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# Beyond Poet Voice: Sampling the (Non-) Performance Styles of 100 American Poets

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Literary readings provoke strong feelings, which feed intense critical debates.[1] And while recorded literary readings have long been available for study,

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few scholars have applied to them the empirical methods that the digital humanities and interdisciplinary sound studies now offer.

At the Naropa Institute in 1974, John Cage nearly inspired a riot at a reading of "Empty Words," a text drawn from Henry David Thoreau's *Walden*. He read paragraphs from it, then lone sentences, then words, then syllables and letters, with long pauses in between. He recalled:

> After twenty minutes, an uproar began in the audience, and it was so intense, and so violent, that the thought entered my mind that the whole activity was not only useless, but that it was destructive. I was destroying something for them, and they were destroying something for me…
>
> It divided the audience, and at one point, a group of people came to protect me. Things were thrown, people came up on stage to perform, and it was generally an upsetting situation.[2]

We can well imagine what upset half the audience so much—the long intervals of silence, which audibly break the frame of performance, and the threat of nonsense, which literary culture has thoroughly metabolized by now, after Gertrude Stein, Cage and L=A=N=G=U=A=G=E poetry. And the other half, those who protected Cage, who valued what he was doing—what were they thinking? To some degree, they clearly accepted the Zen-minded Cage's refusal to entertain with more or less continuous, animated speech, in an effort to encourage introspection, perhaps a meditative state. They were, presumably, open to the "performance of nonperformance" as a concept and a practice.

That is the phrase used by Raphael Allison, in 2014, to describe a 1963 reading by John Ashbery.[3] Lesley Wheeler uses similar language to characterize contemporary academic poetry reading styles, circa 2006. After attending an exhausting number of readings at the Associated Writing Programs (AWP) conference that year, she concluded that, as a rule, "poets perform the fact that they are not performers…. [They do not] display emotions … but instead tend . . . to manifest intellectual detachment, if not in the poem's words then through carefully neutral delivery"[4]. And in 2016, Christopher Grobe argued that "What unites … today's writers and performers … is their refusal to adapt literary content into dramatic

[2] quoted in John Darnielle, "There Are Other Forces at Work: John Cage Comes to Halberstadt," *Harper's Magazine* (Jan. 2016): 1-9. Accessed June 20, 2017.

[3] Raphael Allison, *Bodies on the Line: Performance and the Sixties Poetry Reading* (Iowa City: Iowa University Press, 2014),7

[4] Lesley Wheeler, *Voicing American Poetry: Sound and Performance from the 1920s to the Present* (Ithaca: Cornell University Press, 2008), 140

form."[5]

The alleged refusal of contemporary writers to *perform* poetry and fiction may be reinforced by the likes of *Poets & Writers*, which distinguishes between "poet" and "performance poet" in its funding guidelines for Readings and Workshops grants, and by the National Endowment for the Arts-sponsored poetry recital competition founded in 2005, Poetry Out Loud (for which MacArthur served as a judge at California's state finals in 2017). The criterion for "Dramatic Appropriateness" includes the following advice:

***Advice for the student:***

- Movement or accents must not detract from the poem's voice.
- You are the vessel of your poem. Have confidence that your poem is strong enough to communicate its sounds and messages without a physical illustration. Let the words of the poem do the work.
- Depending on the poem, occasional gestures may be appropriate, but the line between appropriate and overdone is a thin one. When uncertain, leave them out.
- Avoid monotone delivery. If you sound bored, you will project that boredom to the audience. However, too much enthusiasm can make your performance seem insincere.

**QUALITIES OF A STRONG RECITATION:**
**The interpretation subtly underscores the meaning of the poem without becoming the focal point of the recitation. A low score in this category will result from recitations that have affected character voices and accents, inappropriate tone and inflection, singing, distracting and excessive gestures, or unnecessary emoting.**

Figure 1. Dramatic Appropriateness, Poetry Out Loud.

While the guideline against monotone is clear enough, what constitutes "unnecessary emoting" depends both on the poem's content and on received ideas, or cultural norms, about the regulation of affect. The safest approach, for an aspiring student competitor, would be to err on the side of unemotional. Though Poetry Out Loud does not use the term "neutral," that seems close to what it wants. The Oxford English Dictionary defines "neutral" as "Exciting no emotional response; provoking no strong reaction; innocuous, inoffensive," as well as "Displaying . . . no overt emotion; dispassionate, detached."[6]

If Wheeler is correct that "neutral delivery" is a default style in academic poetry reading today—and that is an open question, defined more precisely below—it arose amid complaints from poets as aesthetically incongruent as Charles Bernstein and Donald Hall. In 1985, Hall opined about reading styles allegedly inspired by the Beat and Confessional movements: "the poet's performance substi-

[5]Christopher Grobe, "On Book: The Performance of Reading," *New Literary History* 47, no. 4 (2016): 570

[6]Oxford English Dictionary. "Neutral, Adj." Oxford: Oxford University Press, 2013. Accessed June 3, 2017.

tutes an actorly texture (pitch, volume, gestures; screaming, jumping, singing) for *the real sound of words.*"[7] Bernstein sounded a similar note in 1998, approvingly citing Cage as an example of an "anti- expressivist" reading style, which Bernstein also uses to characterize "the common dislike, among poets, of actors' readings of poems . . . [when] the 'acting' takes precedence over *letting the words speak for themselves* (or worse, eloquence compromises, not to say eclipses, the ragged music of the poem)."[8]

Poets and scholars often opine about poetry readings in broad terms, characterizing the acoustic, non-verbal qualities of poetry performance with familiar binaries, e.g. theatricality vs. sincerity, expressive vs. neutral, affected vs. authentic, etc. As Grobe writes, "Essays on the subject [of poetry readings] skew polemical, with a knack for inchoate cliché and a tendency toward moral outrage"[9] To be fair, most such essays are popular, not academic—the think-pieces of their day or ours—but they are worth our attention in terms of reception studies. Not only that, but scholarly study of poetry readings can feel uncomfortably close to popular polemics, sometimes informed by a rich sense of literary history but fleshed out with anecdotal examples that betray clear aesthetic-ideological preferences.

In recent years, a number of popular complaints have appeared about a vocal cliché called Poet Voice. In Method Acting, it is a given that an actor's speaking style should reflect the psychology and mood of a character, rather than imposing a vocal cliché, a manner of speaking that may sound dramatic or actorly yet does not arise from or represent the distinctive nature of a particular character. Konstantin Stanislawski defined a vocal cliché pejoratively in criticizing "hack-actors" who "us[e] theatrical means of expression worked out long ago . . . [that] often destroy the logical stress and even the sense" of the words.[10] The emergence of Poet Voice as a term is an argument for the existence of at least one highly recognizable performance style practiced by contemporary poets in the U.S., a style that some listeners might call a neutral or anti-expressive style, and that other listeners might find unduly dramatic. In 2011, "Poet Voice" was defined in the *Urban Dictionary* as "A rhythmic style of reading poetry, akin to [being] on a boat in choppy seas. The reader's voice goes up and down, up and down, and the words of the [poem] are lost in the waves of pulsating intonation. *I should have taken Dramamine to offset her dread poet's voice.*" Vague as it is, the existence of

[7] Donald Hall, "The Poetry Reading: Public Performance / Private Art," *American Scholar* 54, no.1 (1985): 76; our emphasis

[8] Charles Bernstein, ed. *Close Listening: Poetry and the Performed Word* (New York: Oxford University Press, 1998), 10; our emphasis

[9] Grobe, "On Book: The Performance of Reading," 571.

[10] quoted in Jean Benedetti, *The Art of the Actor: The Essential History of Acting, from Classical Times to the Present Day* (New York: Routledge, 2007), 111, 112.

the term "Poet Voice" signifies a desire on the part of diverse poetry audiences to pinpoint dominant trends in performance styles that can feel highly conventional, even oppressive.

Many critics and poets love to hate Poet voice. What stands out, though, in the most recent popular polemics about it—e.g. poet Rich Smith's[11] on *City Arts.com* and poet Lisa Anne Basile's[12] in the *Huffington Post*—is that they go beyond claims about neutrality and drama, irony and sincerity, to make explicit allegations that cultural elitism has propagated Poet Voice. Smith takes sides in the neutral-vs.-dramatic debate, recommending that poets learn from theatre,[13] and characterizes Poet Voice style as "stuffy" "precious" "self-serious" "high-falutin" and "condescending." Basile, above all, wants to hear more individuality, voices distinct from one another in their reading styles. She goes further than Smith in claiming that homogenous MFA programs perpetuate the reading style:

> It is as if almost 90 percent of the poetry community is trying to be the one percent, and we're not buying it.
>
> Poet Voice is often proliferated by MFA programs with overwhelmingly White, straight professors. The educated are taught to enunciate clearly and so they do. And in their long-taught and long-learned efforts to rise above the ordinary people, they disseminate a viscous sound pattern….
>
> I have never met a friend for dinner who told me something beau-

[11] Since Smith's piece was published in 2014 in *City Arts* online, 144 comments had been posted as of October 2016, and it had been tweeted 1,912 times, in a sometimes heated discussion of the varieties of poetry performance, past and present, and with some sincere attempts to describe just what poets are doing with their voices when they read. The comments, unfortunately, have since been erased.

[12] See also Matt Petronzio's somewhat misleadingly titled "The Linguistics Behind the Insufferably Annoying Poet Voice" in *Mashables*, Feb. 7, 2015. He discusses poet voice with linguist Deborah Tannen, who comments that "Contemporary poetry … can be quite conversational, so poets might use 'poet voice' and intonation to frame what they're reading as poetry…. assuming a unique voice can also give the poet more agency, power or emphasis over his or her own words. Tannen talks about W.B. Yeats, whose recording of 'The Lake Isle at Innisfree' at the British Library moved her to tears. He used bizarre intonation, elongating and wavering the end of each line. 'It gave everything extra meaning because it wasn't the intonation you expected. It makes you pay more attention to it in a more intense and special way,' she says."

[13] This goes against both Hall and Bernstein, and, further back, against Rainer Marie Rilke, who was enthusiastic about the prospect of the "talking-machine" or phonograph; "the talking-machine [should] receive the sound picture of the verse sequence directly from the poet's own lips and not indirectly by way, say, of the actor… for he [the actor] almost always errs and goes astray."((See MacArthur's discussion of the dramatic/neutral debate over time in poetry performance in "Monotony," 40-41. Quoted in Wyatt Mason, "Letter of Recommendation: Audiobooks Read by the Author," *The New York Times Magazine*. July 13, 2016. Accessed July 30, 2016), 24

> tiful or exciting or moving in such a way that her sentences ended at strange intervals. One would never end an important sentence in forced down-speak or up-speak. The sincerity would be lost.

Poet Voice is being deployed, then, in the cultural-political arguments of the day, as an elitist imitative artifice, a vocal cliché that inhibits individual expression.

Juliana Spahr's and Stephanie Young's 2015 piece, "The Program Era and the Mostly White Room," offers some support for Basile's point here. While they do not consider poetry performance styles or Poet Voice, they persuasively establish, with considerable research, that mainstream U.S. literary culture, and indeed the rooms in which most poetry readings take place, are persistently white and male-dominated. This is despite the fact that those who study creative writing at universities are not, predominantly, white men. Spahr and Young legitimize the question—as a question worth pursuing in sound studies research—of whether or how white male poets influence prevailing or conventional performance styles.

