Russell, Bertrand. 1919. *Introduction to Mathematical Philosophy*. London: G. Allen & Unwin, Ltd.

Snow, C. P. 1964. *The Two Cultures: and a Second Look*. Cambridge: Cambridge University Press.

Sterelny, Kim, and P. E. Griffiths. 1999. *Sex and Death: An Introduction to Philosophy of Biology*. Chicago: University of Chicago Press.

Vuza, Dan Tudor. 1991-93. "Supplementary Sets and Regular Complementary Canons." *Perspectives of New Music* 29/2: 22-49; 30/1: 184-207; 30/2: 102-125; 31/1: 270-305.

Whitehead, Alfred North. 1929. *The Aims of Education*. New York: Macmillan Company.

The "Sweet Spot": What Composing Has Taught Me about Teaching Theory*

I entered the field of music theory through what used to be one of the main entrances, but has become increasingly a side, if not back, door. My training was as a composer, and most of my work outside of teaching, especially in the past few years, has been writing, rather than writing about, music. I mention this because I realize that my work as a theorist has been somewhat skewed: I have concentrated on two complementary (and some may say self-serving) interests, the study of music whose techniques and ideas I want to try out in my own; and the advocacy of, if not my music, then at least my kind of music. (I hasten to add that I have learned from and have advocated for a far broader range of musical styles and languages than I have the skill, interest, or courage to write in myself. Nevertheless, I confess that my tastes and enthusiasms have always informed what I've taught and been taught by.) Thus, in participating in *Intégral*'s millennial celebration, while I don't feel positioned to comment on directions new or old in the field of music theory, I would like to share some of the insights I have

* I am grateful to Gregory Marion and Benjamin Broening for their comments on earlier drafts of this paper.

gained from teaching the subject while contributing to the objects of its inquiry.

I have found it useful (if not particularly original) to think of composition as performance, as a complex act undertaken within a set of constraints, both consciously and unconsciously self-imposed, during which marvelous things may happen.[1] It is handy to compare this view not only with playing music, but with other arenas of human performance as well. The world of athletics offers some excellent parallels, as do various kinds of games. While competition may seem to be the principal impetus for sports or games, I think that much of the pleasure that people derive from watching and playing comes from a visceral and intellectual reaction to the beautifully executed—the brilliantly opportunistic, the subtly insightful—response to unfolding events. And what makes such response possible is the interaction between the rules of play and the imagination of the players.

What this viewpoint has offered me as a composer is a chance to think about the nature of those constraints I work under, and

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[1] Composition as performance is in effect one more version of hearing as performance, an idea that underlies the work of a wide range of theorists both today and historically. The work of Fred Everett Maus, Joseph Dubiel and Marion Guck (to mention just a few musicians) all variously reflect this notion, as do the writings of Donald Francis Tovey and, in his own way, Heinrich Schenker. Dora Hanninen's theory for context-sensitive music analysis is both broad and finely-grained in its approach to hearing, detailing in sophisticated ways how listening can be understood as an analytical act committed by the receptor of music. Accounts of this last may be found in "Orientations, Criteria, Segmentations: A General Theory of Segmentation in Music Analysis" (*Journal of Music Theory* 45/2 (2001): 345-433); her dissertation, "A General Theory for Context-Sensitive Music Analysis: Applications to Four Works for Piano by Contemporary American Composers," (Ph.D. dissertation, University of Rochester, 1996); and most fully developed in her book, *A General Theory for Context-Sensitive Music Analysis* (forthcoming, University of Rochester Press, Rochester, New York). And of course composition as performance is fundamental to jazz, as is the whole mechanism of appreciation I outline below. Unfortunately, when it comes to notated music, I frequently encounter a variety of myths and misconceptions placing its making either totally in the composer's subconscious ("a gift from God"), considered a good thing, or coldly calculated by the intellect, a bad thing. As human action, neither strikes me as particularly interesting, or recognizable as a part of the music I enjoy.

what they should and should not—and could or could not—provide. While it is not important here to detail my own chosen rulebooks, I can say that their calibration is one of the most critical acts of composition: too constrained, and each act overly determines what follows; too free, and no act has any consequence. Too coarse or too fine, and I find either no reason, or no room, for responding to contingencies. Finding the right balance, however—finding the "sweet spot"—can put me in a position of enormous compositional leverage, and can lead to wonderful opportunities for musical play.

