally mirror their overall shape (crescendo/decrescendo processes or static/periodic contours). Only the *Texturklang* is composed of details that do not mirror the overall shape (which is static) but are highly differentiated and unpredictable.⁸

Lachenmann's *Strukturklang* (structure sound) is one whose internal details are constantly changing (akin to the *Texturklang*) but experienced as a process where its *Eigenzeit* is identical to its real time duration, which is Lachenmann's way of prioritizing the *ordered relations* between the various sounds in his music and not the sounds themselves (an idea that Lachenmann inherits loosely from serial thinking). The *Strukturklang* conveys a sense of a formal projection of sounds in a "palpably temporal space" where the "border between sound presentation and form presentation becomes more fluid."⁹ (See Example 8.)

The musical grammar that underlies Lachenmann's string quartet, *Gran Torso* (1971–72), is based on a series of oppositions such as "much effort" as opposed to "little effort" on the part of the performer, or instrumental actions that meet with much or little



Eigenzeit = Gesamtdauer

EXAMPLE 8: A SCHEMATIC DRAWING OF A *STRUKTURKLANG*, WHERE EACH DETAIL IS MORE OR LESS DIFFERENT, BUT THE WHOLE SHAPE CONSTITUTES ORDERED RELATIONSHIPS WHOSE *EIGENZEIT* IS THE TOTAL (REAL) TIME DURATION OF ITS UNFOLDING

("Klangtypen der Neuen Musik" in *Musik als existentielle Erfahrung*: 18)

resistance on the instrument. These stark oppositions, through which the energy and materiality of sound is conveyed, allow a listener to build a map in their mind onto which relationships can be drawn and the idea of a *Strukturklang* can be perceived.¹⁰ For example, consider the first phrase (mm. 1–7) of *Gran Torso* (Example 9).

ORDERED RELATIONS:

Line 1: a → b → c

Line 2: d → e → f

Line 3: g → h → g¹

Line 4: i → j

This opening phrase begins with the second violinist applying pressure while moving the bow hairs *vertically* up the string (*a*). One can hear this action in relation to the action at the end of the phrase by the same instrument (*c*). That is, the second violinist applies pressure but moves the hair of the bow *horizontally* across the strings. Between these two actions, we have the entrance of the cellist who applies much force in moving the wood of the bow obliquely up the strings (*b*). In other words, the bow is drawn vertically as well as given a bit of horizontal movement with the arm. A few moments later, the cellist's bow is obliquely drawn back down, an inversion of the cellist's original movement. So these three actions create a line across the phrase whose direction is determined by the transition from vertical to oblique to horizontal actions on the instruments, and whose energy is generated by the heavy effort (or pressure) required in producing them.

Against this line, we have those actions that require very little effort on the part of the performer. The light bowing by the second violin obliquely up the strings then across and then obliquely back down (*d*), as a kind of rhythmic augmentation of the preceding viola action. This light bowing sounds more the white noise of the bow hairs against the strings than the harmonics fingered by the left hand underneath. This is immediately imitated in the viola by a concatenation of the cellist's actions in the second measure; the violist lightly moves the wood of the bow obliquely up and then down the strings of the instrument (*e*). Finally, we have the flautato bowing up and down the strings by the cello (*f*), a kind of rhythmic diminution of the preceding viola action. So we have the following line whose direction is determined by a process of rhythmic contraction: (1) augmentation of viola action by the second violin, (2) the viola action and, finally (3) a diminution of the viola action by the cello. All three actions are unified by the light effort required to produce them, yet energy is supplied by an almost rhythmic alternation among the players between hair and wood of the bow.

