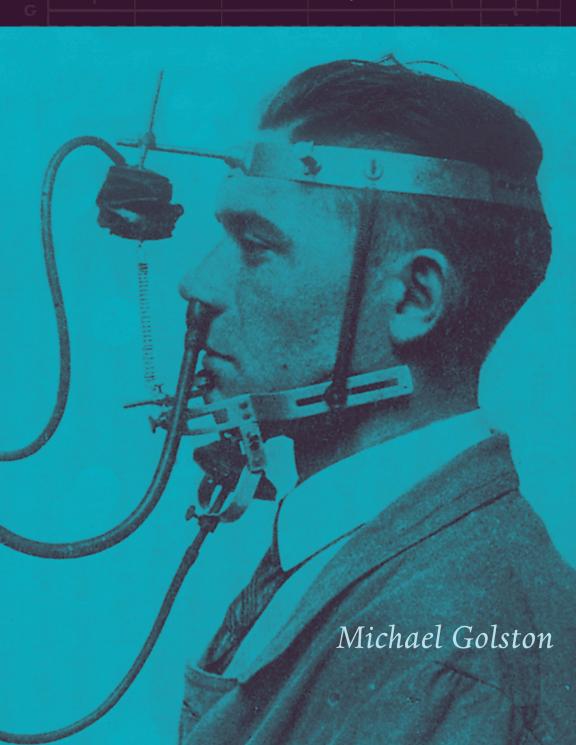
RHYTHM and RACE in MODERNIST POETRY and SCIENCE



кнутнм	AND RACE	IN MODERI	NIST POETR y	AND SCIENCE

Michael Golston

Columbia University Press

New York

RHYTHM AND RACE IN MODERNIST POETRY AND SCIENCE



COLUMBIA UNIVERSITY PRESS Publishers Since 1893 NEW YORK CHICHESTER, WEST SUSSEX

COPYRIGHT © 2008 COLUMBIA UNIVERSITY PRESS ALL RIGHTS RESERVED

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA
Golston, Michael.

Rhythm and race in modernist poetry and science $\slash\,$ Michael Golston.

Includes bibliographical references and index.

ISBN 978-0-231-14276-2 (cloth : alk. paper) — ISBN 978-0-231-51233-6 (ebook)

I. American poetry—20th century—History and criticism. 2. Modernism (Literature).

3. Pound, Ezra, 1885–1972—Knowledge—Science. 4. Williams, William Carlos, 1883–1963—

 $Knowledge \hbox{---}Science.\ 5.\ Yeats,\ W.\ B.\ (William\ Butler),\ 1865\hbox{---}1939\hbox{----}Knowledge} \hbox{----}Science.\ 6.\ Rhythm \hbox{-----}$

Political aspects. 7. Racism in literature. 8. Literature and science—History—20th century.

9. Politics and literature—History—20th century. I. Title.

PS310.M57G66 2007

811′.5209112—dc22

2007021125



COLUMBIA UNIVERSITY PRESS BOOKS ARE PRINTED ON
PERMANENT AND DURABLE ACID-FREE PAPER.

THIS BOOK IS PRINTED ON PAPER WITH RECYCLED CONTENT.

PRINTED IN THE UNITED STATES OF AMERICA

C 10 9 8 7 6 5 4 3 2 1



All the mortalities merge in the definition of "rhythm"

—Lyn Hejinian, The Cell

CONTENTS

List of Illustrations xi
Acknowledgments xiii

Introduction: Phonoscopic Modernism 1

Thaddeus Bolton and the Omnipresence of Rhythm 12
Mapping Rhythmic Bodies 19
Rhythm, Blood, Pulse, Heredity 26
Rhythm, Nation, Race 29
Nietzsche, Wagner, Spengler, Jung 34
Rhythm and/as Political Ideology: Germany in the 1930s 40
Rhythm and Constructing the Fascist Subject 42
Summary by Carl Seashore 43
Rhythmics in Modernist Poetics 47
Racial Origins of Prosody 54

1. Pulsanda Tellus: Ezra Pound's Absolutist Rhythms 59

The Root of the Matter 59
Invisible Motors 64
Pisan Symmetries 73
The Dancer and the *Corpus* 79
We Who Have Passed Over Lethe 89

