

RHYTHM IN THE THOUGHT OF ALOIS RIEGL AND HIS CONTEMPORARIES

MICHAEL GUBSER

“Der Rhythmus ist ein Zwang”, declared Friedrich Nietzsche in 1887, and man feels an “unconquerable desire to yield” to its compulsion. “[N]ot only the stride of the feet, but even the soul itself gives into the beat – probably also [...] the souls of the gods!”¹ With its ability to discharge passions, tranquilize souls, intensify prayer, and rivet attention, rhythm, said Nietzsche, formed the primordial basis for the arts of poetry, music, and dance. Indeed, many of his intellectual contemporaries, including the art historian Alois Riegl, heeded its command. In late nineteenth-century thought, rhythm was commonly invoked as a pre-conceptual matrix linking biological motivity and *seelische* expressivity, a fundamental patterning that articulated movement across an array of human and natural forms.

In my recently published “Time’s Visible Surface”, I argued that Riegl’s notion of artistic temporality was rhythmically constituted.² An ill-defined *topos* in his early work, rhythm served as a basic ordering principle of art, a role that became most apparent in the famous final section of “Spätromische Kunstindustrie”. Riegl’s use of the term drew on a larger fin-de-siècle discourse that traversed many disciplines and thinkers. Even as rhythm became an increasingly common signifier in nineteenth-century aesthetic and psychological discourse, its object eluded clear definition. This ambiguity reflected the sense that rhythm marked a quality of experience so immediate and fundamental that it was not amenable to conceptual clarification – indeed, that it stood as a precondition for conceptualization as such. By the turn of the century, in fact, rhythm had become a watchword for critics of rationalism and positivism. Thus, Riegl’s ill-defined and varied use of the term kept with the tendencies of his counterparts, who often invoked it to name a pre-conceptual vitalism underlying human life. At the same time, however, turn-of-the-century investigations of rhythm emerged out of the widespread nineteenth-

century empiricist project of determining the psychological and physiological sources of *Seelenleben*, investigations that cited rhythm as a scientifically verifiable characteristic of temporal and aesthetic perception. Thus, rhythm had a shifting valence that could evoke mathematical patterning and positivist sensation as well as vitalist impulses antithetical to rational analysis.

Music theorists had an obvious interest in rhythm, which they prioritized as an “Urelement der Musik”.³ The influential musicologists Moritz Hauptmann (1792–1868) and Hugo Riemann (1849–1919) placed rhythm and meter at the center of their musical aesthetics. Riemann, in particular, offered pioneering studies of the rhythmic tactics of agogics (rhythmic variation) and anacrusis (the use of upbeats).⁴ The Austrian music critic and theorist Eduard Hanslick (1825–1904), in his influential “Vom Musikalisch-Schönen” (1854), designated rhythm as the “animating principle” that “carries life to music” – the only musical element found in nature. Rhythm emerged in the architectonic “co-proportionality of a [composition’s] symmetrical structure” and in the “regular alternating motion of individual units within the metric period”.⁵ Even Richard Wagner (1813–1883) saw in rhythm a musical expression of art’s fundamental organizing principle.

1 Friedrich Nietzsche, *The Gay Science*, (tr. Josephine Nauckhoff) (Cambridge, 2001), 84.

2 With the exception of several passages on Riegl and Bergson, my essay for this volume is not the same one I delivered at the Riegl Centenary Conference, which took place at the MAK – Österreichisches Museum für angewandte Kunst, in Vienna, Austria, in October, 2005. An expanded version of that essay has already been published in *The Journal of the History of Ideas* (Vol. 66, No. 3, Fall 2005), 451–74; and as part of the book *Time’s Visible Surface: Alois Riegl and the Discourse on History and Temporality in fin-de-siècle Vienna* (Detroit, 2006). A short section of this essay is adapted from Michael Gubser’s *Time’s Visible Surface*, © 2006, pp. 187–200, 226 n. 13, with the permission of Wayne State University Press.

3 Johann Christian Lobe, *Katechismus der Musik* (Wiesbaden, 1966; first published in 1852), 59.

For a survey of the term’s usage in the history of musicology along with a relevant bibliography, see the entry for ‘Rhythmus’ in the *Riemann Musik Lexikon*, Sachteil Band (Mainz, 1967), 803–8.

4 Moritz Hauptmann, *Die Natur der Harmonie und der Metrik: Zur Theorie der Musik* (Leipzig, 1873); Hugo Riemann, *Musikalische Dynamik und Agogik* (Hamburg and St. Petersburg, 1884) and *System der musikalischen Rhythmik und Metrik* (Leipzig, 1903). See also Alexander Rehding, *Hugo Riemann and the Birth of Modern Musical Thought* (Cambridge, 2003).

5 Eduard Hanslick, *On the Musically Beautiful*, (tr. Geoffrey Payzant) (Indiana, 1986), 28, 69–70.

[T]he innermost being of music was to soar from its bottomless depths, with all the undiminished abundance of its untried capacity, to a redemption in the radiance of the universal, *single* art of the future, and was to take this flight from that bottom which is the bottom of all purely human art – that of *plastic bodily movement*, represented in musical *rhythm*. [*Italics in original*]⁶

As a basic aesthetic principle of movement, rhythm linked music with other art forms, thus allowing Wagner to assign it a foundational role in his *Gesamtkunstwerk* of the future.

As these musicological formulations suggest, nineteenth-century thinkers did not limit rhythm to merely musical or aesthetic functions. Rhythm piqued scholarly interest because it seemed to mark an innate connection between patterns in art, nature, psychology, and physiology.⁷ “Rhythm”, wrote the physician Peter Joseph Schneider (1791–1871) in his 1835 book on the medicine and music, “is not a product of art but rather a basic essence of our deepest being. We cannot create it; it lies in our animal nature, as an atom of our basic makeup.”⁸ The dramatist Julius Roderich Benedix (1811–1873), in his study “Das Wesen des deutschen Rhythmus” (1862), defined rhythm as a global principle rooted in form and movement and experienced through the human sensorium.