What is the first violin doing? The action in the first violin (*g*) produces an energy discharge that extends at least through measure 23. The indication *knirschen auf Ruckwand* asks the performer to rotate the bow against the back of the instrument so that the sound of bow hairs grinding against wood is produced. This action could be called an action of *zero-degree* movement where there is neither horizontal nor vertical motion of the bow, simply a rotation of the bow and yet, in a sense, one can say that all other actions are formally derived from it. This action requires a good deal of pressure on the part of the performer. (Related to this action in measure 23, we have its augmentation theatrically. Instead of rotating the bow, the entire violin is rotated right side up so that the bow hairs lightly fall against the strings as the violin turns, preparing the violinist to play the violin in the normal fashion.)¹¹ Before the first violinist returns with the *knirschen auf Ruckwand* in measure 6 (*g*¹), the second violin drops the bow onto the strings with the arco balzando creating a new movement perpendicular to the instrument with very little effort (*h*). So a third ordering of relationships is created by actions that require neither horizontal nor vertical motions of the bow. The movement of energy in this line is suggested by the following alternation: much effort → little effort → much effort.

There is also a fourth ordering of relations that emerges in this first phrase with respect to left-hand actions. This line is defined by the opposition between a light left-hand pressure, as exemplified through most of the phrase with harmonics and half-harmonics (*i*), and a heavy left-hand pressure, such as the use of the *vibrato largissimo* in the second violin (*j*). The energy of this line is directed through a general increase in left-hand pressure.

In this first phrase of *Gran Torso*, there are several ordered relations defined by actions that require varying degrees of physical effort and varying directional movements on the instruments. These lines are placed in counterpoint with one another since they themselves are related by oppositions such as "light pressure" as opposed to "heavy pressure" or the "left-hand" as opposed to the "right-hand." But their combined energies direct the material forward toward a conclusion (m. 7) in an almost classical phrasing. This is why Lachenmann then defines musical structure as "polyphony of orderings."¹²

As a listener, one can begin to hear traditional categories such as pitch in new ways. For example, I hear the left-hand pitch with vibrato less in terms of pitch but rather in terms of the required effort to produce that pitch, which places it in the same "family," so to speak, as the overpressure bowing that immediately follows (m. 7). This allows

for seemingly incommensurable sounds “to be brought under one roof and made into a musical sense-unit—i.e., category of experience.”¹³ In other words, one becomes sensitized to the work behind phenomena, so that one hears pitch as a degree of human effort rather than as beautiful tone. Indeed, a *musique concrete instrumentale* refers not to Pierre Schaeffer’s sense of an acousmatic music where one forgets about the source of a sound and focuses only on the sound itself,¹⁴ but to the contrary focuses on the concrete musical experience of producing sounds on instruments. One hears the conditions under which a sound—or noise—action is executed, what materials and energies are involved and what resistances are encountered.¹⁵

Even when Lachenmann’s music arouses strong associations of “Nature,” suggestive of a non-intentionality, he does not present it as absolute, but in relation to its opposite, as structured sound. As a means toward this end, he creates a polyphony of ordered relations that allows for incommensurable elements (such as overpressure bowing and expressive vibrato on string instruments) to be projected onto the same temporal plane.

In listening to Lachenmann’s ordered relations or “arrangements,” one develops a sense of structure within his “instrument” (the composition) in the same way that a pianist, in arpeggiating the keys of the piano, demonstrates a sense of structure within the piano (for example, the scalar disposition of the keys), which is why he often refers to his composition (or “sound-structure”) as an extended “arpeggio.”¹⁶ Lachenmann proceeds from a serial aesthetic by searching for meaningful organizations of sounds whose logic of gradation is extended beyond a parametric representation of their acoustic characteristics into a more generalized logic of association that can refer to method of sound production, tonality, and other associations that lie outside of the composition (which he terms *aura*).¹⁷ However, his method of deconstructing sound is always dialectical in that the establishment of new orders, new relationships, implies that old orders have been negated in some way.