2. Double Registrations in the River of Blood

Primalities 103 Amphibious Centaurs Rivers of Blood III A Sort of Eugenic Paganism Ripples, Spirals, Fat Lines: Rhythmical *Hormonies* 128 Inaudible Codes: Structuring the Corporate Text 137 Codifying Political Bodies

3. Machining Convictions: W. B. Yeats's Sanguineous Rhythms

"The subject of which I am most ignorant" Monotonous Fire 149 The Bull and the Nightingale Haunting the Edge of Trance 155 Ancient Salt 158 Those Images That Waken in the Blood 164

4. Singing the Crisis Itself 169

Cinematic Reversals; or, the Ghost of Abel in the Whale's Belly Bad Breath and Ghost Limbs 177 Agents of Intensity Unrocking to a Pulse 182 Auguries of the Inaudible: Strange Hearts and Wing Beats What Magic Drum? The Rhythms of Mummies, Vampires, Centaurs, and Butterflies 193 Alexander and the Books of Prosody

Williams's Measured Interventions

Measuring the Weather with Euclid and Einstein Angelic Cubes and Cubist Angels

Notes 225 Bibliography 255 Index 267

ILLUSTRATIONS

o.i. Phonoscope 2
o.2. Wundt's chronograph 13
o.3. Sanford's apparatus 14
o.4. Lund's player piano, 1939 25
o.5. Eurhythmics dancer 30
o.6. Eurhythmics dancer 31
o.7. Seashore's negro laugh 38
1.1. Phonoscope 66
1.2. Rousselot's phonoscope 67
1.3. The electric membrane writer 68
1.4. Phonoscope 71
1.5. Phonoscope 97
1.6. "The Return" 97
1.7. The olive-quill 98
5.1. Deutsche Naturgeschichte 221

ACKNOWLEDGMENTS

Because this book was begun in a series of graduate seminars I attended over a decade ago at Stanford University, I should like first to acknowledge the scholarly brilliance and pedagogical enthusiasm of Marjorie Perloff, Albert Gelpi, Herbert Lindenberger, Michael Tratner, Hans Ulrich Gumbrecht, Jeffrey Schnapp, and Timothy Lenoir, whose professional goodwill and insightful commentary spurred on and shaped the present project. In particular, Marjorie Perloff, who directed this work when it was a dissertation, has been a wonderful mentor and friend; my debt of gratitude to her is well nigh incalculable.

The spurring and shaping has continued at Columbia University, where my colleagues in the Department of English and Comparative Literature have been at once excellent intellectual companions and stern wards of the discipline. In particular, I'd like to single out Edward Mendelson, Ross Posnock, and Martin Puchner, each of whom read the manuscript; the effects of their incisive commentary is palpable in what follows. The two chairs of the department during my three years there—Jonathan Arac and David Kastan—have been superb guides to the vicissitudes of professional life; they are avuncular founts of wisdom. Molly Murray is the best of office mateys and a bona fide partner in poetry crime; we've spent hours of visionary kvetching. I owe a special debt of gratitude to James Shapiro, gentleman and scholar, who has been instrumental in getting this book to press. Jim is the best of colleagues; he has made being at Columbia an

unqualified pleasure. I should also like to thank Jennifer Crewe, my editor, for her encouragement and hard work; and Columbia University, the Department of English and Comparative Literature, and the Graduate School of Arts and Sciences for a year's exemption from teaching duties, during which time this book finally found its final form.

No scholar, however, works entirely in the vacuum of academia, and this book largely owes its conception to conversations that took place off campus. Friends and colleagues who were important in this regard are Christine Holbo, Gene Suarez, Tyrus Miller, Ursula Heise, Jonathan Ivry, George Hart, Brian Reed, Susan Vanderborg, Ming Qian Ma, Paul Stephens, Andrea Anderson, and Ondrea Ackerman. David Cantrell, Simon Dickie, and Bill Donoghue have been stalwart friends and colleagues and have worked harder than they know to keep me intellectually honest over the years. Charles Bernstein has been a major source of inspiration for many years; his friendship and his help have been invaluable. Bruce Andrews is the MAN. Thanks to Georg Rast and Anne Marszalek for help with translations; and to Stanley Cardinet of Maybeck High School for years of poetry talk and tidbits about the Hapsburgs.