Rhythm is not something randomly invented, but rather something given by nature, something existing. Hence

one cannot invent arbitrary laws of rhythm, but instead must investigate the existing laws. Rhythm is a sensory appearance that we perceive with our eyes or ears.⁹

Though Benedix maintained that ancient rhythmic verse forms ill suited the patterns of contemporary German prosody, rhythm as such stood as a metacode organizing sensory perception.¹⁰

Philosophers also highlighted rhythm in their conceptual systems, at times extending its organizing influence from the sensible to the rational. In the early eighteenth century, Gottfried Wilhelm von Leibniz (1646–1716), whose rationalist monadology exercised profound influence in nineteenth-century Austria, defined the beauty of music as “the harmony of numbers”, which the soul noticed even if the ear did not.¹¹ Leibniz’s formulation proposed a spatial application of rhythm that shadowed the nineteenth century’s dominant temporal rendition of the term. In the preface to “The Phenomenology of Mind”, G. W. F. Hegel (1770–1831) described rationality, so fundamental to his philosophical system, as the “rhythm of the organic whole” understood as “movement” or “process”, a temporal architectonic that encompassed conceptual form and content.¹² Arthur Schopenhauer (1788–1860), applying Kantian terminology, described rhythm as part of a pure *a priori* intuition of time; its poetic partner, rhyme, derived from mere empirical sensibility and thus lacked the nobility of rhythm.¹³ Johann Friedrich Herbart (1776–1841), a doyen in the field of

philosophical psychology, offered an examination of temporal perception based on the awareness of regular pulses. In the first volume of “Psychologische Untersuchungen”, Herbart not only attempted to determine the length of space between beats that enabled psychological association; he also noted that rhythmic patterns were based on strong and weak stresses. Temporal awareness emerged not from uniform metrical *Pulsschlägen*, but in the serial rising and falling of unequal beats. The associative psychological process, which Herbart illustrated through musical examples, revealed the origins of temporality in the rhythmic perception of tempo.¹⁴

Herbart’s work inspired a host of researchers to examine the psycho-physiology of rhythmic perception. The philosopher and physician Hermann Lotze (1817–1881) adopted Herbart’s model when he described rhythm as the unifying principle of temporal forms and continuities. An awareness of tem-

6 Richard Wagner, from “The Artwork of the Future” (1850) in Ruth A. Solie, ed., *Source Readings in Music History: The Nineteenth Century* (New York, 1998), 63.

7 Of course, the eighteenth and nineteenth-century discipline of aesthetics undertook more than the analysis of artworks; it sought to understand the physiology and psychology of human perception, as expressed especially in the experience of beauty. For two useful histories of nineteenth-century aesthetics, see Harry Francis Mallgrave and Eleftherios Ikononou, *Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893* (Santa Monica, 1994); and Michael Podro, *The Critical Historians of Art* (New Haven, 1984).

8 Peter Joseph Schneider, *System der medizinischen Musik*, Erster Theil (Bonn, 1835), 324. Schneider first became known for an 1821 work on toxicology.

9 Roderich Benedix, *Das Wesen des deutschen Rhythmus* (Leipzig, 1862), VII, 1. Benedix is perhaps best known for his book *Die Shakespearomanie*, which Friedrich Engels derided in 1873. (Letter from Friedrich Engels to Karl Marx, Dec. 10, 1873 in Marx and Engels, *Literature and Art* (USA, 1947), 49–50.)

10 In this vein, the classicist Rudolf Westphal also penned a number of volumes comparing musical and poetic rhythm in ancient and modern times. See Westphal, *System der antiken Rhythmik* (1865), *Allgemeine Theorie der musikalischen Rhythmik seit J. S. Bach* (1880), *Griechische Metrik* (1885–89), and *Allgemeine Metrik der indogermanischen und semitischen Völker* (1892). The term ‘metacode’ comes from Hayden White, “The Value of Narrativity in the Representation of Reality” in *The Content of the Form: Narrative Discourse and Historical Representation* (Baltimore, 1987).

11 See “Principles of Nature and of Grace, Founded on Reason. 1714” in *Leibniz: Philosophical Writings* (London, 1934), 30.

12 G. W. F. Hegel, *The Phenomenology of Mind*, (tr. J. B. Baillie) (New York, 1967), 115.

13 Arthur Schopenhauer, *The World as Will and Representation*, Vol. II (tr. E. F. J. Payne) (New York, 1958), 427–8. See also Vol. I, 243–44.

14 Johann Friedrich Herbart, *Psychologische Untersuchungen*, Erstes Heft (Göttingen, 1839), 33–8, 143–83.

poral extension did not emerge from the immediate sensory data alone, but rather through the combination of beats and pauses, the association of separate percepts over time. Rhythmic unities involved not only direct sensory perception, but anticipation and recollection as well.¹⁵ The philosopher, psychologist, and aesthetician Theodor Lipps (1851–1914), whose theory of empathy achieved great renown, also argued that rhythmic continuities, like other sensible unities, manifested themselves in temporally extended perceptions that linked immediate sensation with mental procedures such as recollection.¹⁶ He described musical consonance and dissonance in terms of mathematical “tone-rhythms”, vibration ratios that appealed to the ear and the “soul”.¹⁷ Hermann Helmholtz (1821–1894) also based his psychophysiology of tone on vibrational regularities that distinguished music from mere noise. His musico-psychology examined the micro-rhythms of pitch and harmony, the regularities, periodicities, and frequencies that determined euphony and cacophony.¹⁸ The Austrian physicist and sensationist philosopher Ernst Mach (1838–1916) identified a psychologically distinct “Rhythmus-empfindung” that enabled the perception of musical patterns.¹⁹ And both the Tübingen aesthetician Karl Reinhold von Köstlin (1819–1894) and the Berlin philosopher Eduard von Hartmann (1842–1906), whose notion of the unconscious informed Nietzsche’s and Freud’s work, investigated rhythm as an element of the temporal arts and the arts of movement.²⁰ Especially pertinent for this essay, Riegl’s philosophy professor Robert Zimmermann (1824–1898), an ardent publicist of Herbart’s theories, emphasized the importance of rhythmic regularity in his analysis of “chronometrisches Vorstellen”.²¹

The work of psychologist and physiologist Adolf Horwicz (1831–1894) exemplified a sensationist approach to rhythm as a foundation for time perception. “Rhythm is the unit of time”, Horwicz explained, that we recognize in “the regular recurrence of sensations according to a specific pattern”.²² Without this sensory cadence, we would have no concept of time at all. “The roots of this rhythmic sensation”, Horwicz argued, “stretch into the deepest structures of our consciousness, indeed our existence. It is certainly not chance that our most important life functions, such as breathing and heartbeat, proceed rhythmically.”²³ Horwicz traced the anthropological origin of time measurement to the recognition of these physiological rhythms, followed by

the gradual identification of wider natural regularities such as the diurnal and seasonal cycles. Physical and natural rhythm became the precondition for conceptual discernment as such; the ability to distinguish rhythmic regularities underlay the human capacity to differentiate, compare, and contrast.²⁴ Thus, rhythm served Horwicz as a kind of *Ursinn* that stood as an anthropological basis for human thought.

The pioneering physiological psychology of Wilhelm Wundt (1832–1920), by contrast, postulated a greater interaction of the mind and senses in rhythmic perception. In “Grundriß der Psychologie”, Wundt, like Horwicz and other sensationists, rooted temporal perception in the experience of rhythmic corporeal motion, especially the isochronous pendular motion of the limbs.²⁵ An originally kinetic time perception gained precision through the aural experience of rhythmic sound. But Wundt also insisted, like Lotze or Lipps, that rhythmic awareness was linked to the recollective and combinatory intelligence of higher mental and emotional faculties.