As an example of Lachenmann’s methodology for deconstructing sound, consider another passage from *Gran Torso* (mm. 103–116). A “negative climax” is reached at the beginning (m. 104) that manifests itself as an opposition between an extremely reduced set of materials and an expanded expressivity. This expanded expressivity is suggested by the “tempo rubato” indication. This extremely reduced material, as “white noise” produced by the viola and cello bowing the tailpiece of the instrument, emerges from a process of thematic unfolding, whereby gestures in the form of physical actions on the instruments

slowly dissolve to achieve a sense of growing stasis. The sound of bowing on the tailpiece has strong associations to wind and nature. Lachenmann gradually deconstructs this "natural" sound in order for a listener to hear it as a "denatured Nature" and thus to rediscover something familiar as something new. (See Example 10.)

A *schreiben* (i.e., writing) motion, produced by lightly wiping the bow across the strings in a back and forth oblique manner, approaches stasis by gradually dissolving the directional energies from the visceral thematic material at the beginning of the piece. The viola throughout the *schreiben* motion projects a very slow arpeggiation across the strings (mm. 81–103), occasionally exaggerating the arpeggio onto the wood (the rib) of the instrument (m. 95). This arpeggiation, as a single bow stroke across all strings, is slowly exchanged for a tremolo of many (down/up) bow strokes on a single string, ultimately performed on the tailpiece of the viola (m. 104). (See Example 11.)

In reducing the materials to a negative climax, Lachenmann uses that position as a "first principle" in order to slowly rebuild his sound world. This new construction is based on both a dialectical movement between oppositions and an examination of the means of sound production on the instruments. In measures 104–105, the viola's tremolo on the tailpiece, as discrete iterations, is foregrounded against the continuous bowing on the tailpiece of the cello, particularly since a large degree of dynamic expression is given to the viola. The presence of the viola is augmented when the cello drops out in measure 105. The continuous/discrete opposition that was presented by the cello and viola respectively in measure 104 is continued in the viola alone (m. 106). The slow tremolo in the viola that was identified as discrete iterations against the continuity in the cello (m. 104) is now perceived as continuous, in measure 106, because of the short impulses, also in the viola but performed by the left hand alone, that occur against the slow tremolo. The appearance of these short impulses in the viola (m. 106) also places the continuous/discrete opposition into the dimension of instrumentation whereby a single instrument exists as a plateau for opposing actions. The continuous/discrete opposition also gives rise, in measure 106, to the opposition of short/long durations.

Furthermore, providing each eighth-note with a different point of entry in measure 107 highlights the polyphonic nature of this event. The two discrete sixteenths in measure 106 trigger, in measure 107, their augmentation as two discrete eighths in the cello that are then expanded into a polyphonic manifestation of the eighth-note impulse in all instruments. Thus, solo instrument/ensemble is another opposition that is derived from the continuous/discrete one. Another opposition, fast/slow, is manifested by the fast tremolo of the second violin that refers back to the slow tremolo of the viola in the measures prior. (See Example 12.)

The image shows a musical score for flute, divided into two main sections: "Measured" and "Unmeasured (rubato)".

Measured Section: This section is marked with a tempo of $\frac{16}{4}$ and includes performance instructions such as "p", "pppp", and "v". It features a series of notes with stems and beams, and is annotated with "Foreground (discrete iterations/tremolo)".

Unmeasured (rubato) Section: This section is marked with a tempo of $\frac{16}{4}$ and includes performance instructions such as "p", "pppp", and "v". It features a series of notes with stems and beams, and is annotated with "Background (continuous bowing)".

Oppositions in play:

- (a) continuous/discrete
- (b) short/long
- (c) tremolo/non-tremolo
- (d) same time point/different time point
- (e) one impulse/many impulses
- (f) crescendo/non-crescendo
- (g) consecutive impulses/non-consecutive impulses
- (h) solo instrument/ensemble

Additional annotations include "Tonlage" and "p expressive auf Sackbläsern, intensiv strichen (siehe Besondere Anmerkungen)".

EXAMPLE 10

Helmut Lachenmann, *Gran Torso*, © 1972 by Musikverlage Hans Gerig, Köln (1980 assigned to Breitkopf & Härtel, Wiesbaden): mm. 103-104.

(Ab Fortsetzung)

7/0

I.

II

B.

C.