I have spent many years hanging out with four brilliant friends, Andrew Schelling, Sean Killian, Giles Scott, and Craig Dworkin; our rants, arguments, collective hallucinations, minute examinations, and ongoing conversations about poetry became a fundamental part of my intellectual baggage long ago. My brother, Chris Golston, phonologist extraordinaire, has been my sharpest critic and my best friend, both since at least the age of five.

Finally, I'd like to thank my immediate family—my mother, Helga Golston, and my wife and two children—Cherrymae, Azara, and Chris for their support, love, patience, and friendship. I would not be who, where, or what I am without them.

Versions of the following chapters have been published elsewhere: the introduction, in Stanford Humanities Review, v. 5 Supplement (1996); parts from the introduction and chapters 2 and 3 in American Modernism Across the Arts, ed. Jay Bochner and Justin Edwards (Peter Lang Publishing 1999), and in Paideuma 26, nos. 2 and 3 (Fall and Winter 1997); and chapter 5 in Textual Practice 18, no. 2 (Summer 2004). I am grateful to the editors of these books and journals for their permission to reprint and recast these articles. I should also like to thank Helen Blythe of New Mexico Highlands University for the opportunity to present a portion of this material as part of the Michael T. Carroll Lectures on Popular Culture in the spring of 2007.

For permission to include material published by them, grateful acknowledgment is made to the following:

- A P Watt LTD, on behalf of Gráinne Yeats, Executrix of the Estate of Michael Butler Yeats, for permission to quote from William Butler Yeats, The Collected Poems of William Butler Yeats.
- Ayer Company Publishers, for permission to reproduce two graphics from Emile Jacques-Dalcroze, Eurhythmcis, Art and Education, copyright © 1930, reprint 1985.
- Roger L. Conover, for permission to quote from The Last Lunar Baedeker by Mina Loy, edited by Roger L. Conover (Highlands: The Jargon Society), copyright © 1982.
- Faber and Faber Ltd., for permission to quote from The Cantos by Ezra Pound.
- Lyn Hejinian, for permission to quote from The Cell, copyright © 1992.
- Liveright Publishing Corporation, for permission to quote from "Paraphrase," from Complete Poems of Hart Crane by Hart Crane, edited by Marc Simon. Copyright 1933, 1958, 1966 by Liveright Publishing Corporation. Copyright © 1986 by Marc Simon.
- New Directions Publishing Corporation, for permission to quote from Personae by Ezra Pound, copyright © 1926 by Ezra Pound; and from The Cantos of Ezra Pound by Ezra Pound, copyright © 1924, 1937, 1940, 1948, 1956, 1959, 1962, 1963, 1966, and 1968 by Ezra Pound.
- New Directions Publishing Corporation, for permission to quote from Imaginations by William Carlos Williams; from Collected Poem 1939–1962, Volume II, copyright © 1953 by William Carlos Williams; and from Paterson, copyright © 1958 by William Carlos Williams.
- Springer NL, for permission to reproduce two photographs from H. Zwaardemaker, "L'analogue graphique de l'ecriture analphabetique par signes de Jesperson en phonteique," in Archives Neelandaises de Phonetique Experimentale, Tome I (Le Haye: Martinus Nijhoff), pp. 55 and 60. Copyright © 1927.

кнутнм	AND RACE	IN MODERI	NIST POETR y	AND SCIENCE

Introduction

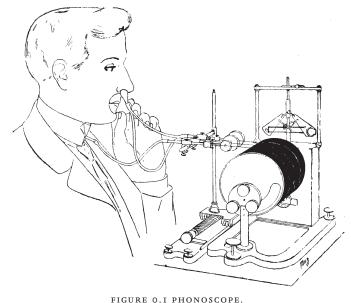
Phonoscopic Modernism

The reason people marvel at works of art and say: How in Christ's name did he do it?—is that they know nothing of the physiology of the nervous system.