The feeling of rhythm is entirely dependent on the conditions discussed in considering temporal presentations. The partial feelings are formed through the senses of tension and fulfilled expectation, which in their regular alternation constitute the rhythmic temporal presentations themselves. The way in which these partial feelings are united, and especially the predominance of some of them in the emergent feeling of the whole, is, to an even higher degree than the momentary character of an intense feeling, dependent on the relation which the immediate pres-

15 Hermann Lotze, *Geschichte der Aesthetik in Deutschland* (Munich, 1868), 294–324.

16 Theodor Lipps, *Grundtatsachen des Seelenlebens* (Bonn, 1912; Reprint Adamant Media, 2003), 268.

17 Lipps, *Psychological Studies* (tr. Herbert C. Sanborn) (Baltimore, 1926; Reprint Arno, 1973), 138–53.

18 Hermann Helmholtz, *On the Sensations of Tone* (tr. Alexander J. Ellis) (New York 1954).

19 Ernst Mach, “Untersuchungen über den Zeitsinn des Ohres” in *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe. Abt. 2*. Volume 51, Issue II, 1865, 133–150. See also Mach, *The Analysis of Sensations and the Relation of the Physical to the Psychical* (tr. C. M. Williams) (New York, 1959), 256–61.

20 Karl Reinhold von Köstlin, *Aesthetik* (Tübingen, 1869), 89–90; Eduard von Hartmann, *Philosophie des Schönen* (Part 2 of *Aesthetik*) (Leipzig, 1887).

21 Robert Zimmermann, *Aesthetik Vol. II (Aesthetik als Formwissenschaft)* (Vienna, 1865), 222–36. On Zimmermann, see Gubser, *Time’s Visible Surface*, 97–104; Lambert Wiesing, *Die Sichtbarkeit des Bildes: Geschichte und Perspektiven der formalen Ästhetik* (Reinbek bei Hamburg, 1997).

22 Adolf Horwicz, *Die Analyse der qualitativen Gefühle* (Second half of Part 2 of *Psychologische Analysen auf physiologischer Grundlage: Ein Versuch zur Neubegründung der Seelenlehre*) (Magdeburg, 1878), 139.

23 *Ibid.*, 140.

24 *Ibid.*, 142.

25 Wilhelm Wundt, *Grundriß der Psychologie* (2. Aufl.) (Leipzig, 1897), 170–3. Wundt’s multi-volume *Grundzüge der physiologischen Psychologie* (orig. 1874), which Edwin Boring called “the most important book in the history of modern psychology”, included an examination of the origins of time awareness in rhythmic movement and sound. See *Grundzüge der physiologischen Psychologie*, Dritter Band (6. Aufl.) (Leipzig, 1911), 1–31; Edwin G. Boring, *A History of Experimental Psychology* (New York, 1929), 317.

ent feelings have to those preceding. This is especially apparent in the strong influence that every change of rhythm exercises on rhythmic feeling. Through this, as well as through its overall dependence on a specifically temporal progression, the rhythmic feelings offer the most direct link to the emotions.²⁶

For our purposes, two points stand out in Wundt's analysis. First, his discussion of the interaction of physical motion, audition, and feeling in the perception of rhythm anticipated Riegl's analysis in "Spätromische Kunstindustrie", published four years later.²⁷ Second, Wundt's analysis resisted the kind of sensationalism that treated rhythm as mere data drawn from sensory or corporeal movement; instead his analysis proposed a mental or subjective involvement in the perception of rhythmic form. Physical sensation and mental synthesis combined in the experience of rhythmic pattern and regularity.

A fundamental artistic, perceptual, and biological ordering principle, rhythm appeared in so many nineteenth-century treatises that one is inclined to agree with Lotze's assertion that rhythm's simple allure belied the great difficulty of explaining its appeal.²⁸ Indeed, interest in rhythm –

as well as related musical elements such as melody and tone – among empirical psychologists was so widespread that a full survey here is impossible. To those already mentioned, luminaries such as Carl Stumpf, Christian von Ehrenfels, and Alexius Meinong could be added; all of them addressed rhythmic perception and sensation at some point in their philosophical and psychophysiological oeuvres. In fact, after attending his mentor's seminar on the topic, Stumpf's student Kurt Koffka, one of the founders of Gestalt psychology, wrote his 1908 dissertation on the visual apprehension of rhythm.²⁹

Two German works published in the 1890s attempted to synthesize the myriad considerations of rhythm and provide a more focused examination of its significance.³⁰ Wundt's student Ernst Meumann (1862–1915), in his *Habilitationschrift* "Untersuchungen zur Psychologie und Aesthetik des Rhythmus" (1894), provided perhaps the most thorough survey of nineteenth-century elaborations of the fraught term. Meumann's overview, organized into physiological, psychological, musical, and poetic theories, prefaced an outline of his own independent theory of rhythm.³¹ The second book, "Arbeit und Rhythmus", by the economist Karl Bücher (1847–1930), had far greater impact, passing through six editions

between 1896 and 1924. Bücher identified rhythm – "the ordered structuring of movement in its temporal progression" – as a principle of natural order that entered the social realm through the repetitive patterns of "primitive" work.³² Rhythmic bodily movements, he maintained, were essential to manual labor on farms, in craft industries, and in construction; these work rhythms evolved "from man's organic essence". Arguing that poetry and music first developed to stimulate the tedious labor process, Bücher turned to the unorthodox evidence of work songs gathered from around the globe to substantiate his anthropological claim that "primitive" labor was fundamentally rhythmic. Both ingenious and farfetched, "Arbeit und Rhythmus" contended that rhythm joined "work, music, and poetry at a primitive level of development, when the three human endeavors were all "merged into one".³³ As Michael Golston has noted, Bücher adopted Darwinian language to assert the primitive connection between work and rhythm and to explain how modern industrial labor, now divorced from its anthropological origins, could become more humane and efficient through alignment with basic human rhythms.³⁴

26 Wundt, *Grundriß*, 197. The English translation is in Wundt, *Outlines of Psychology* (tr. Charles Hubbard Judd) (New York, 1897), 167.

27 Wundt, *Outlines of Psychology*, 174–86. Riegl emphasized the combined influence of the eye, touch, and mind in the perception of form.