What Basile describes as a "sincere," and implicitly unpretentious alternative to Poet Voice, sounds likes the semantically motivated patterns of conversational speech, or what linguists call natural speech, which can be characterized by irregular patterns in terms of pitch, timing and rhythm. In some sense, Poet Voice might designate a performative style that signifies membership in an elite group of highly successful poets, while a conversational manner might signify an anti-performative, naturalistic poetry-reading voice of the less lauded. Basile's efforts to characterize alternatives to Poet Voice, however, suggest how slippery the concepts of expressive or performative are, as empirical descriptions of a reading or speaking style.

In a 2016 article, MacArthur explored the origins of Poet Voice in secular performance and religious ritual and oratory, and sampled the intonation patterns of eight poets, four of whom seemed to use Poet Voice—Natasha Trethewey, Louise Gluck, Juliana Spahr, and Michael Ryan—and three of whom seemed to use comparatively expressive styles—Sylvia Plath, Frank Bidart, Kenneth Goldsmith—as well as recordings of Allen Ginsberg and Martin Luther King, Jr. MacArthur also offered a somewhat more precise definition of Poet Voice, under the term "monotonous incantation": "(1) the repetition of a falling cadence within a narrow range of pitch; (2) a flattened affect that suppresses idiosyncratic expression of subject matter in favor of a restrained, earnest tone; and (3) the subordination of conventional intonation patterns dictated by syntax, and of the poetic effects of line length and line breaks, to the prevailing cadence and a slow, steady pace." Here is an example of Trethewey, a poet commonly linked with Poet Voice, reading on the Academy of American Poets website. Some listeners might call this

voice neutral, others might call it expressive.

In *Bodies on the Line: Performance and the Sixties Poetry Reading* (2014), one of the most prominent recent book-length studies of poetry readings, Raphael Allison does not address Poet Voice, but he makes similar broad distinctions between contemporary reading styles. However, he argues contra Wheeler—unless performance trends have changed markedly between 2006 and 2014, which is possible—that a more expressive style "has won out," within the academy and beyond. He proposes the terms "humanist" and "skeptical" to characterize somewhat distinct poetry performance styles:

> the *humanist* strain [is] the legacy of a style of 1960s poetry reading … mainstreamed through the Beats and their imitators. It's characterized by what at first glance looks like faith in the power of "presence" …. its belief in the possibilities of aesthetic or personal coherence, and the power of poems to enact themselves and all their incongruous energies fully, faithfully, and at once…. [this style] is arguably what many mainstream poetry readings *subsist* on today—what crowds or (largish) groups come to witness, what performers typically proffer.
>
> The *skeptical* strain … is what this book is really about. If humanist reading has won out, it can't eclipse its counterforce, a kind of reading characterized by what at first glance looks like a lively, ludic resistance to pieties of humanism—a sense of openness and possibility of meaning, lack of stability or consistency, and ironic detachment… Neither humanist nor skeptical styles of reading exist independently or with full coherence; rather, such terms are useful, though somewhat abstract, pegs for pinning to the wall tendencies, conditions of reading, emphases, and accents. This book argues that the dialectic between humanism and skepticism—skeptical humanism?—is *audible* in poetry reading from major figures from the postwar era in a variety of ways [our italics].[14]

Allison's dialectic introduces a new set of binaries, behind which stand old binaries. For "skeptical," we read neutral / anti-expressive / ironic, linked to experimental poetry, especially the L=A=N=G=U=A=G=E school and, for Allison, John Ashbery and his alleged "performance of nonperformance"; for "humanist," here associated with the Beats and their imitators, we read expressive / dramatic / sincere, and for Allison, especially Allen Ginsberg. These binary terms certainly capture something of poets' and critics underlying aesthetic and philo-

[14] Allison, *Bodies on the Line*, xiii, xv

sophical commitments, which might well influence their performance styles—but how? While the flourishing scenes of contemporary American poetry, inside and outside the academy, offer dizzying variety and diversity, it would be difficult to overstate the importance of Ashbery and, by indirect association, L=A=N=G=U=A=G=E poetry, as both experimental influences on many poets and favorite antagonists of others. (This is one reason it makes sense to compare recordings from PennSound, which is associated with L=A=N=G=U=A=G=E poetry, with other poetry archives.) And it seems plausible that at least some of those who have resisted Ashbery's influence would align themselves with the Beats and/or Confessional poetry. So again, in aesthetic-ideological terms, Allison's binary seems useful. To go back to the Cage reading for a moment, we could probably sort his audience into skeptical and humanist listeners. The skeptics were the ones protecting Cage, the humanists were the ones throwing things.

Allison develops his argument with thick descriptions of recordings of seven poets (Ashbery, Ginsberg, Robert Frost, Charles Olson, Gwendolyn Brooks, William Carlos Williams, and Larry Eigner), and his preference for the skeptical strain is clear. It is also, unavoidably, ideological and aesthetic (including in the focus on Olson, Williams, and Eigner, all poets beloved of the L=A=N=G=U=A=G=E school). Who wants to be a naïf, to "subsist" on a poetics of presence that has been dismantled by Derrida and company, rather than join a "lively, ludic resistance"? Allison argues that even Ginsberg felt some ambivalence about the humanist style he allegedly embodied much of the time, occasionally displaying "a subterranean resistance to live reading."[15]

The salient point here, however, is that Wheeler and Allison came to seemingly opposite conclusions about dominant trends in poetry performance styles. Has their listening experience exposed them to very different groups of poets? This is possible. Or would Wheeler hear a poetry reading as "neutral" that Allison would call "humanist," and thus more expressive? Or is the pendulum swinging back from neutral toward dramatic again? And are there, quite possibly, more than two performance styles or tendencies at issue here? Despite all the work inspired by Bernstein's needful call, in *Close Listening: Poetry and the Performed Word* (1998), to take the poetry reading seriously as an object of study, it has proved remarkably difficult to escape the oversimplification of binaries, such as neutral-expressive, ironic-sincere, skeptical-humanist.

The poetry reading has, for decades, been an unavoidable aspect of the professional poet's life. And the institutionalization of creative writing, government sponsorship of the arts, access to audio and video recording technologies, and the digitization of audio recordings, have accelerated the number of poetry readings

[15] Allison, *Bodies on the Line*, 231

and provided scholars with greater access to recordings of them. This situation presents profound opportunities for sound studies research, which have been answered by groundbreaking work.[16] However, among poetry scholars, even those who study poetry recordings, the methods of linguistics, and the computational approaches of the digital humanities, are often missing in the study of recorded poetry readings. Our research addresses that gap, and also offers ways to test the rich intuitions of traditional poetry scholarship about poetry reading styles and their evolution.

Of course, humanities scholars—not to say humanists in Allison's sense—are adept at generating broadly persuasive insights from a few choice examples. Allison's intuitions about the aesthetic ideologies that do battle in performance styles may be precisely correct, but the problem is in the generalized assertions from this, about sound and voice—that *this* is what contemporary poets do, *and* that it is audible. Strings of adjectives are of limited value in explaining how poets use their voices in distinct ways from one another when they read a poem, or how listeners' expectations might influence what they hear. What would it mean for a "skeptical" or "humanist" or "neutral" strain, tendency, emphasis, or accent to be *audible*? That is, perceptible, of course, but also discernible from other styles? What exactly would a poet with a strong humanist or skeptical bent do with her voice? If we think we have some answers to that question, can they be empirically tested in any way? And, importantly, how might our aesthetic and ideological preferences lead us to expect that the poets on our team will sound, for instance, neutral, ironical or sincere? What does irony sound like? What does a poetics of presence sound like? And what is going on in all that wiggle room between ironic detachment and so-called presence? Can any of Smith's and Basile's claims, about the qualities of Poet Voice and how it has spread, be confirmed? And how does Poet Voice relate to Wheeler's and Allison's arguments about neutral and expressive, skeptical and humanist performance styles?

In this regard, Tanya Clement and Chris Mustazza have developed notions of "distant listening" and "machine-aided close listening." Clement defines "distant listening" as "The opportunity to investigate significant patterns within the context of a system that can translate 'noise'…into patterns, within a hermeneutic

[16] See High Performance Sound Technologies for Access and Scholarship (HiPSTAS) led by Tanya Clement, the crucial work of Reuven Tsur in cognitive poetics, and Jason Camlot's project "SpokenWeb: Conceiving and Creating a Nationally Networked Archive of Literary Recordings for Research and Teaching," which includes the development of computational tools both for literary analysis and for the automation of metadata development for large corpuses of digitized literary audio (spokenweb.ca). See also the special issue in 2015 of *Thinking Verse* devoted to intonation in 19th through 21st century poetry in English, German, and French, co-edited by Natalie Gerber and David Nowell Smith, and an Arcade Colloquy on Prosody, co-curated by Gerber and Eric Weiskott, forthcoming in 2018. This list is by no means exhaustive.

framework that allows for different ways of making meaning with sound, opens spaces for interpretation," and she extends her sense of it as the attempt to analyze large audio archives, using supervised machine learning to discover patterns at a scale that an individual human listener could not.[17]

This research project has allowed both kinds of insights, in part because 100 sampled recordings lies in between the scales of close and distant listening. That is, although 100 recordings are a small number to analyze, compared to truly large-scale digital humanities projects, our analysis reveals patterns we did not anticipate, about the performance styles of poets whose work none of us are deeply acquainted with, about which we had formed no opinions. At the same time, this project also confirmed some of our impressionistic intuitions about the performances styles of poets we know well, and about poetry performance versus conversational speech.

Until recently, it has been difficult to test whether persuasive insights about performance styles match empirical data about recorded performances. That is, indeed, a primary goal of this research project. Specifically, we investigated four overarching questions: 1) What differences in prosodic measures exist, in a very limited sample of recorded poems as read by 100 poets, between conversational speech and poetry reading? 2) What differences in prosodic measures exist among different groups of poets? That is, if we can quantify less and more Formal, less and more Conversational styles of reading, less and more Expressive, and less and more Dramatic reading styles (see Twelve Prosodic Measures below), how common are each of these, and are any them associated with a particular generation, gender, sexual or racial/ethnic identity, educational background, recording context, or archive? 3) Do poets who might sort out, in aesthetic-ideological terms, into "skeptical" and "humanist," use distinct performance styles? 4) And finally, can we quantify Poet Voice more precisely, and if so, how common is it in this sample of 100 poets? (Here we

[17] See Tanya E. Clement, David Tcheng, Loretta Auvil, Boris Capitanu, João Barbosa, "Distant Listening to Gertrude Stein's 'Melanctha': Using Similarity Analysis in a Discovery Paradigm to Analyze Prosody and Author Influence," Literary and Linguistic Computing 28, no. 4 (2013): 582-602; and "Towards a Rationale of Audio-Text," Digital Humanities Quarterly 10, no. 3 (2016). Building on Franco Moretti's concept of distant reading, Mustazza emphasizes the insights that machine-assisted listening may lead us to, insights that may contradict or supplement the insights of unassisted, impressionistic close listening, rather than relying on digital tools to listen at scale for us. He speculates that such an approach may advance our ability to perform close listening through the use of technological prostheses—the process I have termed Machine-Aided Close Listening—while staying in the realm of augmented listening, rather than surrogate listening. One assumption here is that we hear aspects of the sonic materiality of the performed poem and understand them impressionistically, and that these impressions can be confirmed empirically through digital tools, presented alongside the text of a poem.(Chris Mustazza, "Machine-aided close listening: Prosthetic synaesthesia and the 3D phonotext," Forthcoming in Digital Humanities Quarterly, 2018), 6.

used Trethewey and Glück as our models of Poet Voice.)