-William Carlos Williams, Spring and All

The title of my introduction derives from the *phonoscope*, a device invented in France at the turn of the twentieth century to monitor the rhythmic changes in the metabolism of a person as he or she speaks. Strapped to the throat of the speaker, who also held a tube in one nostril, the phonoscope registered the vibrations of the vocal apparatus, producing a picture of sound—hence *phono/scope*—in the form of a wavy line incised onto a metal drum cylinder (see figure o.i). This cylinder provided the phonologist with a chart of the sound of a particular language as spoken by a particular person. The thesis of the present study is that these pictures—and more importantly, the body of scientific work that produced them—motivated many of the formal innovations of Modernist poetry.

In this introduction's epigraph from *Spring and All*, William Carlos Williams puts his literary finger on the more general subject of this book, which is the idea that human physiology has something critical to do with the aesthetic imagination. In what follows, I examine how theories of poetic rhythm during the Modernist period paralleled and in some cases were informed by contemporary theoretical and experimental work done on the rhythms of the human body. In an article published in *The American Journal of Psychology* for July 1913, Christian Ruckmich, an experimental psychologist at Cornell University, distinguished two issues involving the study of rhythm in the first decade of the century: theories of rhythm had proliferated to the point where they required critical reassessment, and



Source: Rousselot, *Précis de Prononciation Française*, 1913.

the topic of rhythm had migrated into a myriad of other disciplines and discourses:

The experimental investigation of the perception of rhythm has grown so extensive and, at the same time, so indefinite in scope that the writing of an introduction which shall be adequate to the general problem is now altogether out of the question. The subject of rhythm has been carried over into many fields both inside and outside of the science of psychology: within, it has been related to attention, work, fatigue, temporal estimation, affection, and melody; without, it is frequently mentioned in connection with music, literature, biology, geology, gymnastics, physiology, and pedagogy. (Ruckmich, "The Role of Kinaesthesis," 305)

As Ruckmich demonstrates here, the first half of the twentieth century witnessed a profound interest in the subject of rhythm, an interest that transgressed discursive boundaries and linked scientific fields and the arts in unusual ways. By 1913, as Ruckmich claims, rhythm had become an

issue critical to disciplines as diverse as gymnastics, literature, biology, and geology, as well as to the nascent field of psychology. His essay in fact marks the midpoint in a period of intense "experimental investigation of the perception of rhythm" that occurred in the United States and Europe between 1890 and 1940, during which time a great deal of theoretical work was done on rhythm and on its possible applications to various psychological, sociopolitical, and cultural situations. Ruckmich's call for a "complete study of rhythm" was echoed by European and American writers from many different disciplinary backgrounds who agreed that the time had come for a science of rhythm to be formulated: in his "Bibliography of Rhythm," published in the next issue of The American Journal of Psychology, Ruckmich cites more than two hundred entries. Because at the time rhythm was generally conceived to play an important role in most natural, social, psychological, and physical processes, and to be a critical component in the structures of mind and body, the political uses to which it could be put were issues of intensive speculation. As a unique production of the early-twentieth-century machine age -in which, Ruckmich intimates, it was destined to play a major role—rhythm was ready by 1913 to become deployed as its own comprehensive "field."

The year 1913 was also when Ezra Pound published "A Few Don'ts" in Poetry magazine, announcing his credo of "absolute rhythm" and initiating a century-long debate on poetic rhythm—from the Imagists of 1912 to the neo-romantics of the 1990s, twentieth-century poetry movements have risen and fallen according to their definition and handling of rhythm, which for many poets has represented what W.B. Yeats in 1902 termed "the principle part of the art." The controversies over free verse that preoccupied the literary establishment in the 1910s and 1920s—and led to the momentous departures from previous practice in the innovations of literary Modernism—are still raging in the debates between post-Language poets and New Formalists at the beginning of the twenty-first century. Just as the "critics" William Carlos Williams parrots in 1923's Spring and All task him for "taking away rhythm" (Imaginations, 88), so Amittai Aviram, writing seventy years later in Telling Rhythm: Body and Meaning in Poetry, accuses "modern poets" of "abandoning rhythm altogether," and Language poets of "making poetry simultaneously arrhythmical and meaningless" (235). Competing notions of rhythm have been the flash points for many of the controversies involving poetry in the twentieth century.