28 Lotze, 294–5.

29 Anticipating his later holism, Koffka's dissertation, *Experimental-Untersuchungen zur Lehre vom Rhythmus* (Leipzig, 1908) stressed the importance of grouping to the perception of rhythmic form. The philosopher Alois Riehl also supervised Koffka's work. For a masterful history of empirical psychology at the time, see Mitchell Ash, *Gestalt Psychology in German Culture 1890–1967: Holism and the Quest for Objectivity* (Cambridge, 1995). On Stumpf, Ehrenfels, Meinong, and Koffka, see 28–41, 84–99, 108–11.

30 To these German works should be added the seminal 1894 article on "Rhythm" by the American psychologist Thaddeus Bolton, which appeared in *The American Journal of Psychology* (Vol. 6, No. 4, Jan. 1894), 145–238.

31 Ernst Meumann, *Untersuchungen zur Psychologie und Aesthetik des Rhythmus* (Leipzig, 1894). Meumann played an important role in establishing experimental psychology within German universities. See Ash, 25–7.

32 In this argument, Bücher echoed August Wilhelm von Schlegel (1767–1845), whose 1795 "Briefe über Poesie, Silbenmaß und Sprache" located the origins of meter in the repetitive rhythms of physical movement and human activity. See August Wilhelm von Schlegel, "Briefe über Poesie, Silbenmaß und Sprache" in *Ausgewählte Werke*, Eberhard Sauer, ed. (Berlin, 1922), 209–60.

33 Bücher, 78, 80, 101. Bücher argued that rhythmic patterns emerged in work before they did in speech or art, indeed that all rhythm was rooted in the physical movements associated with manual labor. The differentiation of work from play and the assignment of music and poetry to the ludic realm was a later development. Bücher is associated with the nineteenth-century historical school of economics, whose luminaries include Carl Menger, Lujo Brentano, and Gustav Schmoller. For an English-language treatment of his work, see the conference papers collected in Jürgen Backhaus, ed., *Karl Bücher: Theory – History – Anthropology – Non Market Economies* (Marburg, 2000). For his views on rhythm, see especially the essays by Peter Senn and Michael Hudson, which liken economic to musical modes of rhythmic organization. I thank Georg Vasold of the Institut für Kunstgeschichte, University of Vienna for first drawing my attention to Karl Bücher.

34 Michael Golston, "Im Anfang war der Rhythmus": Rhythmic Incubations in Discourses of Mind, Body, and Race from 1850–1944" in *Stanford Humanities Review*, Supplement 5 (1996), 6–9. Golston's article also provides a fuller examination of rhythm in the American intellectual context.

By the early twentieth century, the German and Austrian interest in rhythm that we have considered thus far had disseminated to other cultures. In order to demonstrate the widespread impact of this nineteenth-century discourse on fin-de-siècle thought, I will examine the role of rhythm in the works of three influential thinkers from divergent intellectual traditions: Henri Bergson, John Dewey, and Alois Riegl. In his first published book, the 1889 “Essai sur les données immédiates de la conscience”, the philosopher Henri Bergson (1859–1941) attempted to distinguish the human experience of time from abstract scientific temporality. In contrast to the homogeneous time concept of natural science, Bergson presented time as a multiplicity of qualitative intensities continuously growing together. What he would later famously call the “creative evolution” of life rested on a notion of time as duration: continuous change and passage that characterized even moments of apparent stasis. To describe his continuous yet articulated perception of time and to contrast it with the intellectual tendency to think in discrete, static temporal units, Bergson advanced a notion of rhythm as temporal demarcation that connects rather than divides. In dance, “the regularity of the rhythm establishes a kind of communication between [the dancer] and [the audience], and the periodic returns of the measure are like so many invisible threads by means of which we set in motion this imaginary puppet”.³⁵ Rhythm did not separate movement into “jerky” units; instead, it marked fluid, graceful transitions to new gestures foretold by earlier moves. “[T]he rhythm and measure”, wrote Bergson, “by allowing us to foresee to a still greater extent the movements of the dancer, make us believe that we now control them.” Based on a psychology of expectation, fulfillment, and release, rhythm set up an economy of desire and control binding the performer to an audience. “Indeed, if [the puppet] stops for an instant, our hand in its impatience cannot refrain from making a movement, as though to push it, as though to replace it in the midst of this movement, the rhythm of which has taken complete possession of our thought and will.”³⁶ Bergson characterized this rhythmic regime as akin to a “moral sympathy” linking a performer and an audience who are both drawn by the “irresistible attractiveness of grace”.³⁷ Rhythm played a similar role in the other arts. In music, “rhythm and measure suspend the normal flow of our sensations and ideas by causing our attention to swing to and fro between fixed points, and they take hold of us with such force that even the faintest imitation of a groan will suffice to fill us with the utmost sadness”. The poet also deployed rhythms

“by which our soul is lulled into self-forgetfulness, and, as in a dream, thinks and sees with [him]”. In symmetry and motivic repetition, the plastic arts and architecture applied “effects analogous to those of rhythm”.³⁸ Thus, Bergson treated rhythm as a perceptual order spanning many artistic genres and forms.

In his early work, however, Bergson reserved the term rhythm for the domain of art. “Nature”, he contended, “does not command the resources of rhythm.”³⁹ In contrast to thinkers who located rhythm in bodily movement or natural patterns, Bergson saw rhythm as pure artistry linking performers with audiences through the economies of human sensitivity. Nature had no need for the rhythms that an artist imposed on her material. Because of “long comradeship”, nature commanded immediately the human sympathy that artists had to win through the suggestive forms of harmony, proportion, and rhythm.⁴⁰

In “Creative Evolution” (1907), the *chef d’oeuvre* of turn-of-the-century vitalism, Bergson softened the distinction between art and nature by characterizing life as a continuous, creative duration that was nevertheless marked by rhythmic ebbs and flows.⁴¹

The universe endures. The more we study the nature of time, the more we shall comprehend that duration means invention, the creation of forms, the continual elaboration of the absolutely new. The systems marked off by science endure only because they are bound up inseparably with the rest of the universe. It is true that in the universe two opposite movements are to be distinguished [...] ‘descent’ and ‘ascent.’ The first only unwinds a roll ready prepared. [...] But the ascending movement, which corresponds to an inner work of ripening or creating, endures essentially, and imposes its rhythm on the first, which is inseparable from it.⁴²

The evolutionary forms of life emerged from an interplay between boundless energies and the patterns that channel them.⁴³ Bergson used the term rhythm to describe regularities in the flow of life and action. For example, he identified

35 Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, (tr. F. L. Pogson) (New York, 1960), 12.

36 *Ibid.*

37 *Ibid.*, 13.

38 *Ibid.*, 14–15

39 *Ibid.*, 16.

40 *Ibid.*, 14–17.

41 It testifies to the ubiquity and pliability of the notion of rhythm that Gaston Bachelard, in his critique of Bergson’s notion of continuous duration, also invoked the term to describe the discontinuous, dialectic, and relative character of time. Bachelard, *La Dialectique de la Durée* (Paris, 1950).