When we began this study, we thought that if we could sample, quantify and analyze the vocal performance styles of 100 American poets, we might demonstrate and explore the prosodic features that critics and poets are responding to. The qualitative and quantitative methods of linguistics, augmented by statistical analysis and basic insights about the neuroscience of speech perception, helped us test and refine such judgments, pose new questions, and offer empirical alternatives to complement impressionistic approaches to poetry performance. A basic understanding of the linguistics and neuroscience of speech perception, which are unfamiliar to many scholars who study poetry recordings, is necessary to understand the methods, motivations and conclusions of our research.

## The Linguistics and Neuroscience of Speech Perception and Prosody

When we listen to a poem read out loud, the tone of voice obviously affects our interpretation of the words, and our perceptions of the poet. In research on the perception of tone of voice, Jody Kreiman and Diana Sidtis (2011) write that "studies … support the idea that listeners normally expect semantic and intonational meanings to be concordant"[18] They elaborate:

> Some authors … have claimed that normal adults usually believe the tone of voice rather than the words. Experimental studies suggest that … this … depends on how large the discrepancy is between the emotional and the linguistic meaning and how context is guiding the listener's perceptions. For example, the contrast in "I feel just fine" spoken in a tense, tentative tone might be politely ignored, while, "I'm not angry" spoken in "hot anger" would not. Extreme discrepancies between the semantics and the emotional prosody stand out as anomalous … We notice when inconsistencies (which are the basis of verbal irony and sarcasm) occur, and often these incidents incite perplexity, fear, or humor…. [T]he fundamental frequency of the human voice [pitch] … heads the list of important cues for emotional meanings.[19]

[18] Jody Kreiman and Diane Sidtis, *Foundations of Voice Studies: An Interdisciplinary Approach to Voice Production and Perception*. New York: Wiley, 2011, 304.

[19] Kreiman and Sidtis, *Foundations of Voice Studies*, 305-306.

Poetry performance is full of such anomalies, in which the tone of voice contrasts with the affective content or mood of a poem. This occurs, for instance, when a poem with hilarious content is delivered with flat intonation, deadpan—to be more precise, when a very narrow pitch range is used, approaching monotone (the monotone delivery of comic Steven Wright would be an apt example of this). Criticism and analysis of poetry performance styles are often motivated by perceived discrepancies between a poet's vocal performance style, on the one hand, and the audience's preconceptions about the content and form of a poem, and their expectations for an appropriate or normative poetry reading style. It is all too common to like a poem on the page and be disappointed by its performance, and vice versa.

In linguistics, prosody refers broadly to acoustic qualities of speech such as pitch (rate of vocal fold vibration, termed the fundamental frequency), [20] loudness, and rhythm, timing and speaking rate. Intonation patterns—the rise and fall of the voice, measured as pitch—as well as speech stress, speaking rate and rhythm, interest poets a great deal. The poetics of Robert Frost, for one, hinge on "tone of meaning … without the words" ("Never Again Would Bird's Song Be the Same"). When we listen to a poetry reading, or a political speech, radio podcast, sermon, lecture, dramatic monologue, stand-up comedy—when we listen to any string of utterances—we constantly, half-consciously assess how well the speaker captures and keeps our attention and matches our auditory expectations. To this assessment, the prosodic features of the speaker's voice are central.

Linguistic research demonstrates that speakers vary their prosodic patterns based on paralinguistic context, most notably in response to different types of interlocutors. (We might recall here Basile's sense that a dinner conversation in Poet Voice would sound insincere.) For example, parents talking to their babies produce higher and wider pitch ranges than they do when talking to another adult [21] In a laboratory setting, people speak more slowly and louder amid noisy environments—this is known as the Lombard Effect [22] Martin Luther King, in a record-

[20] Note: The human voice has multiple component frequencies, or harmonics, which are multiples of the fundamental frequency, the rate of vocal fold vibration, which we hear as the basic pitch of the voice. Other properties of vocal fold vibration can influence the sound quality of speech, e.g. making a voice sound breathy, creaky, etc. Depending on the shape, length, size and configuration of an individual's vocal tract, certain harmonics are amplified, while others are dampened, resulting in resonant, or formant, frequencies that give an utterance its distinctive sound. Such subtleties of voice, while surely relevant in performance styles, are beyond the scope of this study.

[21] Anne Fernald, "The Perceptual and Affective Salience of Mothers' Speech to Infants." In *The Origins and Growth of Communication*, 5-29, edited by L. Feagans et al. Norwood, NJ: Ablex, 1984, 1992.

[22] Etienne Lombard, " Le signe de l'elevation de la voix" ("The sign of the rise in the voice"). *Annales Maladiers Oreille, Larynx, Nez, Pharynx* 37 (1911): 101-119.)—and when their interlocutor is hearing-

ing of "Letter from a Birmingham Jail," uses a much narrower pitch range and quite different intonation patterns, compared to his "I Have a Dream" speech.[23]

Just as speech production can vary tremendously according to paralinguistic context, our listening history or experience deeply influences speech perception—including of performative speech, like poetry readings. Psychologists have noted how we carry a sort of buffer of recent history, an implicit memory, such that specific words (or words representing related concepts) repeated over time are processed differently (faster). This is called "priming," and it fits with the growing recognition that the brain is perhaps best described as a tremendously complex statistical prediction machine. Of course, prediction is especially important for language, which is necessarily temporally structured and extended.[24] The brain also automatically maintains expectations about more complex patterns in timing or pitch, holding more than one prediction at a time in memory.

When we attend a poetry reading, all of the other poetry readings we have attended help form our expectations for that one, including the prosodic patterns a poet will use. Even without paying attention, our brains "know" within a fraction of a second (150 milliseconds) that an acoustic prediction was violated; the same goes for violations of semantic and syntactic predictions. When recorded via EEG (electroencephalogram) or MEG (magnetoencephalogram), which measure electrical activity in the brain, this is called a "mismatch negativity" or MMN. And rhythm or strict temporal regularity, called isochrony-what we might call strict adherence to a formal metrical pattern in a poem, or the reading of a free verse poem in this manner-is one type of pattern.

In one way—a deep way—we are programmed from birth to test our expectations, in this case expectations of prosodic patterns, seeking experiences—and perhaps poetry readings—that are neither too predictable nor too surprising.

impaired (Picheny et al., 1986). Just asking an individual to "speak clearly" produces speech that is slower and has a higher pitch range than laboratory conversational speech ((A. R. Bradlow, N. Kraus, and E. Hayes, "Speaking Clearly for Children with Learning Disabilities Sentence Perception in Noise," *Journal of Speech, Language, and Hearing Research* 46, no. 1 (2003): 80-97.

[23] Mark Liberman, "Martin Luther King's Rhetorical Phonetics," *Language Log*. University of Pennsylvania. Jan. 15, 2007. Accessed August 1, 2017.

[24] One recent study of temporal sound perception summarizes the presently influential view: "Brain function can be conceived as a hierarchy of generative models that optimizes predictions of sensory inputs and minimizes 'surprise.'" H.N. Phillips, et al. "Hierarchical Organization of Frontotemporal Networks for the Prediction of Stimuli across Multiple Dimensions." *Journal of Neuroscience* 35, vol. 25 (2015): 9255-64. In other words, the brain generates and constantly chooses among many models that predict the sensory inputs it is most likely to receive, with an apparent goal of optimal accuracy and minimal surprise, or error. The study goes on to show how we are continuously, unconsciously tracking and predicting sound timing across multiple dimensions such as frequency, intensity, duration, and silent gaps or pauses—precisely the features that distinguish prosody.

This phenomenon is known in cognitive neuroscience as the "Goldilocks effect."[25]Too little unpredictability bores us. Too much confuses us and isn't rewarding. This compulsion to learn, to attend to the reasonably unpredictable, is codified in the mathematics of information theory, developed by Shannon and Weaver in the mid-20th century, which shows that a totally predictable pattern is also a totally uninformative one. So when we encounter patterns that repeat over and over, both our subjective engagement as well as our neural responses tend to wane-a process called habituation. This tendency may account for audiences' frustration with the perceived regularity of Poet Voice.

Linguists have also shown that the perception of sounds and words in speech can vary based on multiple sociolinguistic factors related to the paralinguistic context. For instance, the perceived gender of a speaker can influence the linguistic interpretation of a word,[26] as can the speaker's perceived characteristics related to race, ethnicity, national origin,[27]regional background,[28] sexual orientation,[29] and age.[30][31] While three elite white male poets may read their poetry in a similar manner, it is quite possible that the perception of these shared identity markers influences us to actually hear such poets as sounding similar in performance style. Or if we place ourselves in a particular aesthetic-ideological lineage of poetry, we may be predisposed to enjoy the reading style of a poet in that lineage, and to perceive that style as highly distinct from, the reading style of a poet whose aesthetic-ideological orientations we do not share.

If we listen to the first few minutes of Allen Ginsberg reading *Howl* (here in the KPFA 1956 recording at PennSound), we perceive that he uses the same relatively monotone cadence over many long lines. For many listeners, this repetition is probably lulling—whether we perceive this as pleasant or unpleasant—and we probably attend less to the semantics of what he is saying than to that sonic pattern. At the same time, his vocal pitch level is gradually rising, and that may help keep our attention, as it suggests change or intensification in mood. As Robert Hass put it in "Listening and Making," an essay on rhythm in free verse in *Twen-*

[25]The principle spans age and behavioral domain, from infant attention to language learning to computer-based "brain-training" games.

[26]K. Johnson, E.A. Strand, and M. D'Imperio, "Auditory-visual Integration of Talker Gender in Vowel Perception," *Journal of Phonetics* 27, vol. 4 (1999): 359-384.

[27]D.L. Rubin and K.A. Smith, "Effects of Accent, Ethnicity, and Lecture Topic on Undergraduates' Perceptions of Nonnative English-speaking Teaching Assistants," *International Journal of Intercultural Relations* 14, vol. 3 (1990): 337-353.

[28]Niedzielski, N. "The Effect of Social Information on the Perception of Sociolinguistic Variables." Journal of Language and Social Psychology 18, vol. 1 (1999): 62-85.

[29]B. Munson, S.V. Jefferson, and E.C. McDonald, "The Influence of Perceived Sexual Orientation on Fricative Identification," *The Journal of the Acoustical Society of America* 119, vol. 4 (2006): 2427-2437.

*tieth Century Pleasures* (2000), "Repetition makes us feel secure and variation makes us feel free."[30]But though we all share this heuristic, we are still individuals. Having different brains with different experiential histories means that we engage the world with different statistical predictions.

This surely applies to Wheeler and Allison's opposing conclusions about dominant performance styles in contemporary American poetry reading. When we listen to a recorded poem or attend a poetry reading, what counts as boring, comfortingly familiar, surprising or refreshing depends on our internal models, our predictions, which are in turn based on our previous experiences of listening to and reading poetry. Monotonous or otherwise highly repetitive prosodic patterns in poetry reading may comfort some listeners and bore others, while more idiosyncratic prosodic patterns in poetry reading may annoy the former and reward the latter.