In what follows, I read the innovations of Modernist poetics against the period's more general understanding of rhythm as it was theorized in the fields and disciplines mentioned by Ruckmich. My thesis is that the innovations in prosody and form that characterize much Modernist poetry are based on a now forgotten set of ideas about rhythm—ideas that are themselves the products of the "field" of rhythm studies described by Ruckmich as emerging in the middle of the century's second decade. I term this field "Rhythmics" and its practitioners "Rhythmicists," although such a discipline never finally officially jelled and its advocates hailed from fields as different from one another as geology and music. Furthermore, not only was this general area of study forgotten, but, according to Pound, who took a great deal of interest in it, it was always hidden—at one point, he describes it as an unrecorded stratum of the tone of the time, which went into literature as its subject. The recovery of this "stratum" is important because it exposes certain notions of rhythm that underwrote much of the most significant poetry of the century. By remaining blind (or deaf, as it were) to the pressure that Rhythmics exerted on the poetry of the period, we miss a critical dimension of its history: to writers like Pound and Yeats, rhythm bore ideological significance. Because they were the originators of some of the most influential ideas about rhythm during the period and both wrote a great deal about rhythm, I focus on these two writers in this book's first four chapters.

In the final chapter, I examine William Carlos Williams's rejection of the theories of rhythm that inform the writing of his contemporaries—particularly Pound, whose "rhythmus" Williams attacks at several points in his career. Williams advocates doing away with the term "rhythm" altogether and substitutes for it an idiosyncratic theory of "measure" that I argue opens up a sense of poetic form as *allegory* that becomes critical to postmodern poetry. While the scope of this study is too narrow to cover later developments in theories of rhythm and measure, I indicate possible directions for future investigation.

Rhythm and Race in Modernist Poetry and Poetics follows on the insights of a number of recent reassessments of Modernist culture and society. Like Anson Rabinbach in *The Human Motor: Energy, Fatigue, and the Origins of Modernity,* I examine "a vast, though largely forgotten literature . . . that appeared at the end of the nineteenth century, and by the beginning of the twentieth, proliferated into a scientific approach" (5); likewise, I con-

centrate on "the intellectual and political implications of certain scientific concepts as they emerged in a zone between the specific concerns of the natural sciences and larger questions of social and political significance" (13). I focus on one aspect of that more general science of work that is the topic of Rabinbach's book, which mentions none of the work on rhythm (with one exception) that I examine here, although it concerns itself with issues to which such work was pertinent—e.g., ergonomics, the study of fatigue, and the general charting of the dynamics of the human body that characterizes early scientific Modernism. A number of the Rhythmicists were members of that "international avant-garde of fatigue experts, laboratory specialists, and social hygienists," who at the turn of the century "created a new field of expertise in which science and politics intersected" (8), but who remain beyond the purview of Rabinbach's study. My interest is in how this work on rhythm specifically informed or paralleled developments in poetics, another topic that Rabinbach, who writes a more general social history, for obvious reasons ignores.

Hillel Schwartz's essay "Torque: The New Kinaesthetic of the Twentieth Century" is an excellent general introduction to the range of issues I address in this book; Schwartz mentions in passing several of the scientists I examine, although, again, his study involves neither poetry nor the role Rhythmics played in racial discourse. Mark Antliff's *Inventing Bergson: Cultural Politics and the Parisian Avant-garde* explores many of the issues that I treat in the present study from the perspective of France and Italy; Antliff's work focuses more particularly on the reception and distortion of the philosophy of Henri Bergson in France—and partly in England—before WWII, and its impact upon French and Italian painting of the period. Mark Seltzer's *Bodies and Machines;* Cecilia Tichi's *Shifting Gears: Technology, Literature, Culture in Modernist America;* and Stephen Kern's *Culture of Time and Space, 1880–1918* also examine the impact of modern technologies and ideologies on Modernist aesthetic forms, but none of them cover the lost science of Rhythmics or its effects on theories of poetic rhythm.