42 Bergson, *Creative Evolution*, 11.

the cinematographical rhythm of the intellect, which freezes life into isolated action-images;⁴⁴ a rhythm of palpitations and oscillations that moves the body and somatic perception;⁴⁵ and still different, more continuous rhythms that govern the coursing of life, varying with each of its manifestations.⁴⁶ Yet Bergson also took pains to distinguish “the rhythm of the flow of things” from that flow itself.⁴⁷ We might see in this distinction an echo of the divide between artifice and nature limned in his earlier work, for while repetition occurs in nature, rhythm is a distinctly human phenomenon, aesthetic in the broad sense that it links man perceptually to his environment by lending a shape and pattern to experience. In this reserve, Bergson differed from his American contemporary, John Dewey (1859–1952), who offered a more expansive definition of rhythm that embraced art and nature.

“The first characteristic of the environing world that makes possible the existence of artistic form is rhythm”, declared Dewey in “Art as Experience”. “There is rhythm in nature before poetry, painting, architecture and music exist. Were it not so, rhythm as an essential property of form would be merely superimposed upon material, not an operation through which material effects its own culmination in experience.”⁴⁸ Rhythm figured centrally in Dewey’s effort to recapture art for human experience; indeed, the central premise of his 1934 volume is that the rhythm of experience joined human action and nature in a continuous aesthetic system. All human activity involved interactions with the environment that were characterized by tension, discord, loss, and recovery of orientation. “The rhythm of loss of integration with environment and recovery of union not only persists in man, but becomes conscious with him; its conditions are material out of which he forms purposes.”⁴⁹ Animals, too, pass through a “rhythmic conflict and fulfillment” that

Dewey believed was fundamental to the organization of life.⁵⁰ Even nature had its basic rhythms. “A pond moving in ripples, forked lightning, the waving of branches in the wind, the beating of a bird’s wing, the whorl of sepals and petals, changing shadows of clouds on a meadow, are simple natural rhythms.”⁵¹

For humans, however, rhythmic experience involved *conscious* purpose-seeking and form-giving that turned mere activity into patterned and meaningful experience.⁵² Not all human actions, insisted Dewey, could be dignified as experiences. “To put one’s hand in the fire that consumes it is not necessarily to have an experience. The action and its consequence must be joined in perception. The relationship is what gives meaning.”⁵³ An experience arises not simply when something is grasped in perception and intellect, but when an action or set of actions is grasped in its potential relationships and unities. Only by hearkening to the regularities that link and unify sensations could actions be turned into experiences. According to Dewey, the distinction between action and experience marked the essential difference between a scientific and an aesthetic attitude. The scientist was “interested in problems”, in analyzing moments of tension “between the matter of observation and of thought” that disrupt the worldview of a conscious life.⁵⁴ The artist, by contrast, was concerned with generating “an experience that is unified and total”; she grasped tensions in order to attain new combinations and solutions. Dewey defined this integrative moment of conscious experience as aesthetic, and by doing so, embraced art within the essential continuity of life rather than setting it apart as a product to admire. Rejecting the “tick-tock theory” of rhythm as a metronomic repetition of uniform beats, Dewey insisted that rhythm involved “constant variation”.⁵⁵ Life’s conditions of “continuity, cumulation, conservation, tension, and anticipation” were fundamentally patterned by various rhythmic unities.⁵⁶

Unlike Bergson, Dewey did not limit rhythm to aesthetic experience. It marked instead an order linking art and nature, man and animals, indeed the universe and time itself as “the organized and organizing medium of the rhythmic ebb and flow of expectant impulse”.⁵⁷ It is perhaps a necessary quality of such a fundamental natural-*cum*-ontological phenomenon that it resists conceptual definition. At times, Dewey seemed to characterize rhythm as life’s basic ordering principle, one and indistinguishable from life itself; at other moments, it became more of a property shaping, but not the same as, the primordial

43 Ibid., 236–7, 255.

44 Ibid., 307.

45 Ibid., 301.

46 Ibid., 128.

47 Ibid., 346.

48 John Dewey, *Art as Experience* (New York, 1934), 147.

49 Ibid., 15.

50 Ibid., 25.

51 Ibid., 155.

52 Ibid., 40. On Dewey’s concept of experience, see Martin Jay, *Songs of Experience: Modern American and European Variations on a Universal Theme* (Berkeley, 2005), 131–69, 261–311.

53 Dewey, 44.

54 Ibid., 15.

55 Ibid., 163.

56 Ibid., 138. In rejoining life and art, Dewey presaged contemporary art historians such as Norman Bryson, who prefer the integrative, processual, temporalized paintings of the Glance to the more static and distant icons of the Gaze. See Bryson, *Vision and Painting: The Logic of the Gaze* (New Haven, 1983).

57 Dewey, 23, 25.

stuff of life, a kind of Aristotelian accident that channeled the differential energies of boundless, formless life. Dewey described rhythm as “rationality among qualities”, the organization of energies into an “ordered variation of changes”.⁵⁸ A coefficient of form, co-primordial if not quite synonymous with life, rhythm regulated diverse organic and inorganic expressions: the natural patterns of day and night, rain and sun, the seasons, the crops, the animals;⁵⁹ and human patterns, both biological and cultural, such as breath, circulation, perception, hunger, sleep, work, craft, and speech.⁶⁰ Rhythm informed all artistic styles, the abstract and the naturalist alike. “Underneath the rhythm of every art and of every work of art there lies, as a substratum in the depths of the subconscious, the basic pattern of the relations of the live creature to his environment.”⁶¹ As if by “inner revelation”, the interpenetration of artistic materials by rhythm oriented the parts and qualities of a work and transformed a theme into a new subject-matter. Echoing Augustine, Dewey asserted that even ugliness had a patterned, rhythmic relationship with beauty in the overall complex of an artwork, much as rests and blanks balance each other in “some particular rhythm” of an aesthetic whole.⁶²

Ultimately, “every uniformity and regularity of change in nature is a rhythm”, asserted Dewey. Natural law and natural rhythm were “synonymous”.

As far as nature is to us more than a flux lacking order in its mutable changes, as far as it is more than a whirlpool of confusions, it is marked by rhythms. Formulae for these rhythms constitute the canons of science. Astronomy, geology, dynamics, and kinematics record various rhythms that are the orders of different kinds of change. The very conceptions of molecule, atom, and electron arise out of the need of formulating lesser and subtler rhythms that are discovered. Mathematics are the most generalized statements conceivable corresponding to the most universally obtaining rhythms. The one, two, three, four, of counting, the construction of lines and angles into geometric patterns, the highest flights of vector analysis, are means of recording or of imposing rhythm.