When we listen to poets read, we are responding on a nonverbal level to their prosodic patterns, and to paralinguistic, non-verbal elements and contexts. We need to attend to these prosodic patterns and paralinguistic, non-verbal elements and contexts if we want to offer histories of poetry performance with much explanatory power. Certainly, as Jennifer Stoever writes, "listening [is] an interpretive site where racial difference is coded, produced, and policed."[31] The same is true of gender difference and many other identity markers and cultural factors related to authority and authenticity.[32] If it is remarkably difficult to escape our stereotypical expectations and perceptions of what a person's voice "should" sound like, that is partly because our brain uses such expectations to make predictions about our sonic experience. As well as refining our sense of our preferences in performance styles, this study may begin to extend some of the insights of language ideology research.[33] At the least, our approach to empirical analysis of poetry recordings should provide humanities scholars with ways to refine our terms in describing performance styles, and to test whether and how our own biases, aesthetic-ideological preferences and listening histories may influence our perception of poetry performance styles.

[30]Robert Hass, "Listening and Making," *Twentieth Century Pleasures*. New York: Ecco (2000): 115

[31]Jennifer Stoever, "Splicing the Sonic Color-Line: Tony Schwartz Remixes Postwar Nueva York," *Social Text* 28, no.1 (2010): 62.

[32]As Shai Burstyn notes in the article "In Quest of the Period Ear," about attempts to imagine how contemporary audiences experienced medieval music, "culture plays a highly significant—though not exclusive—role in shaping the cognitive skills of its members."((Shai Burstyn, "In Quest of the Period Ear," *Early Music* 25, no. 4 (1997): 695).

[33]See Rosina Lippi-Green's work demonstrating the role of accent and other linguistic markers, including intonation patterns, in civil rights cases of discrimination.

## Data and Methods

In choosing 100 American poets to sample for their performance styles, we aimed for a variety of aesthetic and educational backgrounds, as well as some ethnic, racial, class, and sexual diversity, with fifty poets born before 1960, and fifty after 1960. The rationale here was to include several generations of poets, e.g. those whose careers developed amid influential midcentury and later movements—such as the Beat, Black Arts and Black Mountain / Projectivist movements, Confessional poetry, the New York School, and the L=A=N=G=U=A=G=E School—as well as to sample poets who came of age in the complex aftermath of those movements. The oldest poets sampled are Barbara Guest (born in 1920), Robert Bly and Frank O'Hara (born in 1926), the youngest Cecilia Llompart and Jamaal May (born in 1982 and 1985, respectively). We included twenty poets who studied creative writing at the elite Iowa Writers' Workshop at the University of Iowa, and also aimed to include a balance of poets who did their graduate work at both private and public universities. All of the poets included in the study have published at least one book, and most of the older poets have published many more; many of the poets have been highly recognized by the literary establishment with various awards and prizes. For example, ten have received MacArthur "Genius" Awards (John Ashbery, Jorie Graham, Robert Hass, Terrance Hayes, Ann Lauterbach, Heather McHugh, Adrienne Rich, Kay Ryan, Mark Strand, and Ellen Bryant Voigt) and thirteen have received the Pulitzer Prize (John Ashbery, Rae Armantrout, Rita Dove, Louise Glück, Jorie Graham, Yusef Komunyakaa, Ted Kooser, Kay Ryan, Tracy K. Smith, Mark Strand, James Tate, Natasha Trethewey, and Franz Wright).

Most of the recordings were found on the websites of PennSound, Poets.org (the Academy of American Poets, often linked to SoundCloud), and the Listening Booth at Harvard University's Woodberry Poetry Room.[34] PennSound, founded by Charles Bernstein at the University of Pennsylvania, is the largest online archive of poetry audio in the world, with more than 5,000 hours of audio by 564 poets. PennSound represent a more experimental strain in American poetry, affiliated in part with L=A=N=G=U=A=G=E poetry, while Poets.org and the Listening Booth were taken to represent more mainstream academic poetry. A small number of recordings were also accessed on the websites of the Poetry Foundation, Wave Books (linked to SoundCloud), Slate and a few others. Though there is some overlap in representation of poets among these archives, PennSound includes a large number of poets who are not presently found on

[34] The Listening Booth lists poems as individual playable tracks, but does not actually link to an individual track, so the links provided in Figure 1 connect to an entire reading by the poet relevant poet.

the other sites, and Poets.org and the Listening Booth include a large number of poets who are not found on PennSound. Other researchers would doubtless choose a different group of 100 poets.[35]

Whenever possible, we selected recordings of poems approximately one to two minutes long, and analyzed the first 60 seconds. Though shorter poems might be thought to be lyrics, we did not attempt to choose or classify poems according to mood, topic, or form. Most of the recordings were made no earlier than the 1990s, with the exception of Ginsberg, O'Hara, Baraka and Ashbery; the most recent date from 2016. We took care to sample recordings only once the poet actually began to read the poem; introductory chitchat, which is frequently delivered with distinct prosodic patterns, was not included or analyzed, though a comparative analysis of poetry and non-poetry speech in poetry readings would certainly be worth doing in the future.

Two caveats. First, this study does *not* undertake—beyond distinguishing between studio and live recordings, and noting the source online archives—to trace the provenance of the recordings or the process of their digitization, sound editing, or original recording format. Such processes may affect a recording's speed and pitch. However, highly significant changes are more common with older recordings that have been transferred a number of times (e.g., some recordings of Orson Welles's radio plays, as Neil Verma has pointed out, originated on transcription discs, and were transferred to vinyl to magnetic tape to CD and finally MP3s). We would also note that most of these recordings are not of commercial broadcast quality, and thus did not go through extensive post-production editing. In choosing mostly contemporary recordings to analyze, we aim to compare recordings created in similar media formats—often originally MP3s, converted to WAV files for our analysis—and to avoid some of the challenges of media-archaeological work with older recordings, the sort that Jason Camlot has performed in, for instance, "Historicist Audio Forensics: The Archive of Voices as Repository of Material and Conceptual Artefacts." While we hope in the future to apply our methods of analysis to older recordings, from the Modernist era and earlier, more research on their provenance and media transformations would first be necessary.

Second, this study does *not* attempt to consider how much an individual poet's performance style differs from poem to poem, over time and for different audiences, or how their speech in interviews or introductory remarks to poems might

[35] For the record, MacArthur has heard 31 of the 100 poets read their work in person, is personally acquainted with nineteen of them, has published critical work on and/or interviews with six of them, and studied creative writing with four of them, as instructors or fellow students at Warren Wilson College's MFA Program.

compare to their reading of poems. Clearly these are questions worth investigating in further longitudinal research; Kenneth Sherwood has done interesting work in this area. While the data from our small sample is of some use in characterizing an individual poet's performance style at a given point in their career, and in formulating hypotheses for further study of individual poet's evolution as a performer, it should not be taken as conclusive; it is *most* useful as a representative sample of contemporary poetry reading styles in practice, and perhaps, as culturally sanctioned and encouraged. Data about an individual's poet's performance style is also, of course, interesting in comparison to other poets and other types of performative speech.

In analyzing the 100 samples, we categorized the poets in a number of ways. Our purpose here was to test whether any aspects of identity, background, aesthetic or academic affiliation or performance context or medium might correlate, individually or in combination, with particular performance styles. We considered generation (birth year), biological sex,[36] sexual orientation, race / ethnicity, educational background, and recording context (studio recording versus live reading). Table 1 lists poets by name, birth year, and so on, including the title of the poem sampled and the year and length of the recording, and Figures 2 and 3 show the breakdown of Male and Female Poets sampled by corpus. Table 1 also includes statistics about twelve prosodic measures for each poet, explained below.

| Name | ID | Bio. Sex | Education | Education Type | Corpus | Race/ Ethnicity | BY | Rec. Year | Poem (with link) | Length | Recording Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01_Guest ,Barbara | Heterosexual | F | Berkeley | Public | Woodberry | Caucasian | 1920 | 1983 | "Red Lilies" | 01-Jan-70 | Reading |
| 02_Rich, Adrienne | Other | F | Radcliffe | Private | Woodberry | Jewish-American | 1929 | 2002 | "What Kinds of Times Are These" | 01-Jan-70 | Studio |
| 03_Cortez, Jayne | Heterosexual | F | Compton Community College | Public | Hammer Museum/ Youtube | African-American | 1934 | 2011 | "Two Rape Cases in the 1980s" | 01-Jan-70 | Reading |

[36] For the purposes of linguistic analysis, we categorized biological sex as either male or female. While we recognize gender identity to be a cultural construct, biological sex at birth strongly correlates with the size and length of the vocal tract in adulthood, which typically correlates in turn with a higher natural pitch range in biological females, compared to biological males. An analogy can be made between the human vocal tract and bass, tenor, alto and soprano saxophones; the pitch range of each instrument is determined by its size, shape and length. In terms of pitch range and average pitch, this makes comparisons among speakers of the same biological sex somewhat more meaningful than comparisons among speakers of different biological gender. For instance, bilingual Japanese women have been to use higher pitch in speaking Japanese than in speaking English (Ohara), and Japanese women have been found to use consistently higher pitch than Dutch women (Bezooijen). Of the 100 poets sampled, 99 retain the biological sex of their birth; one transgender poet, Trace Peterson, has undergone hormone therapy in changing from male to female, and she is grouped with the female poets. Sexual orientation we defined as heterosexual and other. We did not attempt to confirm the gender identity of poets—that is, whether or not they consider themselves to be cisgender.