Both of the terms in the first half of this book's title—*rhythm* and *race*—are controversial. Presently neither is at all well understood; both are the subject of competing conjectures, theories, and superstitions. Both of the terms have long and complicated histories during which they have been variously used, abused, and misused; both are referentially unstable and fundamentally ambiguous. In the present day, "race" is scientifically

untenable as a biological category; it is a term fatally bound to the science fictions of the last two hundred years. It is also a word used often and with a variety of meanings during the Modernist period and is, of course, one of the driving master narratives of the twentieth century. Pound, Yeats, and Williams—and nearly every other contemporary poet—all use the term "race" unsystematically and in a myriad of contexts. The word as it is used during the period can mean anything from "the human race"; to particular national, cultural, or ethnic groups; to people who simply share a language. When dealing with what Yeats means when he says "race," one treads a treacherous critical ground that is neither well mapped nor well understood but that is nonetheless passionately contested by critics and readers who jealously guard this or that version of the poet. Was Yeats a fascist, a nationalist, a eugenicist, a deluded mystic visionary, or simply a gadfly, out to do nothing more than ruffle the politically correct sensibilities of his age? Since Allen Ginsberg forgave Pound his anti-Semitism, should we? Was Pound "merely" a "suburban" anti-Semite? How fascist are the Pisan Cantos? At what point in their composition did they become so? What difference does it make?

As interesting as these questions are, they are not the subjects of this book, which is about ideas of rhythm and poetic form. I use the term "race" because and when the poets do, and I do not submit it to a great deal of critical scrutiny. I do not call Yeats a racist—I don't think he was one, although my opinion on the matter is not important here—but I am interested in how he uses the term to think about poetic rhythm. As I hope to show, the fact that he employs both "race" and "rhythm" in a remarkably loose and elastic fashion is important—after all, for Yeats, rhythm is supposed to be ambiguous or, as he puts it, to "waver" and to "escape analysis." With Pound, one is perhaps on more solid ground; he is the familiar and congenial racist of a generation or so ago, brutally casual in his references to "niggers" and "yids." I in no way mean to trivialize his commitment to Italian fascism or to exonerate him of the vile comments he made regarding Jews and other people in his radio speeches or in the pages of his poetry. Again, I am not out to map the contours of his particular brand of racism; I wish to understand his theory of rhythm.

This second term of my title is also difficult: the literature on poetic rhythm is extensive, unruly, and has been forever mired in controversy.¹ Stretching from Plato and Longinus to the current day, it has been bedev-

iled historically by two crucial factors: a slackness in terminological rigor and a fatal susceptibility to metaphor. T. V. F. Brogan writes in the entry for "Rhythm" in *The New Princeton Encyclopedia of Poetry and Poetics* (ed. Preminger and Brohgan,1993) that "rhythm is surely the vaguest term in criticism" (1068); even the basic meanings of the terms "rhythm," "meter," and "measure" are still a matter of contention for linguists, poets, and literary critics.² Unlike "race," rhythm is a real thing, a scientifically measurable phenomenon, even if, as Robert Wallace puts it in *Meter in English: A Critical Engagement*, "things are [currently] a mess" (in Baker, 297). Many present-day writers lament what they see as a major decline—among contemporary students, readers, and most critically among poets themselves—in knowledge about, and even interest in, poetic rhythm. Some blame the excesses of "free verse," construed in any number of ways; others see the cultural "loss of rhythm" as an index of a more general change in the sociopolitical environment.³

The vagueness of the term is compounded by the fact that over the centuries, poetic rhythm has been correlated to everything from the periodic cycles of nature—the change in seasons; the movement of the sun, moon, and stars; the tides—to the human stride, the pulse, the breath, and the "attention"; and from divinely inspired, cosmic social orders to political democracy and even anarchy.⁴ Rhythm has been classified as alternately organic or artificial; as oppressing or liberating; as registering the body or echoing the machine; and as being either absolutely critical or completely unnecessary to poetry. In many ways it is the ideal ideological cipher, since it can so easily *signify*; what rhythm "means" depends on who is using it and in what context.