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000

1001

1002

1003

1004

1005

1006

1007

1008

1009

1010

1011

1012

1013

1014

1015

1016

1017

1018

1019

1020

1021

1022

1023

1024

1025

1026

1027

1028

1029

1030

1031

1032

1033

1034

1035

1036

1037

1038

1039

1040

1041

1042

1043

1044

1045

1046

1047

1048

1049

1050

1051

1052

1053

1054

1055

1056

1057

1058

1059

1060

1061

1062

1063

1064

1065

1066

1067

1068

1069

1070

1071

1072

1073

1074

1075

1076

1077

1078

1079

1080

1081

1082

1083

1084

1085

1086

1087

1088

1089

1090

1091

1092

1093

1094

1095

1096

1097

1098

1099

1100

1101

1102

1103

1104

1105

1106

1107

1108

1109

1110

1111

1112

1113

1114

1115

1116

1117

1118

1119

1120

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1131

1132

1133

1134

1135

1136

1137

1138

1139

1140

1141

1142

1143

1144

1145

1146

1147

1148

1149

1150

1151

1152

1153

1154

1155

1156

1157

1158

1159

1160

1161

1162

1163

1164

1165

1166

1167

1168

1169

1170

1171

1172

1173

1174

1175

1176

1177

1178

1179

1180

1181

1182

1183

1184

1185

1186

1187

1188

1189

1190

1191

1192

1193

1194

1195

1196

1197

1198

1199

1200

1201

1202

1203

1204

1205

1206

1207

1208

1209

1210

1211

1212

1213

1214

1215

1216

1217

1218

1219

1220

1221

1222

1223

1224

1225

1226

1227

1228

1229

1230

1231

1232

1233

1234

1235

1236

1237

1238

1239

1240

1241

1242

1243

1244

1245

1246

1247

1248

1249

1250

1251

1252

1253

1254

1255

1256

1257

1258

1259

1260

1261

1262

1263

1264

1265

1266

1267

1268

1269

1270

1271

1272

1273

1274

1275

1276

1277

1278

1279

1280

1281

1282

1283

1284

1285

1286

1287

1288

1289

1290

1291

1292

1293

1294

1295

1296

1297

1298

1299

1300

1301

1302

1303

1304

1305

1306

1307

1308

1309

1310

1311

1312

1313

1314

1315

1316

1317

1318

1319

1320

1321

1322

1323

1324

1325

1326

1327

1328

1329

1330

1331

1332

1333

1334

1335

1336

1337

1338

1339

1340

1341

1342

1343

1344

1345

1346

1347

1348

1349

1350

1351

1352

1353

1354

1355

1356

1357

1358

1359

1360

1361

1362

1363

1364

1365

1366

1367

1368

1369

1370

1371

1372

1373

1374

1375

1376

1377

1378

1379

1380

1381

1382

1383

1384

1385

1386

1387

1388

1389

1390

1391

1392

1393

1394

1395

1396

1397

1398

1399

1400

1401

1402

1403

1404

1405

1406

1

Foreground: full ensemble/
solo viola
Background: tremolo/non-tremolo

Foreground: tremolo/non-tremolo
Background: full ensemble/solo viola

arco hihat
Contra-Bass
(Zangs)

arco hihat
Contra-Bass
(Zangs)

arco hihat
Contra-Bass
(Zangs)

arco hihat
Contra-Bass
(Zangs)

1 instrument manifesting continuous/discrete opposition

same duration/
 different time point

different duration/
 same time point

different duration/
 different time point

same duration/
 same time point/
 all three tremolo

1/4 2/4 3/4 4/4 5/4 6/4 7/4 8/4 9/4 10/4 11/4 12/4

a tempo
 156 ca

foreground
 background

106.

Note: As the duration of the two violins and cello approach the duration of the viola, the short/dong opposition is backgrounded and the tremolo/non-tremolo opposition is foregrounded, particularly since the two types of oppositions are placed in succession.