| Name | ID | Bio. Sex | Education | Education Type | Corpus | Race/ Ethnicity | BY | Rec. Year | Poem (with link) | Length | Recording Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 04_Sanchez, Sonia | Heterosexual | F | NYU/ Hunter College | Private | Def Poetry Jam | African-American | 1934 | 2010 | "Poem for Some Women" | 01-Jan-70 | Reading |
| 05_Lorde, Audre | Other | F | Hunter College | Public | Audre Lorde: The Berlin Years (film)/ Youtube | African-American | 1934 | 1992 | "1984" | 01-Jan-70 | Studio |
| 06_Clifton, Lucille | Heterosexual | F | Howard University/ SUNY Buffalo | Private | Academy | African-American | 1936 | 2012 | "Homage to My Hips" | 01-Jan-70 | Reading |
| 07_Jordan, June | Other | F | Barnard | Private | Academy | African-American | 1936 | 1992 | "Poem about Intelligence" | 01-Jan-70 | Reading |
| 08_Howe, Susan | Heterosexual | F | Boston Museum School | Private | PennSound | Caucasian | 1937 | 2008 | "Stage Snow" | 01-Jan-70 | Reading |
| 09_Hejinian,Lyn | Heterosexual | F | Harvard | Private | PennSound | Caucasian | 1941 | 2005 | "'The sea as it receives" | 01-Jan-70 | Reading |
| 10_Derricote, Toi | Heterosexual | F | NYU/ Wayne State | Private | Penn State/ Youtube | African-American | 1941 | 2011 | "Mysteries of Pittsburgh" | 01-Jan-70 | Reading |
| 11_Lauterbach, Ann | Heterosexual | F | Columbia | Private | PennSound | Caucasian | 1942 | 2014 | "Without Irony" | 01-Jan-70 | Reading |
| 12_Gluck, Louise | Heterosexual | F | Sarah Lawrence/ Columbia | Private | Academy | Caucasian | 1943 | 1992 | "Wild Iris" | 01-Jan-70 | Reading |
| 13_Voigt, Ellen Bryant | Heterosexual | F | Iowa | Public | Bread Loaf | Caucasian | 1943 | 2011 | "Groundhog" | 01-Jan-70 | Reading |
| 14_Ryan, Kay | Other | F | UCLA | Public | Academy | Caucasian | 1945 | 2006 | "Home to Roost" | 01-Jan-70 | Reading |
| 15_Bang, Mary Jo | Heterosexual | F | Columbia | Private | Academy | Caucasian | 1946 | 2004 | "Catastrophe Theory III" | 01-Jan-70 | Studio |
| 16_Coleman, Wanda | Heterosexual | F | CSU-Los Angeles | Public | Youtube | African-American | 1946 | ? | "Wanda, Why Aren't You Dead?" | 01-Jan-70 | ? |
| 17_Armantrout, Rae | Heterosexual | F | UC Berkeley/ San Francisco State | Public | PennSound | Caucasian | 1947 | 1998 | "Heart of It" | 01-Jan-70 | Reading |
| 18_Berssenbrugge, Mei-mei | Heterosexual | F | Reed/ Columbia | Private | PennSound | Asian-American | 1947 | 2006 | "Health" | 01-Jan-70 | Reading |
| 19_McHugh, Heather | Heterosexual | F | U of Denver, Harvard | Private | Academy | Caucasian | 1948 | 1992 | "What He Thought" | 01-Jan-70 | Reading |
| 20_Myles, Eileen | Other | F | UMassBoston | Public | PennSound | Caucasian | 1949 | 1998 | "Voluminous" | 01-Jan-70 | Reading |
| 21_Graham, Jorie | Heterosexual | F | Iowa | Public | PennSound | Caucasian | 1950 | 1998 | "'The Spectators" | 01-Jan-70 | Reading |
| 22_Dove, Rita | Heterosexual | F | Iowa | Public | Academy | African-American | 1952 | 2011 | "Reunion 2005" | 01-Jan-70 | Reading |
| 23_Mullen, Harryette | Other | F | UC Santa Cruz, UT Austin | Public | Academy | African-American | 1953 | 2001 | "Present Tense" | 01-Jan-70 | Reading |
| 24_Addonizio, Kim | Heterosexual | F | San Francisco State | Public | Academy | Caucasian | 1954 | 2000 | "What Do Women Want" | 01-Jan-70 | Studio |
| 25_Chin, Marilyn | Unknown | F | Iowa | Public | Poems Out Loud | Asian-American | 1955 | 2002 | "Blues on Yellow" | ? | Reading |
| 26_Alexander, Elizabeth | Heterosexual | F | U of Pennsylvania | Private | Academy | African-American | 1962 | 2015 | "Autumn Passage" | 01-Jan-70 | Reading |
| 27_Rankine, Claudia | Heterosexual | F | Columbia | Private | PennSound | African-American | 1963 | 2011 | "Don't Let Me Be Lonely Part 2" | 01-Jan-70 | Reading |
| 28_Doran, Geri | Unknown | F | Florida/ Stanford | Private | Woodberry | Caucasian | 1966 | 2005 | "Retrospective" | 01-Jan-70 | Reading |
| 29_Trethewey, Natasha | Heterosexual | F | Hollins | Private | Academy | African-American | 1966 | 2007 | "Monument" | 01-Jan-70 | Reading |
| 30_McLane, Maureen | Other | F | Harvard, Chicago | Private | Poetry Foundation | Caucasian | 1967 | 2013 | "One Canoe" | 01-Jan-70 | Studio |
| 31_Wolff, Rebecca | Heterosexual | F | Iowa | Public | Poems Out Loud | Caucasian | 1967 | 2009 | "Breeder Sonnet" | 01-Jan-70 | Reading |

| Name | ID | Bio. Sex | Education | Education Type | Corpus | Race/ Ethnicity | BY | Rec. Year | Poem (with link) | Length | Recording Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32_Klink, Joanna | Heterosexual | F | Iowa | Public | Academy | Caucasian | 1969 | 2016 | "On Falling (Blue Spruce)" | 01-Jan-70 | Studio |
| 33_Kocot, Noelle | Heterosexual | F | ? | ? | Woodberry | Caucasian | 1969 | 2009 | "In the Barn with Crayons" | 01-Jan-70 | Reading |
| 34_Mlinko, Ange | Heterosexual | F | Brown | Private | PennSound | Caucasian | 1969 | 2001 | "Music" | 01-Jan-70 | Reading |
| 35_Spahr, Juliana | Heterosexual | F | SUNY Buffalo | Public | PennSound | Caucasian | 1969 | 2001 | "We Arrived" | 01-Jan-70 | Reading |
| 36_Shaughnessy, Brenda | Heterosexual | F | Columbia | Private | Academy | Caucasian | 1970 | 2016 | "Last Sleep Best Sleep" | 01-Jan-70 | Studio |
| 37_Smith, Carmen GimŽnez | Heterosexual | F | Iowa | Public | Academy | Latino American | 1971 | 2016 | "Default Message" | 01-Jan-70 | Studio |
| 38_Zucker, Rachel | Heterosexual | F | Iowa | Public | SoundCloud | Caucasian | 1971 | 2009 | "'The Day I Lost My Déjà Vu" | 01-Jan-70 | Studio |
| 39_Ortiz, Amalia | Heterosexual | F | U of Texas - Rio Grande Valley | Public | Def Jam Poetry/ Youtube | Latino-American | 1971 | 2013 | "Women of Juarez" | 01-Jan-70 | Reading |
| 40_Smith, Tracey K. | Heterosexual | F | Columbia /Harvard | Private | Page Meets Stage/ Youtbe | African-American | 1972 | 2014 | "One Man at a Time" | 01-Jan-70 | Reading |
| 41_Harvey, Matthea | Heterosexual | F | Harvard | Private | Woodberry | Caucasian | 1973 | 2010 | "Our American Husbands" | 01-Jan-70 | Reading |
| 42_Lee, Karen An-hwei | Heterosexual | F | Brown, Berkeley | Private | Academy | Asian-American | 1973 | 2015 | "Dear Millenium, Inadequate Witness" | 01-Jan-70 | Studio |
| 43_Manguso, Sarah | Heterosexual | F | Iowa | Public | Woodberry | Caucasian | 1974 | 2009 | "Civic Pride" | 01-Jan-70 | Reading |
| 44_Peterson, Katie | Heterosexual | F | Harvard | Private | Poetry Foundation | Caucasian | 1974 | 2013 | "Enough" | 01-Jan-70 | Studio |
| 45_Hong, Cathy Park | Heterosexual | F | Iowa | Public | Poetry Foundation | Asian-American | 1976 | 2010 | "Ballad in A" | 01-Jan-70 | Studio |
| 46_Limon, Ada | Heterosexual | F | NYU | Private | SoundCloud | Latino American | 1976 | 2014 | "What It Looks Like to Us" | 01-Jan-70 | Studio |
| 47_Lasky, Dorothy | Heterosexual | F | UMassAmherst | Public | SoundCloud | Caucasian | 1978 | 2009 | "'Tornado" | 01-Jan-70 | Studio |
| 48_Peterson, Trace | Other | F | CUNY | Public | PBS | Caucasian | 1978 | 2015 | "After Before and After" | 01-Jan-70 | Studio |
| 49_Che, Cathy Linh | Unknown | F | NYU | Private | Academy | Asian-American | 1980 | 2016 | "Los Angeles, Manila, Đà Nẵng" | 01-Jan-70 | Studio |
| 50_Llompart, Cecilia | Unknown | F | Virginia/ Florida State | Public | Academy | Latino-American | 1985 | 2016 | "Omens" | 01-Jan-70 | Studio |
| 51_O'Hara, Frank | Other | M | Harvard | Private | ? | Caucasian | 1926 | 1966 | "'The Day Lady Died" | 01-Jan-70 | Reading |
| 52_Bly, Robert | Heterosexual | M | Iowa | Public | Academy | Caucasian | 1926 | 2008 | "'The Greek Ships" | 01-Jan-70 | Reading |
| 53_Ashbery, John | Other | M | Columbia/ Harvard | Private | PennSound | Caucasian | 1927 | 1963 | "'They Dream Only of America" | 01-Jan-70 | Reading |
| 54_Ginsberg, Allen | Other | M | Columbia/ Berkeley | | PennSound | Jewish-American | 1927 | 1959 | "In Back of the Real" | 01-Jan-70 | Reading |
| 55_Strand, Mark | Heterosexual | M | Iowa | Private | Salmagundi/ Youtube | Caucasian | 1934 | 2019 | "Man and Camel" | 01-Jan-70 | Reading |
| 56_Baraka, Amiri | Heterosexual | M | Columbia/ Howard | Private | PennSound | African-American | 1934 | 1965 | "Poem for Half-White College Students" | 01-Jan-70 | Reading |
| 57_Bidart, Frank | Other | M | Harvard/ UC Riverside | Private | Academy | Caucasian | 1939 | 2008 | "An American in Hollywood" | 01-Jan-70 | Reading |