In this study, I exploit both the term's looseness and its susceptibility to metaphor. Neither Pound nor Yeats ever actually defines the term, and its very ambiguity and suggestiveness are in fact critical to their theories. Brogan gives a basic definition of rhythm in *The New Princeton Encyclopedia:* "A cadence, a contour, a figure of periodicity, any sequence of events or objects perceptible as a distinct pattern capable of repetition and variation" (1066–67). This is certainly something like what Yeats and Pound have in mind when they speak of rhythm, although what they find important are its other nuances—that the sense of rhythm is hooked up to the heartbeat; that poetic rhythms indicate phases of history and culture; that they can induce trancelike states and have political force. Brogan goes

on in his encyclopedia entry to discuss rhythmic "regularity": "Rhythmic series are patterns of organization in which markers (such as stress) are deployed at intervals either regular or close enough to reinforce the *expectation* of regularity" (1067). Indeed, the issue of rhythmic expectation is critical to Pound's and Yeats's theories, given that both poets develop notions of "inaudible" or "hidden" rhythms—that is, rhythms that the reader or auditor is not supposed to be able to hear or see but instead is supposed to intuit. "Expectation" becomes a matter of the *unconscious*, which allegedly does register these rhythms—and it is here that Yeats and Pound locate the affective power of their poetry. Parsing inaudible rhythms is part of the challenge of analyzing the prosody of High Modernist poems.

At this point, I should make a few comments regarding methodology. Techniques for scanning poetry have proliferated in the last twenty-five years, along with what Richard Cureton terms "'approaches' to English verse rhythm, each with relatively distinct assumptions, methods, textual foci and critical results." In his very useful work, he selects the fifteen approaches "responsible for most of the achievements (and limitations) in our understanding of the rhythm of English texts" (*Rhythmic Phrasing*, 7).⁵ Cureton describes the theories of the various temporalists, phrasalists, intonationalists, generative metrists, metrical phonologists, and independent prosodists such as Derek Attridge and Donald Wesling, and he proposes a sophisticated methodology for registering the rhythms of verse from a reader-based perspective; his is only the latest of many attempts to integrate the various recent approaches to poetic rhythm.

For the present study, I stay with what Cureton calls "foot-substitution prosody," "the oldest and still most dominant approach to English verse rhythm derive[d] from classical scansion" (*Rhythmic Phrasing*, 7), coupled with my own prose descriptions of the ways the poets use sound features in conjunction with thematic meaning. My purpose here is not to develop new graphic means for registering poetic rhythm but to investigate how what the poets thought they were doing affected the decisions they made about the rhythmical shape of their work. Pound, Yeats, Williams, and most other Modernists worked very much within and against "rhythm derived from classical scansion"; in trying to re-create the context for their innovations, I feel it wisest, with some exceptions, to stay close to the terms of their practice as they understood it.

The study of a subject that during the period in question was, in the words of Ruckmich, simultaneously extensive and indefinite in scope has led me to concern myself less with the direct influence of science on poetics although I do take advantage of moments when the two overlap—than with their confluence, for the arts and sciences in the Modernist period were "promiscuous," as Rabinbach puts it (Human Motor, 22). I isolate moments in this complicated history in order to highlight the issue of rhythm itself, which often is ancillary to some other topic under consideration, as Ruckmich's list demonstrates. For reasons that I will explain below, rhythm tends to be treated as an issue of crisis in the scientific and sociological literature of the period, and this is no less true of its poetry: while rhythm naturally is always formally present in Pound's or Yeats's poems, it is less frequently the subject of them, generally also becoming so at moments of social, political, psychological, or aesthetic crisis. For instance, Pound treats rhythm as the subject of his poetry primarily in his poems from the Imagist period, during which time he is working to "break the heave of the pentameter"; and then in the Cantos written after World War II, as a response to the traumas of the fall of fascist Italy in the Pisans; and finally as a means to realizing the "paradise" envisioned in Rock-Drill and Thrones. Not coincidentally, the figure of the French phonologist and inventor of the phonoscope, Abbé Jean Pierre Rousselot, whose work on rhythm Pound admired, appears at just these critical junctures. In the Cantos, when rhythm becomes the subject, rhythmic "figures" like Rousselot—or Miscio Ito, the Noh dancer—appear as subject rhymes. These appearances determine in large measure where it is that I direct my attention.

Hence, I read a restricted although elastic subject matter through a highly selective set of poems and prose fragments. The general tendency of the Modernist arts and sciences, it can be argued, was to isolate and to fragment, a tendency that goes some way toward accounting for the treatment of rhythm as its own discrete subject during the period. My project here is to bring this "indefinite" subject of rhythm into higher definition by isolating and foregrounding it and, by doing so, to gain insight into what motivates the writing of the poetry—both in the sense of what moves the author to write the poem in the first place, and then in how the poem itself, as a composition in verse, moves.