It comes as no surprise, given the omnipresence of rhythm in Dewey’s world, that he should draw together the history of art and science as a continuous human effort to clarify the rhythms first attended by man. Rhythm was, in his words, “a universal

scheme of existence, underlying all realization of order in change”.⁶³

Our third thinker, Alois Riegl (1858–1905), an art historian indebted to both empirical psychology and Nietzschean vitalism, bridged the various schools of thought we have discussed above.⁶⁴ Riegl’s innovation was to link rhythm explicitly to visual organization by inscribing rhythmic temporality into the composition and perception of artworks. In “*Stilfragen*” (1893), he designated the fundamental laws of art as “*Symmetrie*” and “*Rhythmus*”. These basic principles corresponded to rudimentary natural forms.

The same laws of symmetry and rhythm are indeed those that nature uses in the formation of its phenomena (man, animals, plants, crystals), and it does not require a great insight in order to notice the basic planimetric forms and configurations latent within natural things.⁶⁵

Rhythm governed both regularities and irregularities in nature, as well as fundamental artistic laws;⁶⁶ it defined formally the earliest Geometric Style of decoration;⁶⁷ determined the decorative placement of animals and coherent filling of space in the ancient Egyptian and Assyrian Carpet Style;⁶⁸ generated new decorative forms such as the spiral or the guilloche in Near Eastern art;⁶⁹ excluded certain arhythmic forms from the decorative catalogue of Mesopotamian art;⁷⁰ described the undulating movements of the Greek tendril motif that culminated the ancient decorative progression;⁷¹ and organized the coherent filling of surfaces, flat or otherwise, which was the “endpoint and goal of the whole development”.⁷² In “*Stilfragen*”, rhythm received its clearest exposition as part of a concluding discussion of the Byzantine and early Islamic notion of infinite rapport, conveyed by the endless decorative loops of the arabesque.⁷³

58 *Ibid.*, 154, 169.

59 *Ibid.*, 25, 147–8.

60 *Ibid.*, 56, 148, 150, 174–5.

61 *Ibid.*, 150.

62 *Ibid.*, 170–73.

63 *Ibid.*, 149–50.

64 For a consideration of Riegl’s work as part of a broader fin-de-siècle fascination for the animation of the inorganic, see Spyros Papapetros, *On the Animation of the Inorganic: “Life in Movement” in the Art and Architecture of Modernism 1892–1944* (Ph.D. Dissertation, University of California, Berkeley, 2001).

65 Riegl, *Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik* (Berlin, 1923), 3.

66 *Ibid.*, 11, 3.

67 *Ibid.*, 39.

68 *Ibid.*, 40.

69 *Ibid.*, 89–90.

70 *Ibid.*, 99.

71 *Ibid.*, Chpt. III, pt. B.

72 *Ibid.*, 197.

73 *Ibid.*, 259–346.

Near Eastern artists succeeded in developing Egyptian and Greek vegetal motifs to the point where they expressed infinity not as an empty space or void, but in the harmonious rhythm and symmetry of endless tendril loops.⁷⁴ The gradual emergence of space as an object of perception during imperial Roman times and its rhythmic organization against the flat plane led to the Near Eastern perception of infinity as endless, full, and articulated. Rhythm visually organized an otherwise undifferentiated and seemingly empty space in terms of line, pattern, and scope.

In “Spätromische Kunstindustrie” (1901) Riegl defined form in the ancient world even more explicitly as rhythmic articulation. “Like all of antiquity, the essential artistic medium which late Roman art used to fulfill its stated artistic intentions”, wrote Riegl, “was rhythm.”

By means of rhythm, that is, the sequential repetition of like appearances, the coherence of the respective parts of an individual whole is made absolutely clear and convincing to the viewer; and where several individual elements were brought together, there it was once again rhythm that was able to give shape to a higher unity [...] Like all of ancient art, late Roman art strove to represent individual unified forms through rhythmic composition on the plane.⁷⁵

Rhythmic composition demarcated an otherwise undifferentiated material; it allowed late Roman artists to establish pictorial unity while still preserving the individuality of separate parts. Light and dark, space and figure, mass and depth, each became features of an emerging late Roman artistic sensibility organized by a rhythmic balance between individual parts and the collective whole. An orderly regulation of visual material, rhythm allowed for the simultaneous articulation and unification of shapes. As such, it was a basic formal principle that characterized more than simply one artistic era; rhythmic depiction changed over time, incorporating new representational capacities. It was at once the basis of artistic order, and subject to art’s fundamental condition of historical change.

In Riegl’s analysis, late Roman art served as the transition between a form of rhythmic composition suited to two-dimensional, planar depiction and one that could organize objects in three-dimensional space. As late Roman artists struggled with the three-dimensional implications of the emancipation of space, rhythmic composition adjusted itself to new requirements. Even as it came to organize three-dimensional artworks, however, rhythmic composition retained the traces of its original two-dimensionality. Ancient rhythmic composition regulated the depiction of objects on the plane, not in space; it separated elements beside and above, not behind one another. The emancipation of

bounded space in late Roman times signaled a move toward three-dimensionality that culminated in the infinite space of Byzantine arabesques. In transposing three-dimensional nature onto two-dimensional surfaces, rhythm came to govern spatial articulation as it had the planar and linear art of classical antiquity.⁷⁶ But rhythmic composition still regulated space and depth in terms of line and measure; it translated dimensionality into linearity for the purposes of visual representation. Infinite rapport, with its implications of boundless three-dimensional space, found its typical representation in two-dimensional arabesques.

Riegl turned to St. Augustine’s aesthetic writings to support his characterization of the late Roman artistic sensibility.⁷⁷ Augustine realized, according to Riegl, that “the principal goal of all artistic creation [was] unity (isolated perception of singular forms) and rhythm”.⁷⁸ In “De Ordine” and “De Musica”, Augustine defined rhythm, or numerical order, as the very basis of reason in the sensible world. “We