I am not interested here in talking any more about my own composing, but I want to suggest how this framework has affected my thinking about other music. I make no claims to insights into how other musicians might have thought about their work, nor do I consider any of the examples here to be particularly original, but this framework helps me both conceive and teach musical practice as an unfolding conversation, both with oneself and with other musicians.

Central to this point of view is developing a sense of what makes a moment or a passage or a piece special. This involves being able to sort out the particulars from the norms, to separate what is specific to the music in question from what's "off the shelf." It is perfectly true, for example, that many compositions in minor keys move to VI at some point, particularly near the end in setting up a final cadence. But what makes Beethoven's little move to A♭ near the end of the last movement of the C minor Piano Sonata, Op. 13, magical for me is not merely that it provides (at last!) some displaced closure to the middle section of the movement (all of whose phrases, until the last, cadence either on or in the dominant of A♭, only to be deflected in the last to a big dominant preparation for the return of the C minor refrain) or that it carries the motive of the movement, but that the register and spacing of the chord are exactly those that open the work's emblematic A♭ second movement.

Part of the task is recognizing at what scale of contextual framing one can gain appreciation for a good move. For me, the well-known recurring G major fragment in the third movement of

Beethoven's "Hammerklavier" sonata, Op. 106, lies at the center of a series of rings of delight, radiating like ripples from a pebble tossed in a pond: it is a pretty little tune in itself; its open spacing is a nice contrast to the closed spacing of the preceding passage; its harmonic role is the always intriguing ♭II, and its ever more airy articulation contradicts my rich, high-calorie, chocolaty associations with the ♭II function (mmm—flats!); its own use of a neighboring IV move for expansion pulls me even farther away from the local tonic. Beyond the most immediate context, I like to recognize associational connections with G major passages in surrounding movements which arise from more diatonically normative functions ("What's a nice key like you doing in a place like this?");[2] the fact that I am hearing G, in my sense of this historical context a fairly bright key, acting in the role of ♭II, usually arising from way on the flat side of things[3] is itself striking (and combines with the airy

[2] This brings up still further questions, such as the relationship between the key of the third movement (written as F♯, but possibly understandable as an easier way of reading G♭ minor) and the B♭ key of the other movements. If it is understood as minor ♭VI, that would make more sense on the face of it than ♯V, but would blur (through enharmonic equivalence) the associational power of G between movements; further, I hear (or at least like to hear) the G♭ major triad reached through falling thirds right near the beginning of the introduction to the final movement as really far away from the F♯ major triad that ends the third movement. Also, the extra bar Beethoven added at the beginning of the movement—A, C♯ in bare octaves—allows me to construe F♯ as F♯ from the previous movement's close in B♭ (A sounding like a step down from B♭, not the lowering of a given scale degree). Since this is happening within equal temperament, one might argue that the question is moot, but even in this context, the nature of a move can make the same place sound startlingly different in different contexts.

[3] For example, I find the Neapolitan moves in Beethoven's "Appassionata" sonata, Op. 57, or in his F minor String Quartet, Op. 95, to be dramatically different in color and quality from the one here in the third movement of Op. 106. Imagining the opening of Op. 57 in F♯ minor would change that piece dramatically for me, as would imagining the slow movement of Op. 106 in F minor, even without considering its relationship with the remainder of the work. I can't claim perfect pitch for these reactions, so one might argue that I am kidding myself, but part of my knowing these pieces comes from the keyboard, which provides its own kinesthetic picture of the music, along with an interesting way of contextualizing pieces in various keys by key-feel.

open spacing to add to the *frisson* of the passage), and jogs my memories of other like passages, both earlier (the slow movement of Mozart's piano concerto K. 488, also in F♯ minor with a striking use of ♭II) and later (the ringing, open cello string spacing of the ♭II passage in Chopin's B-minor prelude).[4]

Appreciating Beethoven's performance in Op. 106, then, involves me in just the sort of attention to moments, their contexts and contingencies, their histories and their consequences, that the dedicated sports fan routinely engages in. And this comparison opens up still more possibilities. From this point of view, much of J.S. Bach's music takes on a quality of "Watch this!" For example, by setting himself the challenge of opening this week's cantata with a movement that will work both as a chorale setting and a concerto movement, and perhaps also display certain snazzy contrapuntal devices, while at the same time setting a text in a meaningful way (and maybe throwing in a nice solo violin obbligato), he can remind me of Babe Ruth pointing to some specific spot in the stands where he will hit a home run. Beethoven (again!) in sets like the "Razumovsky" quartets, Op. 59, or the last three piano sonatas, can seem to be playing out a certain set of issues ("What are all the ways I can treat repetitions in a sonata-allegro movement?"; "What happens if I throw the weight of a composition into the final movement?") like any number of brilliant athletes searching out the implications of their chosen arenas of action. Wayne Petty has