EXAMPLE 12

Helmut Lachenmann, *Gran Torso*, © 1972 by Musikverlage Hans Gerig, Köln (1980 assigned to Breitkopf & Härtel, Wiesbaden): mm. 106-113.

Thus, measure 106 presents the beginning of a process where an initial opposition engenders further oppositions not necessarily in a linear sequence. The "continuity" of the continuous/discrete opposition is a link to the short/long opposition (i.e., the short versus long impulses on the same—continuous—instrument, the viola). The "short" of the short/long opposition is a link to the tremolo/non-tremolo opposition (i.e., the short sixteenth impulse in measure 106 augments to the eighth impulse in the viola in the next measure, triggering the other eighth note impulses, one of which is tremolo, in the remaining instruments in m. 107), which then collapses back to the continuous/discrete opposition (i.e., between the viola tailpiece action and the other instruments in m. 107). However, this collapsing recontextualizes the original opposition where the slow tremolo continued in the viola, once perceived as discrete, is now perceived as continuous against the discrete impulses in the other instruments. Indeed, the crux of Lachenmann's dialectical process lies in the *relativization* of parametric thinking, where a given parameter can always turn into its opposite depending upon how that parameter is contextually heard.

OPPOSITIONS IN PLAY IN MM. 106–115:

- (a) continuous/discrete
- (b) short/long
- (c) tremolo/non-tremolo
- (d) same time point/different time point
- (e) one impulse/many impulses
- (f) crescendo/non-crescendo
- (g) consecutive impulses/non-consecutive impulses
- (h) solo instrument/ensemble

In measure 107, a maximum differentiation between the number of oppositions present occurs between all four instruments: *continuous/discrete*, *short/long*, *tremolo/non-tremolo*, *same time-point/different time-point*, *one impulse/many impulses* (which exists in both the tremolo of the second violin as well as the discrete impulses of the cello, thus collapsing this particular opposition into others), *consecutive/non-consecutive impulses*, and *crescendo/non-crescendo*. Some of these oppositions are foregrounded over others due to the dynamic markings, as well as their quantity or uniqueness of appearance. In measure 108, the perspective shifts as focus is placed upon a single discrete impulse from the prior measure. In this case, the point of entry (i.e., time point) is the same, yet the duration is different: in one voice, the duration is increased by a sixteenth, and, in the other, it is decreased by a sixteenth. Both impulses have tremolo, which creates opposition to the viola. Yet a dynamic expressivity through the

crescendos links the first violin with viola and opposing both to the second violin. Furthermore, in measure 108, the fast tremolo is emphatically stated in the violins obfuscating the slow tremolo in the viola in measures 107–08, since the viola only performs a single bow movement in each measure (i.e., either down or up), thus causing the viola to momentarily be perceived in the category of non-tremolo.

In measures 109–10, all instruments begin to approach the viola with long durations that blur the metric boundary, precipitating further differentiation between the other three instruments: each instrument begins at a different time point and lasts for a different duration. Yet the opposition between viola and the other instruments is maintained by the presence of the tremolo. What existed prior as long duration with slow tremolo versus short duration with no tremolo, now transitions, through long duration with no tremolo versus short duration with fast tremolo, to long duration with no tremolo versus long duration with fast tremolo.

long duration + slow tremolo/short duration + non-tremolo →
(m. 106: vla. right hand/vla. left hand)

equal duration + tremolo/equal duration + non-tremolo [or simply,
tremolo/non-tremolo] →
(m. 107: vln. 1/cello, vln. 2, vla. left hand)

long duration + non-tremolo/short duration + fast tremolo →
(m. 109: m. 108: vla./vln. 1 and 2)

long duration + non-tremolo/long duration + fast tremolo [or
simply, *non-tremolo/tremolo*]
(mm. 109-110: vla./cello, vln. 1 and 2)

Thus, accompanying each opposition is a link that creates both a new opposition as well as a collapsing back into a previous one. This elasticity in the movement between oppositions is a formally expanded perspective on the earlier elasticity found in the *tempo rubato* of the solo viola. Furthermore, the alternation between measures indicated by a tempo rubato and a fixed tempo represents a formally expanded view of the slow tremolo introduced by the viola (i.e., as the alternation between down and up bow).