The controversy over whether poetic rhythms "mean" anything in particular is of course not new: writers from Longinus to Wordsworth have

speculated on how poetic rhythm functions and what it means. What is new during the Modernist period is the role that the science of human physiology plays in the discussion. The body was the object of a great deal of scrutiny during the late nineteenth and early twentieth centuries, but presently no study of rhythm as the object of this scrutiny exists. The issue of the "meaning of rhythm" is complicated further when it becomes the issue of the "meanings of rhythms": as I demonstrate below, scientists went to great lengths to catalogue individual rhythms and to align them with particular national and racial profiles. The general idea—much simplified here—was that the circumstances of modernity compromise or even destroy organic human senses of rhythm; that the recovery of such senses of rhythm is essential to the maintenance of a healthy civilization; and that poetry can assist in and even motivate such a recovery.

In tracing a single subject or idea through a poet's work, one creates a kind of parallel text, one with its own peculiar—even myopic—integrity; such a study produces a minitreatise standing apart from the main body of work that nonetheless intersects it in critical ways. As such, it can open a narrow but illuminating window onto a poet's practice. Consequently, in the present study I do not so much work to round out the portrait of the poet at work as I seek to disintegrate it. In this, my project goes against the grain of much of the critical work done on Modernist poetry in the past twenty years: I am not concerned here with how the "poem in process," in the history of its revisions, reveals ideological fault lines invisible in the poem as finally published, but with the poem as product, with what can be said of the formal case of its "final" versions, keeping in mind the difficulties for Modernist texts that this approach implies.⁶ Isolating the issue of the meaning of rhythm in the works of Yeats, Pound, and Williams yields a telling, if static, picture: for these poets—and generally for the artists, philosophers, and scientists of the period—the subject of rhythm remained inextricably bound to issues of body, nation, and race and never drifted far from political subtexts. These writers criticized the poetry of their own time—as well as that of the past several hundred years of European literary history—for being fatally deficient in rhythmic technique, a situation that they sought to remedy by listening closely to the body, which was marked, as they understood it, by certain inalienable characteristics. Rhythm, as I will demonstrate below, became the key suture point for issues of the body, identity, history, and poetry.

My study begins where most others end: because many of the theories I unearth here are ultimately untenable, most critics end up declaring them fallacies and consigning them, more or less unexamined, to the dust-bin of history. In *Rethinking Meter*, Alan Holder dismisses what he terms "'the cosmic connection,' a linking of meter to the rhythms of the universe" (121), as well as that other "dubious staple of prosodic criticism, one that might be called 'the cardiac connection'": "The latter would have it that iambic meter (though there is no reason why it need be pentameter) corresponds to the systole-diastole movement of the heart and the consequent reflection in our pulse-beat" (126). Stephen Cushman similarly casts a cold eye on "what we might call a 'physiological fallacy,'" that is, the idea that

the physiological organization of the body regulates the prosodic organization of the verse. A line is a certain length because breathing takes a certain amount of time; accents recur regularly in a line because heartbeats recur regularly in the chest; lines are indented from the left margin because the eye has trouble moving to the left. Of course prosody can represent physiology, suggesting the rhythms of respiration, pulse, eating, speaking or walking (as in "Sunday in the Park," *Paterson*, Book Two), but we cannot assign bodily functions a causal role in relations to prosody.

(William Carlos Williams, 80)

While Cushman is no doubt correct that prosodists no longer believe the origin of poetic rhythms to be cardiovascular (although one might be surprised at how common an idea this still is), it is precisely within the context of this *mis*understanding that a politics of poetic form was made possible for Modernist poetry. Corroborated by the science I examine below, the "physiological fallacy" of the period linked poetic rhythm explicitly to body systems (pulse, heartbeat, respiratory rates, metabolic "tempos," etc.) that were understood to inscribe racial, national, and cultural identities. Thus while everyone knows that "heartbeats recur regularly in the chest," scientists of the period held that a black African person's heartbeats recur at different intervals than those of a Native American, whose heart beats to a different tempo than a white European's—that, ultimately, the difference between a German and a French pulse could be measured and registered—and that hence these different "peoples" "naturally" generate