| Name | ID | Bio. Sex | Education | Education Type | Corpus | Race/ Ethnicity | BY | Rec. Year | Poem (with link) | Length | Recording Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 58_Kooser, Ted | Heterosexual | M | Nebraska | Public | SoundCloud | Caucasian | 1939 | 1994 | "Letter in October" | 01-Jan-70 | Studio |
| 59_Pinsky, Robert | Heterosexual | M | Stanford | Private | Academy | Jewish-American | 1940 | 1992 | "Street Music" | 01-Jan-70 | Studio |
| 60_Hass, Robert | Heterosexual | M | Stanford | Private | Academy | Caucasian | 1941 | 2007 | "First Things at the Last Minute" | 01-Jan-70 | Reading |
| 61_Palmer, Michael | Heterosexual | M | Harvard | Private | PennSound | Caucasian | 1943 | 1990 | "Song of the Round Man" | 01-Jan-70 | Reading |
| 62_Tate, James | Heterosexual | M | Iowa | Public | PennSound | Caucasian | 1943 | 1998 | "Never Again the Same" | 01-Jan-70 | Reading |
| 63_Koethe, John | Heterosexual | M | Harvard/ Princeton | Private | Academy | Caucasian | 1945 | 2003 | "Hackett Avenue" | 01-Jan-70 | Studio |
| 64_Ryan, Michael | Heterosexual | M | Iowa | Private | Academy | Caucasian | 1946 | 2004 | "Outside" | 01-Jan-70 | Reading |
| 65_Silliman, Ron | Heterosexual | M | San Francisco State/ UC Berkeley | Public | PennSound | Caucasian | 1946 | 1998 | "One" | 01-Jan-70 | Reading |
| 66_Mackey, Nathaniel | Heterosexual | M | Stanford/ Princeton | Private | PennSound | African-American | 1947 | 1991 | "Slipped Quan-drant" | 01-Jan-70 | Reading |
| 67_Komunyakaa, Yusef | Heterosexual | M | UC Irvine/ Colorado State | Public | PennSound | African-American | 1947 | 1998 | "Lime" | 01-Jan-70 | Reading |
| 68_Herrera, Juan Felipe | Heterosexual | M | Iowa | Public | NPR | Latino-American | 1948 | 2017 | "Poem by Poem" | 01-Jan-70 | Studio |
| 69_Yau, John | Heterosexual | M | Brooklyn College/ Bard | Private | PennSound | Asian-American | 1950 | 2000 | "Life on a Loading Dock" | 01-Jan-70 | Reading |
| 70_Rios, Alberto | Heterosexual | M | Arizona | Public | Academy | Latino Ameri-can | 1952 | 2014 | "Refugio's Hair" | 01-Jan-70 | Reading |
| 71_Doty, Mark | Other | M | Goddard/ Drake | Private | Academy | Caucasian | 1953 | 2006 | "Paul's Tattoo" | 01-Jan-70 | Studio |
| 72_Wright, Franz | Heterosexual | M | Oberlin | Private | Woodberry | Caucasian | 1953 | 2009 | "'To" | 01-Jan-70 | Reading |
| 73_Eady, Cornelius | Heterosexual | M | Empire State College | Public | PBS | African-American | 1954 | 2015 | "Emmett Till's Glass-Top Casket" | 01-Jan-70 | Reading |
| 74_Young, Dean | Heterosexual | M | Indiana | Public | Slate | Caucasian | 1955 | 2013 | "How to Glow" | 01-Jan-70 | Studio |
| 75_Gizzi, Peter | Heterosexual | M | Brown, SUNY Buffalo | | PennSound | Caucasian | 1959 | 2008 | "Plain Song" | 01-Jan-70 | Reading |
| 76_Phillips, Carl | Other | M | Boston University, Harvard | Private | Academy | African-American | 1959 | 2016 | "'The Way One Animal Trusts Another" | 01-Jan-70 | Studio |
| 77_Goldsmith, Kenneth | Heterosexual | M | Rhode Island School of Design | Private | PennSound | Jewish-American | 1961 | 2006 | "'Traffic" | 01-Jan-70 | Studio |
| 78_Moten, Fred | Heterosexual | M | Harvard, Berkeley | | PennSound | African-American | 1962 | 2010 | "James Baldwin" | 01-Jan-70 | Reading |
| 79_Clover, Joshua | Heterosexual | M | Iowa | Public | Paris Lit Up/ Youtube | Caucasian | 1962 | 2016 | "I Want to Read at the White House" | 01-Jan-70 | Reading |
| 80_Powell, D.A. | Other | M | Iowa | Public | Academy | Caucasian | 1963 | 2016 | "A Long Night" | 01-Jan-70 | Studio |
| 81_Toscano, Rodrigo | Heterosexual | M | ? | Unknown | Woodberry | Latino-American | 1964 | 2010 | "Vibes" | 01-Jan-70 | Reading |
| 82_Conrad, CA | Other | M | ? | Unknown | PennSound | Caucasian | 1966 | 2016 | "Security cameras and flowers là" | 01-Jan-70 | Reading |
| 83_Manning, Maurice | Heterosexual | M | Alabama | Public | Woodberry | Caucasian | 1966 | 2009 | "'The Gone and the Going Away" | 01-Jan-70 | Reading |

| Name | ID | Bio. Sex | Education | Education Type | Corpus | Race/ Ethnicity | BY | Rec. Year | Poem (with link) | Length | Recording Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 84_Zapruder, Matthew | Heterosexual | M | UMassAmherst | Public | SoundCloud | Jewish-American | 1967 | 2009 | "When It's Sunny They Push the Button" | 01-Jan-70 | Studio |
| 85_Blanco, Richard | Other | M | Florida International | Private | SoundCloud | Latino American | 1968 | 2012 | "Maybe" | 01-Jan-70 | Studio |
| 86_Young, Kevin | Heterosexual | M | Harvard | Private | Museum of Modern Art/ Youtube | African-American | 1970 | 2015 | "'Thataway" | 01-Jan-70 | Studio |
| 87_Rohrer, Matthew | Heterosexual | M | Iowa | Public | Woodberry | Caucasian | 1970 | 2010 | "Statistics of Deadly Quarrels" | 01-Jan-70 | Reading |
| 88_Beckman, Joshua | Heterosexual | M | Hampshire | Private | Woodberry | Jewish-American | 1971 | 2010 | "My Pet Worm" | 01-Jan-70 | Reading |
| 89_Hayes, Terrance | Heterosexual | M | Pittsburgh | Public | Woodberry | African-American | 1971 | 2010 | "The Golden Shovel" | 01-Jan-70 | Reading |
| 90_Burt, Stephen | Other | M | Yale | Private | Woodberry | Jewish-American | 1971 | 2012 | "Butterfly with Parachute" | 01-Jan-70 | Reading |
| 91_Yang, Jeffrey | Heterosexual | M | ? | Unknown | Woodberry | Asian-American | 1974 | 2009 | "Yennecott" | 01-Jan-70 | Reading |
| 92_Phillips, Rowan Ricardo | Heterosexual | M | Brown | Private | Academy | African-American | 1974 | 2015 | "Death and the City" | 01-Jan-70 | Studio |
| 93_Teare, Brian | Other | M | Indiana | Public | SoundCloud | Caucasian | 1974 | 2016 | "There Is the Work.." | 01-Jan-70 | Reading |
| 94_McCrae, Shane | Unknown | M | Iowa | Public | RiverStyx/ Youtube | African-American | 1975 | 2016 | "Panopticon" | 01-Jan-70 | Reading |
| 95_Brown, Jericho | Other | M | Houston | Private | CDMX015/ Youtube | African-American | 1976 | 2015 | "Again" | 01-Jan-70 | Reading |
| 96_Quesada, Ruben | Other | M | UC Riverside | Public | Poetry LA/ Youtube | Latino-American | 1976 | 2016 | "After Oprah" | 01-Jan-70 | Studio |
| 97_Sigo, Cedar | Other | M | Naropa | Private | Poetry Foundation | Native American | 1978 | 2015 | "L.A. Odyssey" | 01-Jan-70 | Studio |
| 98_Fernandez, Robert | Unknown | M | Iowa | Public | Poetry Foundation | Latino-American | 1980 | 2011 | "Epithalamion" | 01-Jan-70 | Studio |
| 99_Betts, Reginald Dwayne | Heterosexual | M | Warren Wilson | Private | Bread Loaf | African-American | 1980 | 2011 | "What We Know of Horses" | 01-Jan-70 | Reading |
| 100_May, Jamaal | Heterosexual | M | Warren Wilson | Private | Poetry Foundation | African-American | 1982 | 2016 | "I Have This Way of Being" | 01-Jan-70 | Studio |

in a one-minute excerpt from a monologue ⊠'On Selfishness,⊠"
Louis CK 2013 Table 1. 100 Poets, Background Information and Linked Recordings.

We also wanted to consider class, in part to test Basile's association of Poet Voice with MFA programs with white, straight instructors and with the upper classes, but it would be very difficult to characterize the class of a poet without extensive biographical surveys. Some poets clearly identify as working-class in their upbringing, such as Eileen Myles. Others, like John Ashbery, might seem upper-class, as he attended Harvard and Columbia, yet he grew up as the son of a farmer outside Rochester, New York. Fred Moten grew up working-class, yet he went on to attend Harvard and UC Berkeley. How do such changes of cultural milieu and education affect a poet's voice, in performance and in conversation? This, too, would be an interesting question for further research.

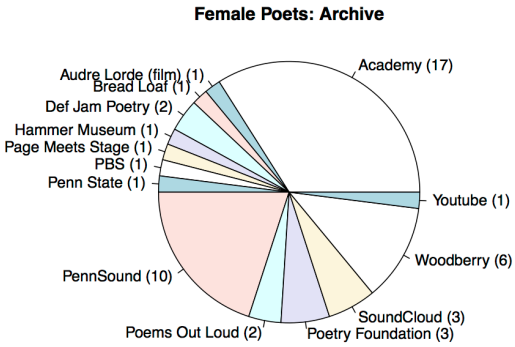


Figure 2. Pie chart, female poets by archive.

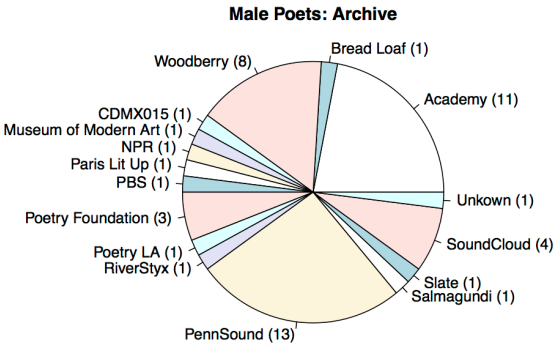


Figure 3. Pie chart, male poets, by archive.

Given the difficulty assessing poets' class backgrounds, we chose public/private graduate education as the basis for a very rough estimate of class because private colleges and universities enroll middle-class and affluent students at much higher rates than low-income students, who attend public colleges and universities in larger numbers. We also considered whether poets' graduate studies (often for MFA, but not always) took place at the University of Iowa, whose graduates might be thought to be particularly influential as creative writing instructors and well-published poets who read widely. (Anecdotally, Poet Voice is sometimes referred

to as Iowa Voice, including by some Iowa graduates.)

Our approach to considering different categories related to identity and background is informed by theories of intersectionality, which first gained footing in feminist criticism and demands application to the empirical study of performance styles. Specifically in our analysis, we aimed to apply a concept called "intracategorical complexity," first elaborated by Leslie McCall, which:

> look[s] within categories, especially those defined by multiple dimensions of difference (e.g. Black women), to expose the underexplored complexities inherent to these categories; while these approaches may undermine categorization or approach [it] obliquely, they do not necessarily reject the use of categories altogether. Instead, they insist[s] that categories contain more within-group differences than typically assumed, often explicitly demonstrating the inadequacy of standard categories to reflect lived experiences and social realities.[37]

We are not directly concerned here with the history of discrimination or activism, which intersectional theory and work often focus on, but such identity categories certainly matter in the U.S. literary scene, and are mobilized in debates about it. Again we refer to Spahr and Young's findings that mainstream U.S. literary culture, including poetry readings, are persistently white and male-dominated. Also relevant here is the fact that literary scholars and poets, as much as anyone else, can be influenced by broad identity categories—related to aesthetics, ideology, race, ethnicity, class, gender, and so on—in generalizing about how poets perform, in listening to poets, and in forming expectations for how they should or will sound, and in perceiving how they do sound (we refer to Smith and Basile as examples here). For listeners and audiences, such identity perception and expectation based on stereotyping is inevitable; our brains use it to navigate the overwhelming complexities of daily life—and of contemporary American poetry! And identity categories matter in terms of poets' self-perception, of course, and in various ways they influence the performance styles they adopt. But it is well to remind ourselves that every category vastly reduces the complex variety of the things, or poets, it groups together. This ought to be especially the case with the performance of poetry, which, while it may or may not turn out to be as conventional in performance style—in our research, defined by prosodic patterns—as its critics believe, evolves among a group of highly creative and idiosyncratic individuals.

[37] Patrick Grzanka, Ed. *Intersectionality: A Foundations and Frontiers Reader* (New York: Routledge, 2014).

In the context of poetry performance, we hypothesized that aesthetic affiliation, gender, generation and/or educational background might correlate with particular performance styles. However, we also wanted to analyze the data with open minds, susceptible to unexpected insights and negative results and, importantly, to the possibility that different aspects of a poet's individuality, identity and training might combine and manifest in her performance style in surprising ways. Such an approach, again, assisted us in evaluating both popular assumptions, like Smith's and Basile's, that class, race, ethnicity, and gender overdetermine poetry reading styles, as well as scholarly insights and arguments about normative poetry performance styles, including the alleged tendency toward "neutral delivery" noted by Wheeler, Allison's aesethetic-ideological oppositions and his sense that a "humanist" style dominates, and the possible influence of Spahr and Young's "mainly white rooms" on dominant performance styles.