The long duration with tremolo in measures 109–10 where the continuous (long duration) and discrete (iterative tremolo) overlap provides a link to a new opposition. This opposition, found in measures 109–10

and 112, occurs between rhythmic unison (i.e., same time-point and same duration) and rhythmic diversity. The rhythmic unison in measure 112 provides a link to measure 115 where all instruments but the viola also perform in rhythmic unison. However, rather than a long duration with tremolo and crescendo (or diminuendo), the three instruments perform short durations with no tremolo and no crescendo (or diminuendo). This presence of discrete impulses gives rise to yet another opposition. Rather than two discrete sixteenths separated by a rest (m. 106), there are now two consecutive discrete sixteenths, yielding the opposition consecutive/non-consecutive impulses. This last opposition further expands the concept of rhythm that is slowly constructed in these measures by adding the notion of *sequence* to that of duration, iteration, and time-point. What is perceptually fascinating about the iterative impulses in measure 115 is the fact that they precipitate the cello reentry by continuously bowing the tailpiece so that the continuous/discrete opposition can clearly manifest itself again between the viola and cello. However, unlike the first instance in measure 104 where the cello is perceived as background to the slow tremolo in the viola, the viola now appears as background to the cello because of the cello's reemergence, thus inverting the listener's perspective. (See Example 13.)

From these thirteen measures, Lachenmann carefully assembles energy through the various parameters of rhythm—a *Strukturklang*—to renew our sense of listening so that we come to hear the slow bowing on the viola tailpiece as a sound once associated more with “natural phenomena” now heard as expressive tone, albeit an alienated one, placing the idea of an unmediated “Nature” into doubt.

Lachenmann's idea of a *Strukturklang* is thus essential to his compositional thinking. On the one hand, it represents his loose adherence to a serial thinking as inherited particularly by Stockhausen, where a sound texture's details are governed by ordered relations that situate it with respect to a larger temporal framework. These relationships, between the physical energy of sounds—as well as their accompanying instrumental actions—and their phenomenal qualities (ranging from discrete, or “perforated,” to continuous sound textures), unfold in a consequential way that depends upon a specific temporal unfolding. It is precisely through this unfolding that Lachenmann develops the idea of a “polyphony of configurations” as the juxtaposition of “families of sounds” (including “families of families of sounds”): sounds, or groups of sounds, of varying individuality that act together as components with reference to a superordinate character defined by their quantitative temporal deployment.¹⁸

Short/long distinction is foregrounded again

7 tempo rubato (wie ab Takt 104)

7 7 7 7 7 7 7

I

II

B

C

144.

Background (The perspective is inverted from m. 104)

Foreground

same duration/
no crescendo/
no tremolo/
consecutive impulses/
same time point

EXAMPLE 13

Helmut Lachenmann, *Gran Torso*, © 1972 by Musikverlage Hans Gerg, Köln (1980 assigned to Breitkopf & Härtel, Wiesbaden): mm. 114–116.

Lachenmann's *Strukturklang* also implies tonal remnants from which a sound texture's temporal unfolding engages with the rhetorical qualities of music. In his essay "Conditions of the Material," Lachenmann cites four fundamental dispositions that belong together in his music: tonal, sensual, structural, and existential.¹⁹ These four aspects are later developed in his article "On Structuralism" and amended to tonality, acoustic-physical experience, structure, and aura.²⁰ The sensual (acoustic-physical) and the structural are merged into the idea of a *Strukturklang* by embedding the phenomenal aspects of sound experience (including its purely acoustical parameters) into a quasi-serial framework of "ordered juxtapositions." Lachenmann's "existential" aspect becomes *aura*, the realm of associations (such as church bells with certain percussion instruments or the evocation of traditional musical materials), where "preexistent existential structures" are absorbed within a *Strukturklang* causing it to abandon its "self-containment" and to refer to things outside of itself.²¹ It is precisely the fluid confrontation between these "preexistent existential structures" and the structures imposed by the composer that Lachenmann refers to as *dialectical structuralism*.²²