74 Ibid., 73–80.

75 Riegl, *Spätromische Kunstindustrie* (Darmstadt, 1973), 389–90.

76 Ibid., 398. See *Stilfragen*, Chpt. 1 for a description of this process.

77 Riegl and his contemporaries may also have been aware of references to rhythm by other ancient thinkers. Plato introduced rhythm, or “order in movement”, as both an ideal and human ordering principle, a gift from the Muses that is “essential to the whole of human life”. (See *Laws* II, 665a; *Timaeus*, 47e; *Protagoras*, 322b; in Plato, *Collected Dialogues*, eds. Edith Hamilton and Huntington Cairns (Princeton, 1961).) For Aristotle, so admired by Riegl’s professor Franz Brentano, the sense of rhythm was natural to humans and provided a fundamental order for poetry, music, and dance. (Aristotle, *The Poetics* (tr. Ingram Bywater) (New York, 1954), 223, 227.) Cicero declared that “[e]verything which can be measured by the ear [...] is called *numerus*, in Greek *rhythm*” (Cicero, *Orator*, (tr. H. M. Hubbell) (London, 1962), 354, 355). Aristides Quintilianus devoted seven chapters of his *De Musica* to an exploration of musical rhythm as an ordered system of durations marked by “arsis and thesis [...] sound and silence”, perceived by sight (dance), hearing (melody), and touch (pulse). His five-part “science of rhythmic” concerned durations, rhythmic feet, tempo, modulations, and rhythmic composition. (Aristides Quintilianus, *De Musica* in Andrew Barker, ed., *Greek Musical Writings II: Harmonic and Acoustic Theory* (Cambridge, 1989), 392–535, esp. 433–45.) And Lucian of Samosata, in his dialogue “The Dance”, described planetary movement as rhythmic dance. “[T]he concord of the heavenly spheres, the interlacing of the errant planets with the fixed stars, their rhythmic agreement and timed harmony, are proofs that Dance was primordial.” (Lucian of Samosata, “The Dance” in A. M. Harmon, ed., *Lucian*, Vol. V, Loeb Classical Library (London, 1972), 221.) For a fascinating etymology of the Greek word *ῥυθμός* (*rhythmos*), see Emile Benveniste, “The Notion of ‘Rhythm’ in its Linguistic Expression” in *Problems in General Linguistics* (trans. Mary Elizabeth Meek) (Florida, 1971), 281–88. Benveniste shows that the pre-Socratic term designated spatial form or disposition, and that only with Plato did it take on its more familiar significance as temporal cadence or meter. His interest in correcting a false etymology from nineteenth and twentieth-century dictionaries suggests the prevalence of the term in modern thought.

78 Riegl, *Spätromische Kunstindustrie*, 394–5.

must therefore acknowledge", Augustine wrote, "that in the pleasure of the senses, what pertains to reason is that in which there is a certain rhythmic measure."⁷⁹ Musical and visual forms alike were governed by "the supreme eternal presidency of numerical rhythm."⁸⁰ In rhythm, Augustine saw more than simply the ordering principle of sensory experience: rhythm was the very "Law of God",⁸¹ the rational and beautiful essence of all temporal human activity, sensible form, and divine structure. For the human mind, however, rhythm could only be perceived "in time [as a] silent movement".⁸² This temporally constituted rhythm of the senses, if properly contemplated, evoked the divine balance of eternal design. "So earthly things are subject to heavenly things, seeming to associate the cycles of their own durations in rhythmic succession with the song of the great whole, *universitatis*."⁸³ In human terms, divine rhythm found expression in demarcated time.

Riegl adopted Augustine's temporalized notion of form as rhythm, granting it priority as a regulating principle of visual art.

Symmetry and proportion are only special forms of appearance of a higher universal medium of the visual arts: rhythm. The medium through which unity – that is, the individual, self-contained form of natural objects in artworks – achieves its evident expression is also called rhythm (numerus) by Augustine. [...] All other aspects of beauty in works of visual art (to symmetry and proportion [...] we can add a third aspect, order) are simply particular modes of the expression of rhythm.⁸⁴

Rhythm preserved the unity of the self-contained form even as it linked individual elements; it thus became the very agent of formal coherence and articulation. "Consummate harmony" was achieved by properly balancing visual and historical "intervals".⁸⁵ Here we find, as with Leibniz, that rhythmic patterns took both temporal and spatial form. Just as rhythm regulated intervals of space in Roman art, so it governed intervals in the temporalized space of history as well. Indeed, the inherent, two-dimensional linearity of rhythm made it an apt metaphor for temporality, organizing Riegl's multi-dimensional and semi-autonomous art histories in terms of linear continuity.

But Riegl did not apply rhythm to temporal experience in a merely metaphorical sense. In visual form, rhythm was *experienced* temporally, as a movement of the eyes from point to point, as a series of successive observations; rhythm emerged as

the basis of artistic form in the temporal succession of instantaneous perceptions. Riegl's application of rhythm as a visual analytic inscribed the temporality of viewing into the artwork itself. Rhythm linked the formal articulation of the work with the temporal character of its perception, a connection easily masked by the apparent synchrony of the completed work 'gazing' out at the viewer. The viewer's perception was actually a composite of instantaneous glances, a temporal series, open to cultural and historical influence. Art depicted the rhythmic intervals of this formal temporality, and the viewer organized these intervals into rhythmic visual and historical continua. In Riegl's analysis, perception entailed a continuous process of rhythmic negotiation between subject and object, constituted by the viewer but anchored in a succession of contiguous, objective sensations. He thus depicted human temporality as a perceptual relationship emerging in the interaction between observer and observed. Physical and temporal continuity were human perceptual productions that art realized in visible form. For Riegl, artworks became the visible markers of an ever-on-going rhythmic negotiation between subject and object, man and the perceptual world.⁸⁶

What can we make of the widespread fascination for rhythm in nineteenth and twentieth-century thought? Within its varied field of application, two broad tendencies emerge: one scientific and the other sociopolitical. First, rhythm was advanced scientifically to characterize fundamental regularities of life, time, nature, art, perception, and movement. Throughout much of the nineteenth century, rhythm was invoked within rationalist and positivist frameworks to designate a basic quality of movement, time, and even thought, one that was open to rational understanding and empirical verification. As such, rhythm became subject to strenuous investigation aimed at locating its psychological and natural origins. This fascination exemplifies the nineteenth-century epistemic shift that Foucault traced in "Les Mots et les Choses", away from early modern synchronic taxonomies and toward a more temporalized and anthropological organization of knowledge.⁸⁷ Nietzsche's evocation of rhythm's

79 Augustine, *De Ordine*, selection reprinted in *Philosophies of Art and Beauty: Selected Readings in Aesthetics from Plato to Heidegger*, ed. Albert Hofstadter and Richard Kuhns (Chicago, 1964), 175.

80 Augustine, *De Musica* in *ibid.*, 191, 201. Augustine cited lunettes, the perforated windows in Roman halls, as architectural exemplars of rhythmic composition. See Riegl, *Spätromische Kunstindustrie*, 396–7.

81 Augustine, 202.

82 *Ibid.*, 201.

83 *Ibid.*, 186.

84 Riegl, *Spätromische Kunstindustrie*, 396. John Dewey made a similar equation: "Symmetry and rhythm are the same thing felt with [a] difference of emphasis." *Art as Experience*, 178.