Though we included a large number of non-white poets in our representative sample of 100 American poets, we were somewhat limited in this effort by the fact that, for most of the contemporary period, the vast majority of poets who have found mainstream and/or experimental success have been white, and thus the number of recordings readily accessible in prominent online poetry archives are of white poets. Figure 4 and 5 show the diversity of the 100 poets in terms of race / ethnicity and sexual orientation.[38]

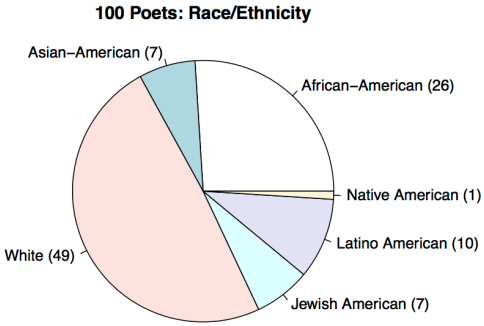


Figure 4. Pie chart, poets by ethnicity.

[38] We tentatively confirmed the sexual orientation of poets who have not made public statements about it by searching on reputable websites for mention of a spouse of the opposite biological sex. For two poets, we could find no mention of a spouse or of sexual orientation.

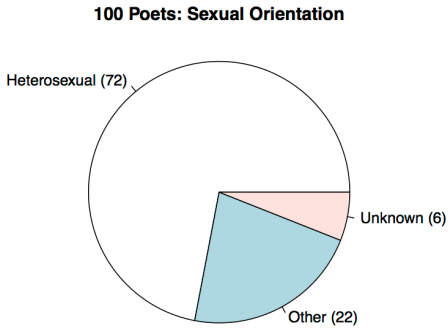


Figure 5. Pie chart, poets by sexual orientation.

As a basis for comparison with poetry reading styles, we chose a corpus of conversational speech. Why conversation? First, though we recognize that all speech is performative to some degree, influenced by context and audience, conversational speech is less premeditated, and it is often less formal than a poem in syntax and prosodic patterns. That relative irregularity makes conversational speech an apt contrast with reading styles that audiences often hear as highly regular in prosodic patterns. Second, conversational speech also tends to be fast, and we thought that poetry reading might be comparatively slower. Third, there are also anecdotal suggestions that contemporary poetry performance might be more conversational in style than earlier poetry [39] or that it should aspire to be more conversational in style.[40]

While it might be ideal to compare recordings of poets reading poetry with the same poets in conversation or interviews, it proved challenging to find adequate recordings of some of the 100 poets doing anything other than reading poems. Instead we used recordings of other individuals speaking in a laboratory setting, drawn from the Buckeye Corpus of Conversational Speech recorded at Ohio State University in 1999-2000. We sampled 60 seconds of continuous or nearly continuous speech from 19 Buckeye speakers (of the 40 recorded), who were described as "native central Ohio speakers" and "middle-class Caucasian" (3). The speakers were all over 40 years of age at the time of recording, meaning that all speakers

[39] see Matt Petronzio, "The Linguistics Behind the Insufferably Annoying Poet Voice," *Mashables*. February 7, 2015. Accessed June 20, 2017, footnote 2

[40] see Lisa Anne Basile, "Poet Voice and Flock Mentality: Why Poets Need to Think for Themselves," *Huffington Post*. September 16, 2014.

were born before 1960.[41] The Buckeye corpus was collected in part to generate samples of "interspeaker variation" within a relatively homogeneous group. Because the Buckeye Corpus samples a specific region, class, age, and race of speaker, it might be more precisely termed, native central Ohioan white middle-aged late twentieth century conversational speech. In short hand, we will refer to it as conversational speech.

In addition to the Buckeye conversational speakers, we included samples of two other types of performative speech, including an excerpt from an early version of Martin Luther King, Jr.'s delivering an early version of his "I Have a Dream" speech in 1962 in Rocky Mount, North Carolina, and an excerpt from Orson Welles's introduction to "The War of the Worlds" from 1938. Religious-political oratory and radio drama are among the many types of performative speech that are open to the prosodic analysis we undertake here. We chose these two speakers because they are well-known, and because they offer notable contrasts to norms in both conversational speech and poetry reading.

In analyzing the recordings, we tracked both pitch and timing primarily using TANDEM-STRAIGHT, a state-of-the-art open-source voice synthesis program developed by Hideki Kawahara at Wakayama University in Japan, with the Advanced Telecommunications Research Institute and the Auditory Brain Project. (It can be downloaded and installed for free for academic use.) TANDEM-STRAIGHT applies signal processing algorithms based on human auditory processing to create a rich model of a recorded voice, which can then be analyzed and manipulated.[42] With TANDEM-STRAIGHT, we also used a pitch-tracking algorithm, "Noise Robust Pitch Tracking by Subband Autocorrelation Classification," developed by Byung Suk Lee and Daniel P.

[41] "They were interviewed in a small seminar room by [either a] male postdoc [or a] female graduate student … [and] were told that the purpose of the study was to learn how people express"everyday" opinions in conversation. Each interview began with a few questions about the talker concerning his/her age, place of birth, family make-up, etc. This … [led] to questions that easily elicited opinions, such as how Columbus has changed over the years, how families get along, how children should be raised, etc. These topics in turn offered opportunities for talkers to express other opinions. In order to elicit more conversation, the interviewer often challenged the talker with other points of view, or asked for illustrations of alternative opinions. As the session proceeded, talkers become less inhibited and the interview approximated a friendly conversation…. Interviews lasted from 30 to 60 minutes, with the latter being the target length." (Buckeye Corpus 3).

[42] Kawahara's home page at Wakayama University includes several tutorials and guides to TANDEM-Straight. This one-minute movie walks through the basic steps, and this three-minute movie shows how to manipulate the different aspects of the Graphic User Interface, including f0 (pitch), duration (ratio), and so on. TANDEM-STRAIGHT is compatible with Matlab, but the GUI can also function without it, and the user can save manipulated files as WAV files. In 2016, some of Kawahara's colleagues released another speech synthesis tool that may prove as or more useful than TANDEM-STRAIGHT, called World: https://github.com/mmorise/World. We are exploring it for future research.

W. Ellis at Columbia University to work with precise accuracy on the noisy, low-quality vocal recordings common in the audio archive of poetry readings. This algorithm measures what human listeners perceive as vocal pitch, also called voicing (the fundamental frequency, the vibration of the vocal cords, as measured in hertz), every 10 milliseconds in a given recording. (Vowels are voiced speech. Without getting too technical, unvoiced speech is typically composed of consonants, like "t" and "s" and "p", the sound of which is produced in the mouth, without vibrating the vocal cords. Unvoiced speech does not register in human auditory perception as having pitch.) To calculate words per minute, we used a powerful forced aligner called Gentle that can create rough transcripts of speech recordings, and line up a given transcript with that recording, word by word, delivering precise timing information. Though it is simple enough to divide the number of words by the length of a recording, Gentle was useful in creating transcripts of poems (which we corrected as necessary), for the purpose of this research, that are under copyright and/or are otherwise unavailable as text.[43]

Finally, we further analyzed the resulting data about pitch and timing, in the 100 samples and the nineteen Buckeye recordings, in Matlab with a script written by Miller. Specifically, we developed twelve prosodic measures to reflect what we perceive as the salient features of pitch and timing in poetry performance. How fast does a poet read? How often does she pause? How long are her pauses? How regular or irregular is the rhythm of her reading? How predictably or unpredictably does she pause? How wide is her pitch range—that is, does she use a relatively narrow pitch range, approaching monotone, or does she use a relatively wider pitch range, to include a range of and/or shifts in emotional state, argument or tone? How contrastive is her pitch?

Based on the data about the twelve prosodic measures, we propose four stylistic tendencies that begin to characterize reading styles more precisely than the binary of neutral vs. expressive. We would expect poets who read in a more Formal style to have predictable rhythm and speak relatively slowly, with fairly regular pauses. A more Conversational poet would use less predictable rhythm and would speak relatively fast, with a less regular pattern of pauses. Whether Formal or Conversational in speaking rate and rhythm, a poet might also read in more or less Expressive style—that is, she might use a wide pitch range and

[43] Gentle, which can be downloaded for free and installed on Macs, is built on top of an open-source speech recognition toolkit developed at Johns Hopkins University, Kaldi, which uses modern neural network-based acoustic modeling, trained on thousands of hours of recorded telephone conversations. Gentle was designed specifically to function with more flexibility than FAVE (Forced Alignment and Vowel Extraction), a tool developed in the Linguistics Lab at the University of Pennsylvania and commonly used by linguists, to be "easier to install and use….

highly contrastive pitch, or she might use a narrower pitch range, little contrastive pitch. Finally, a poet might read in a more or less Dramatic style—that is, she might use long, unpredictable pauses (unpredictable because their timing would depend on the idiosyncrasies of content rather than the conventions of poetic form or syntax) to create suspense and/or tension, or she might use few long pauses. The four tendencies might combine in different ways. Formal would usually be opposed to Conversational, but we might describe a poet as Formal-Expressive, Conversational-Expressive, Formal-Expressive-Dramatic, Conversational-Expressive-Dramatic, Formal-Inexpressive, or Conversational-Inexpressive. In aggregate, the prosodic measures we have developed have not been applied to the analysis of poetry recordings.[44]To understand differences in prosodic measures, and the range found in these 100 samples, readers are strongly encouraged to listen to the hyperlinked examples below, which accompany the descriptions "Twelve Prosodic Measures," and also to all of the sampled poems, hyperlinked in Table 1.

## Twelve Prosodic Measures

1) Speaking rate calculated as words per minute, or WPM. The transcript of the recording created by Gentle, corrected when necessary, produced the number of words read, which was divided by the length of the recording and normalized, if the recording was longer or shorter than one minute, to reflect the speaking rate for 60 seconds. In these 100 samples, June Jordan (193 WPM) and Kenneth Goldsmith (195 WPM) read the fastest, suggesting a Conversational style, while Cecilia Llompart (88 WPM) and Rodrigo Toscano (79 WPM) read the slowest, suggesting a more Formal style. Poets typically average around 134 WPM. The sampled recordings of Orson Welles and Martin Luther King, Jr., are close to that norm, at 143 and 144 WPM, respectively.

[44]While a full review of linguistic research considering speaking rate, pause rate and duration and pitch speed is beyond the scope of this study, we refer readers to T. Kendall's useful *Speech Rate, Pause and Sociolinguistic Variation: Studies in Corpus Sociophonetics* (2013) and to the comparatively scant existing work on pitch change and pitch speed. See J. J. Ohala and W. G. Ewan, "Speed of pitch change," The Journal of the Acoustical Society of America 53, no. 1 (1973): 345-345; P. Gramming et al. "Relationship between changes in voice pitch and loudness," Journal of Voice 2, no. 2 (1988): 118-126, J. Sundberg, "Data on maximum speed of pitch changes." Speech transmission laboratory quarterly progress and status report 4 (1973): 39-47; K. Alho et al. "Event-related brain potential of human newborns to pitch change of an acoustic stimulus," Electroencephalography and Clinical Neurophysiology/Evoked Potentials Section 77, no. 2 (1990): 151-155; B. Maess et al. "Localizing pre-attentive auditory memory-based comparison: magnetic mismatch negativity to pitch change." Neuroimage 37, no. 2 (2007): 561-571; and Y. Xu and X. Sun, "Maximum speed of pitch change and how it may relate to speech." The Journal of the Acoustical Society of America, 111 no. 3 (2002): 1399-1413.