Yet it is the tonal aspect that most readily sheds light upon the nature of a *Strukturklang*, as explained in more detail in "Conditions of the Materials." Indeed, for Lachenmann, the tonal aspect refers to the "emphatic gesture"—as directed energy—including the "dialectical mechanism of tension and release," rhetorical aspects that are brought to fruition in such late works as his large ensemble piece *Concertini*.²³ These rhetorical (and expressive) qualities feed a composition's dialectical tensions between what Lachenmann refers to as "discursive text" and "situation" or, rather, between music as discourse and phenomenal aspects of sound experience.²⁴ These phenomenal aspects are exemplified in each composition by such moments as the un-conducted passages in his orchestral work *Schreiben* where performers play according to their "own time" yielding an almost Cageian atmosphere, or the sounds of thunder-sheets in *Schwankungen am Rand*, the splashing of water in *Kontrakadenz*, the endlessly repeated highest key on the piano with pedal depressed exemplifying a piano's resonant qualities in the cadenza for his piano concerto *Ausklang*, the motorized bell keyboard evoking a mechanical alarm in *Mouvement (-vor der Erstarrung)*, the recorded Mozart excerpts that surprisingly confront the performer in the clarinet concerto *Accanto*, or a bowed wooden tailpiece on the viola in *Gran Torso*. In other words, it is "situations" that elicit a heightened perception of a sound texture's *aura*, bringing forth a different kind of listening than the more

rhetorical qualities of the music. Lachenmann's *Strukturklang* recuperates these rhetorical qualities from tonal music with a structural thinking from the post-war generation of serial composers in order to create an expressive language always mediated by the materiality of sound and sound production.

NOTES

1. Helmut Lachenmann, "Klangtypen der Neuen Musik" in *Musik als existentielle Erfahrung: Schriften 1966–1995* (Wiesbaden: Breitkopf & Härtel, 1996): 1.
2. Ibid.: 8.
3. Ibid.
4. Ibid.: 3–4.
5. Ibid.: 3–7.
6. Ibid.: 10.
7. Ibid.: 8.
8. Ibid.: 17.
9. Ibid.: 18, 20.
10. Ibid.: 17.
11. Ibid.: 3.
12. Ibid.: 18.
13. Lachenmann, "On Structuralism," *Contemporary Music Review*, Vol. 12, Part 1 (1995): 98.
14. Pierre Schaeffer, "Acousmatics" in *Audio Culture: Readings in Modern Music*, Chris Cox and Daniel Warner (eds.), (New York: Continuum, 2008: 77).
15. Paul Steenhuisen, "Interview with Helmut Lachenmann—Toronto, 2003," *Contemporary Music Review*, Vol. 23, No. 3/4 (September/December 2004): 9–10.
16. Lachenmann, "Hearing [Hören] is Defenseless without Listening [Hören]: On Possibilities and Difficulties," (trans. Derrick Calandrella *Circuit: musiques contemporaines*, Vol. 13, No. 2 (2003): 33, 36.
17. Lachenmann, "On Structuralism": 98.
18. Lachenmann, "Bedingungen des Materials: Stichworte zur Praxis der Theoriebildung," in *Musik als existentielle Erfahrung*: 36.
19. Ibid.: 35.

20. Lachenmann, "On Structuralism": 98.
21. Lachenmann, "Bedingungen des Materials": 46.
22. Lachenmann, "On Structuralism": 100.
23. Lachenmann, "Bedingungen des Materials": 35.
24. Abigail Heathcote, "Sound Structures, Transformations, and Broken Magic: An Interview with Helmut Lachenmann" in *Contemporary Music: Theoretical and Philosophical Perspectives*, Max Paddison and Irène Deliège (eds.), (England: Ashgate Publishing Limited, 2010): 334.