85 Riegl, *Spätromische Kunstindustrie*, 398–9.

86 For a fuller discussion of this process, see Gubser, *Time's Visible Surface*, 187–200.

87 Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York, 1994).

incantatory appeal marked a further shift: in the late nineteenth century, rhythm's tendency to elude definition and plumb hidden depths of life became not so much a source of scientific frustration as a quality to embrace and celebrate, a mark of vitality that escaped the confines of human reason. It is perhaps this tendency to resist conceptual definition that made rhythm a favored rubric in the anti-epistemological endeavors of Nietzsche and, more recently, Gilles Deleuze and Félix Guattari.⁸⁸

Yet as Michael Golston, Andrew Hewitt, and Karl Toepfer remind us, rhythm was not simply a neutral descriptor. It was deployed not only in scientific analysis, but also as a technology for social control, including the mapping of the human body. Hewitt notes that the celebration of rhythm could serve as an ideology of social unity, positing "an immediate passage from natural-biological rhythms to the social-aesthetic".⁸⁹ Toepfer shows the cultural and political ramifications of the burgeoning concern for rhythm in turn-of-the-century German gymnastics and body culture.⁹⁰ These characterizations raise another paradigmatically Fou-

cauldian dimension of the fin-de-siècle fascination for rhythm by suggesting the close marriage of discourse and power. Often encumbered with a Darwinian language of social evolution and anthropological hierarchy, rhythm articulated human progress, marking evolutionary continuities and advances and also distinguishing peoples in terms of distinct, often racialized rhythmic sensibilities. It seems no coincidence that eurhythmics, a system of nationalistic musical education tied to bodily movement, was developed by the Swiss educator Emile Jaques-Dalcroze at the turn of the century.⁹¹ The tendency to link kinaesthetics and physiology with national character described in rhythmic terms contributed to programs for the socialization of children (Jaques-Dalcroze), the control of labor (Bücher), and the designation of national and racial hierarchies (Oswald Spengler, Carl Jung).⁹² During the Third Reich, as Golston shows, rhythmic marches, gymnastics, and dances were advocated as a means for instilling discipline, athleticism, and patriotism in Hitler Youth members.⁹³ As Theodor Adorno and Max Horkheimer pointed out, the Nuremberg rallies and

other totalitarian spectacles exaggerated the rhythmic regimentations and "constant initiation rites" practiced in all modern societies.⁹⁴

As this essay tries to demonstrate, rhythm is above all paradoxical. Active and passive, primitive and progressive, stimulating and calming, rhythm united opposing qualities in its many characterizations. It demarcated without dividing and connected without homogenizing; it was infinitely regular without becoming flatly uniform. In the nineteenth century, rhythm appeared in the mathematics of rationalism, the sensory data of empiricism, and the pulsings of vitalism, always bringing something of its vitality to the former and its metric to the latter. It traversed distinct schools of thought and informed prominent philosophical and ideological trends: the shift from rationalism through positivism to vitalism; the rise of scientific and later modernist aesthetics; even the emergence of fascism. If Riegl's work marked an important convergence in this expansive discourse, one that synthesized ideas from various intellectual sources, his preoccupation with rhythm was by no means singular. Many of Riegl's contemporaries found in it an *Urprinzip* of life, nature, time, and art. Indeed, the irony of writing this short history of a phenomenon believed to subtend history itself must be ac-

88 In Deleuze and Guattari's *Mille Plateaux* (1980), rhythmic pulsing marks the open, rhizomatic movement and smooth spaces of nomadic thought, a deeply non-Foucauldian reading of the term. Deleuze and Guattari argue that rhythms link different milieus as a kind of border pattern that connects rather than divides, that flirts with chaos but retains an underlying order. Though comprising "periodic repetitions" rhythm is not marked by the mere uniformity of absolute and undifferentiated downbeats. Instead, rhythms designate motivic differences and inequalities, the *qualitative* patterns and textures that define the expressivity of a "milieu" or "territory", and at the same time the ability "[t]o change milieus, taking them as you find them" (314). In his captivating work on dance and gesture, Andrew Hewitt has pointed out the homophonic and etymological linkages between rhythm, touch, and sensitivity offered by the German word 'Takt'. Deleuze and Guattari imply a similar connection: the tactful sensitivity to milieu that comes with flexible attentiveness to idiosyncratic rhythmic changeability. Deleuze and Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (tr. Brian Massumi) (Minneapolis, 1987), 310–350; Andrew Hewitt, *Social Choreography: Ideology as Performance in Dance and Everyday Movement* (Durham, 2005), 78–116, 184. Invoking Deleuze and Guattari's notion of a rhizome, Jonathan Crary argues that rhythm designates a detemporalized, delinearized field of movement that progresses without origin, conclusion, or direction. Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, 1991), 338–340.

89 Hewitt, 30.

90 Karl Toepfer, *Empire of Ecstasy: Nudity and Movement in German Body Culture, 1910–1935* (Berkeley, 1997).

91 See Emile Jaques-Dalcroze, *Rhythm, Music, and Education* (tr. Harold F. Rubenstein) (Dalcroze Society, Inc.: 1921). On Jaques-Dalcroze as well as a wider community of figures concerned with rhythm and bodily movement, see Toepfer, 13–21, 125–29.

92 See Oswald Spengler, *The Decline of the West, Vol. I* (tr. Charles Francis Atkinson) (New York, 1926), 227–8; Carl J. Jung, *Civilization in Transition* (tr. R. F. C. Hull) (Routledge and Kegan Paul, 1964), 508–9. Golston's article was invaluable for these citations.

93 Golston, 19–21. In particular, Golston notes the essay "Rhythmische Erziehung", by Wilhelm Twittenhoff, a seminar director for music instructors of the Hitler Youth.

94 Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment* (tr. John Cumming) (New York, 1998), 153. Adorno, of course, condemned jazz as a cultural fashion that masked conformity in apparent disruptiveness. "Jazz", he wrote, "is music which fuses the most rudimentary melodic, harmonic, metric and formal structure with the ostensibly disruptive principal of syncopation, yet without ever really disturbing the crude unity of the basic rhythm, the identically sustained metre, the quarter-note." Adorno, *Prisms* (tr. Samuel and Shiery Weber) (Cambridge, 1967), 121. While Adorno's characterization of jazz has faced stern criticism, his broader emphasis on the role of rhythm in enforcing social conformity still retains currency. For a brief analysis of debates about syncopation and rhythm during the interwar period, see Hewitt, 184.

knowledge. Rhythm could not be phenomenally isolated within the perceptual field any more than a thing could be distinguished from its shape. It stood as a sub-historical matrix defining the patterns of time – a precondition for historical development as such. Yet whatever its phenomenological paradoxes, one can indeed trace historically the rise of a discourse on rhythm beginning with early nineteenth-century aesthetic formulations, passing into the empirical life sciences, and emerging powerfully in vitalist formulations during and after the fin-de-siècle. By Riegl's time, the term rhythm marked a paradoxically non-mathematical *mathesis* articulating temporal and perceptual experience, a fundamental pattern that brought shape to life.