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[4] Some of this certainly falls under the kind of knowledge of musical conventions that many listeners bring to their experience, and certainly Peter Schickele has made a career out of playing against this. The humor at the cadenza in his alter-ego's *Concerto for Piano vs. Orchestra* (by P. D. Q. Bach) is not merely that the orchestra plays it, in a horrific Ivesian blat, but that anyone with some experience listening to the Mozart concertos can hear the gag coming: one can hear several bars before it happens that the soloist is going to play the cadential $\frac{6}{4}$ chord, and one braces for the ensuing ruckus. That's all well and good, and pretty broad. What I would hope for, in terms of hearing play with conventions, would be (to use another cadenza) how Beethoven's late cadenza for the first movement of his own Piano Concerto No. 2 in B♭ sweeps aside the work's conventions first by breaking the registral boundaries set by the limitations of his earlier pianos, and then revises the rhythm of the placement of the closing cadence, changing drastically the feel of the closing ritornello.

recently written about Brahms' elegant solution to what seemed in a lesser colleagues hands an utterly hopeless situation,[5] and I've written elsewhere about Milton Babbitt's habits of revisiting and responding to the individualities provided by reoriented materials.[6] In this framework, it is not hard to imagine musicians checking out each other's game, in addition to perfecting their own. Those last piano sonatas of Beethoven (not to mention the "Hammerklavier" sonata and a bunch of other works of that period) can be heard as taking on both the *Well-Tempered Klavier* and the *Goldberg Variations*, just as Webern's *Variations*, Op. 27 can seem to be taking on at least the first and last of those sonatas.[7]

Obviously there are many ways that this analogy with the world of sport breaks down; I mentioned the question of competition above, and I can also mention the whole issue of just what the "rules" are, and who gets to set them.[8] In the case of music-making, it is largely the players themselves who do that, but

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[5] Wayne C. Petty, "Brahms, Adolf Jensen and Problem of the Multi-Movement Work," *Music Analysis* 22/1-2 (2003): 105-137.

[6] See, for example, Chapter 2 of Andrew Mead, *An Introduction to the Music of Milton Babbitt* (Princeton: Princeton University Press, 1994).

[7] Several theorists have dealt with the issues of influence, notably Kevin Korsyn, in "Towards a New Poetics of Musical Influence," *Music Analysis* 10/1-2 (1991): 3-72. See also Joseph Straus, *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition* (Cambridge, MA: Harvard University Press, 1990), and Lloyd Whitesell, "Men with a Past: Music and the 'Anxiety of Influence'," *19th-Century Music* 18/2 (1994): 152-167. This last work posits an interesting variety of relationships between composers and their predecessors.

[8] One particularly interesting difference is that composers can go back and replay games of their youth. I am glad to have both versions of Brahms' piano trio Op. 8, although it alters my sense of the final version in a disquieting way. Getting to know the earlier version of the piece makes those places in the revision where the older composer made radical changes take on an air of almost violent remodeling ("Step aside, kid; let me show you how"). This in turn reminds me of the story of Michelangelo wrenching a wax model by Giambologna into a design of his own as a sort of malignant lesson for the younger sculptor (James Fenton used this tale to open the first of his Oxford Lectures, published as *The Strength of Poetry* (New York: Farrar, Straus and Giroux, 2001)). What makes the Brahms example even more disturbing is that he was performing this act upon his younger self. While the older composer's sense of where his younger self went wrong seems absolutely right, the changes themselves seem harrowing in their energy and breadth.

in a real sense, a composer's decision to work within a set of constraints is not that dissimilar to a group of card players picking their game, or a golfer choosing a course; and one aspect of rule selection that does carry over in interesting ways is the question of the time lag between the change of constraints or conditions and players' taking advantage of the altered contingencies.[9] A case in point is the adoption of equal temperament, which, by closing the circle of fifths, changed tonal space from an open spiral to a world that could be imagined in terms of various equally spaced partitions of the octave. What started as perhaps a convenience within which distinct but close differences could still be approximated and whose implications could still be respected, would over time be reinterpreted to allow the exploration of all sorts of enharmonic interplay (not to mention "composition with twelve tones related only to one another").[10] While equal temperament might allow one the substitution of ♭$\hat{5}$ (as in the seventh of V/♭II) for ♯$\hat{4}$ (as in an augmented sixth chord), it would take until Schubert to make this a routine move.[11] And even after Liszt, Wagner and Tchaikovsky made moving through the octave by minor or major third feel like a normal means of traversing tonal space, I wince every time National Public Radio's *All Things Considered* tune forces me instantaneously to reinterpret ♭$\hat{6}$ as ♯$\hat{5}$.

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[9] Examples abound in sport; Gregory Marion offers the example of the change in height of the pitcher's mound in Major League Baseball, effectively renegotiating the strategic and tactical roles of pitcher and batter, and in turn the play of the game as a whole. On another front, changes in materials in various sports have taken from a single season to a number of years to be utilized in their most effective ways. One may think of the advent of Astroturf in football; or the changes from wood to fiberglass, cotton to Dacron, and the introduction of Kevlar and carbon fiber—not to mention the advent of the viable multihull—in boat racing; or the development of the mountain bicycle, to mention just a few examples.

[10] Arnold Schoenberg, "Composition with Twelve Tones," *Style and Idea*, ed. Leonard Stein, trans. Leo Black (London: Faber and Faber, 1975): 218.

[11] Some of my questions concerning key identity in Beethoven's Op. 106 arise from the lag between the use of equal temperament and the sense of how tonality works, especially at the enharmonic boundary. I am grateful to Karl Schrock for a number of conversations about this issue.

This way of thinking about music informs how I teach in many ways. I want to help my students locate for themselves the "sweet spot" in their own musical engagement, whether they are trying to develop an appreciation for others' musical play, or develop their own "game," either as performers or composers. But there is one aspect of the analogy with appreciating athletics I have found particularly liberating, especially when confronting the perennial questions about intellectual involvement with music. By thinking of composition as performance, and by situating appreciation and pleasure in the adroit negotiation of the "rules of play," a student may begin to see the desirability of thinking about those rules. No one questions this in sport: a hockey game may be viscerally exciting to the naïve viewer (guys on knives with sticks at 40 miles per hour!) but only a sense of the purpose and constraints of the game can allow one to grasp what is unfolding so rapidly, and this in no way removes the visceral thrill. Nor does anyone question the value and pleasure to be gained from all sorts of analytical acts, either dealing with specific matches, or with the nature of the rules of play (ask any baseball fan about the designated hitter rule).[12] But music, for various reasons, is often seen as something one ought already to know, or as something whose pleasures will wither under inspection.[13]

If there is one thing I could choose to do with my teaching, it would be to change what I think is an attitude that has deprived listeners, players and composers alike from an enormous amount of musical pleasure. And if there is one thing I have found through my composing, it is the pleasure that can be had from making a good move, seizing the unforeseen opportunity, creating situations in which such opportunities can arise. This same sort of pleasure informs my appreciation of others' musics, and motivates my

[12] Watching all of the analysis, during a game and after, reminds me in a strange way, of what theorists do at conferences.

[13] Then too, my central analogy might strike some people as a little crass, like hearing the opening of Beethoven's Op. 97 played like "Hail to the Victors."

teaching. By giving students a framework for understanding music in this way, I hope to enhance their musical pleasure, and by showing them an example of such appreciation in something as familiar as the sports pages, I hope to show them that nothing I'm asking them to do is particularly abstruse. Often, it is enough to give them permission to think about music, and when that happens you can almost see the light bulb go on.

Andrew Mead

The Dialogue of Past and Present: Approaches to Historical Music Theory*

In this essay, I wish to make a series of claims for the centrality of the study of historical music theory to the discipline of music theory as practiced today. These claims go well beyond the usual role accorded to history of theory. They are claims which are dependent in no small sense on work that I am presently engaged in: a study that uses four carefully selected historical moments as the basis for exploring the nature of thinking about music and the ways in which musical knowledge is transmitted and transformed in specific cultural contexts. These "moments" range widely from Greek theory into Arabic and Latin in the Middle Ages, to Renaissance dialogue, to Anglo-American translations of theoretical texts in the nineteenth century, to recent trends, especially neo-Riemannian theory. The study traces points of contact between

* An earlier version of these remarks was formulated for the concluding plenary session of the first Mannes Institute for Advanced Theoretical Studies which focused on Historical Music Theory (June 2001). I am grateful to Wayne Alpern for inviting me to participate as a faculty member in the Institute, and to my fellow participants, whose lively discussions pushed me toward articulating the position I argue here.