2) Average Pause Length, for pauses of at least 100, 250 and 500 milliseconds, normalized for recording length. Using TANDEM-STRAIGHT, moments of pause were assigned whenever the speech energy fell below a threshold (10 decibels below the 90% quantile of energy across the entire recording-roughly, whenever the acoustic energy was less than half as loud as fully articulated utterances). We do not consider pauses less than 100ms because fully continuous speech also naturally has such brief gaps in energy, nor do we consider pauses that exceed 1,999 ms (that is, 2 seconds), because they are quite rare. Sonia Sanchez (.58 sec.) and Jericho Brown (.62 sec.) have the shortest longer pauses, on the female and male sides, respectively, while Maureen McLane (1.34 sec.) and Frank Bidart (1.48 sec.) make the longest. We would expect more Dramatic and possibly more Formal styles to exhibit longer pauses, while Conversational styles would exhibit shorter pauses (Welles and King have fairly short pauses, between .33 and .4 seconds, close to the norm of .29 seconds, and .31 seconds for the female and male Buckeye speakers, respectively).

3) Average Pause Rate per second, for pauses of at least 100, 250 and 500 ms. In these 100 samples, Sonia Sanchez (.03 per sec) and Kenneth Goldsmith (.02 per sec.) make long pauses less frequently (pauses greater than 500 ms), while Juan Felipe Herrera (.54 per sec) and Rebecca Wolff (.39 per sec.) make them most frequently. Again, we would expect more Dramatic and possibly more Formal styles to make frequent longer pauses, while Conversational styles might pause often, but not for long. Female and male Buckeye speakers both have a pause rate of about 1 per sec. King has a pause rate of .85 per sec., Welles of 1.13 per sec.

4) Rhythmic Complexity of Pauses[45] (of at least 100 ms). Juliana Spahr (3.23) and Matthew Rohrer (4.03) have the lowest rhythmic complexity of pauses, suggesting they read in a more Formal style in terms of predictable rhythm of pauses, while Mei-Mei Berssenbrugge (9.95) and Dean Young (10.81) have the highest, suggesting that they read in a comparatively Conversational style, with unpredictable rhythm of pauses. A low value for this measure might also predict a Dra-

[45] All Rhythmic Complexity measures are unitless, calculated using the Lempel-Ziv algorithm to estimate Kolomogorov complexity, also used for compression, as with gif or zip files. These measures are normalized for audio length. The idea is to find any and all repeated temporal patterns, counting speech and moments of pause vs. speech or voiced vs. unvoiced as 1's and 0's respectively over time. For pause complexity we used pause (1) vs. speech (0), and for syllabic and phrasal complexity we used voiced vs unvoiced, since voiced speech power tends to drive the sense of vocal rhythm. All three complexity measures reflect how many unique speech-pause or voiced-unvoiced patterns are required to combine in order to reproduce the observed speech-pause signal. The more easily one can reconstruct the data with a set of repeated patterns, the simpler it is, i.e. lower rhythmic complexity, or more predictable, regular rhythm. As a generalization, the more predictable a poet's rhythmic measures, the more formally they may read, while the less predictable, the more conversationally they may read.

matic style, judging tentatively from the value for our Dramatic example, Frank Bidart (4.74). The female Buckeye speakers have values of 7.63 and the males 7.21, while King's is 6.48 and Welles is 8.34.

5) Rhythmic Complexity of Syllables. Here we identified all long unvoiced periods, > than 400 ms, and cropped or shortened these to 400 ms. This focuses the rhythmic complexity measure on rapid, syllabic-scale voiced-unvoiced patterns. For this measure, Juan Felipe Herrera (6.59) and Tracy K. Smith (9.75) have the lowest rhythmic complexity, while Cathy Linh Che (16.48) and Kenneth Goldsmith (17.23) have the highest. As with Rhythmic Complexity of Pauses, higher Rhythmic Complexity of Syllables likely indicates a Conversational style, while lower indicates a more Formal style. Our example of a Conversational-Dramatic poet, Frank Bidart, has a value of 12.77. His is close to King's, at 13, while Welles' is 16.4. The female Buckeye speakers have an average of 16, male Buckeye speakers 13.4.

6) Rhythmic Complexity of Phrases. Here we remove unvoiced periods < than 400 ms, as if smashing consecutive syllables together. This focuses the rhythmic complexity measure on slower voiced-unvoiced patterns, at the scale of the phrase rather than the syllable. For this measure, Jericho Brown (1.93) and Sonia Sanchez (.94) have the lowest rhythmic complexity, while Juan Felipe Herrera (4.92) and Audre Lorde (4.37) have the highest. Our example of a Conversational-Dramatic poet, Frank Bidart, has a value of 2.83. King's is 5.58 and Welles is 3.23. The average for female Buckeye speakers is 2.65 and for males it is 2.89.

7) Average Pitch (mean f0, or fundamental frequency, sampled every 10 milliseconds), of each voice in Hertz, which is cycles per second—literally the number of times the vocal cords vibrate per second. For this measure, Jorie Graham (146 hz) and Richard Blanco (81 hz) use the lowest average pitch, while Lucille Clifton (281 hz) and Alberto Rios (152 hz) have the highest. King exhibits fairly high pitch, at 194 Hz, while Welles is fairly low, at 111 Hz.

8) Pitch Range in octaves (range of f0). For this measure, Natasha Trethewey (1 octave) and Matthew Zapruder (.66 octaves) use the narrowest pitch range, while Maureen McLane (2.75 octaves) and CA Conrad (2.5 octaves) use the widest. King is close with a range of 2.5 octaves, while Welles uses a range of 1.33 octaves.

9) Pitch Speed, or speed of f0 in octaves per second. This is simply a measure of how fast pitch is changing. While we calculate this with attention to direction of pitch speed, or velocity—that is, whether pitch is typically rising or falling, which can indicate a questioning, leading, or tentative tone, versus an authoritative, declarative or conclusive tone—we remove the +/- sign to compare the

absolute value of the pitch speed among speakers.[46] This is one of the most useful measures for expressivity, in our view. For this measure, Louise Glück (.48 octaves) and Brian Teare (.74 octaves) use the slowest pitch speed, while Rae Armantrout (2.13 octaves) and Jamaal May (1.62 octaves) use the fastest. King's pitch speed is .94 and Welles's is 1.36.

10) Pitch Acceleration, or acceleration of f0 in octaves per second squared. Acceleration is the rate of change of pitch velocity, that is how rapidly the changes in pitch change, which we perceive as the lilt of a voice. Again, while we calculate the rate of change in speed with attention to direction—that is, whether pitch change is typically curving upward or curving downward —we compare pitch acceleration among speakers without regard to direction. This is also a very useful measure for expressivity. For this measure, Louise Glück (.54 octaves) and Dean Young (1.18 octaves) use the slowest pitch acceleration, while Wanda Coleman (2.28 octaves) and CA Conrad (2.18 octaves) use the fastest.

11) Pitch Entropy, or entropy for f0, indicating the predictability of pitch patterns. Entropy is an information theoretic measure of predictability (or strictly speaking, its opposite - unpredictability or disorder). Mathematically, if P(f) is the probability that a given talker uses a particular pitch frequency f, then entropy is given by the negative of the sum of all pitch probabilities times the log (base 2) of those pitch probabilities -⊠'P(f)*$\log_2$P(f). In this case, entropy quantifies how uniformly a speaker uses all possible pitches within +/-1 octave of their mean—that is, how unpredictable the pitch is. Staying narrowly close to the mean most of the time (even with high f0speed) gives low entropy (highly predictable). Using all pitches with equal probability gives high entropy (very unpredictable). For this measure, Claudia Rankine (2.36) and Jeffrey Yang (2.35) exhibit the lowest pitch entropy, while Wanda Coleman (4.25) and CA Conrad (4.09) exhibit the highest pitch entropy.

12) Dynamism. This is a composite measure, multiplying average pitch speed by average pitch entropy, and adding the average of syllabic and phrasal rhythmic complexity, with the terms weighted to have equal influence (dynamism = (abs(f0speed) * f0entropy) + (complexitySyllables+complexityPhrases)*.2195. This is a measure-in-progress, an attempt to put on a number on how predictable or repetitive a speaker's pitch, or intonation, and rhythmic patterns are. For this measure, Louise Glück (4.6) and Allen Ginsberg (5.35) exhibit the lowest dynamism, while Wanda Coleman (12.69) and CA Conrad (10.31) exhibit the

[46] Please see MacArthur and Miller, "After Scansion," forthcoming in Stanford's Arcade Colloquy series in 2018, and "Vocal Deformance and Performative Speech" in *Sounding Out*!, from 2016, for discussion of the expressive meaning of rising and falling intonation in brief samples of poetry recordings.

highest. Judging tentatively from our Conversational-Dramatic example, Frank Bidart (9.39), a relatively high value for Dynamism may also be associated with a Dramatic style.

In order to confirm whether differences in acoustic and prosodic variables between conversational speech and poetry readings, and between different groups of poets, are reliable and meaningful, or statistically significant, we performed a number of pairwise comparisons using Wilcoxon sum rank test, a.k.a Mann Whitney U Test, and as well as two-way Welch t-tests for larger groups. In what follows, we present and discuss the statistically significant results. However, given that we are sampling only a single recording of a single poem by each of these 100 poets from their entire careers, we discourage readers from drawing conclusions about the performance style of an individual poet or, indeed, about contemporary American performance trends. While this research represents, as far as we know, the largest effort to date to empirically analyze performance styles in poetry recordings, the dataset is an extremely small sample. It is most usefully thought of as a sample of contemporary American poetry reading styles in practice. Our results, as well as the code we used in Matlab, with TANDEM-STRAIGHT and the Ellis pitch-tracking algorithm, are available on Dataverse.

## Results and Discussion

Overall, we see the most statistically significant differences between the sampled female Buckeye conversational speakers and female poets, and within the poets as a group, we see the most differences among subsets of sampled female poets.

### Buckeye Conversational Speakers vs. Poets

- Poets use a narrower pitch range, slower speaking rate (WPM), and slightly longer pauses than the Buckeye conversational speakers.
- Buckeye conversational speakers rarely use long pauses (just two of the sampled nineteen Buckeye speakers have pauses of 2 seconds or longer, or 10.5%, while 33 of the 100 poets do, so 33%)
- Female poets and female Buckeye conversational speakers use a wider pitch range than males of both groups, but do not differ in other pitch measures that we associate with a more or less Expressive style.
- Female poets use a slightly higher average pitch, and exhibit lower rhythmic complexity of pauses and syllables (or more consistent, predictable

rhythm, as might be expected with reading formal poetry or a more Formal style) and lower dynamism (also indicating greater predictability, more formal poetry or a more Formal style), compared to the female Buckeye conversational speakers.

- Overall, male poets differ less significantly from the male Buckeye conversational speakers than do the female poets from the female Buckeye conversational speakers.
- Among male poets, we do not find significant differences among poets in terms of birth year.
- As a group, female poets also use a slightly higher average pitch than the female conversational speakers, perhaps due to the performative context of a poetry reading or studio recording. Other factors could account for this difference—for instance, the inclusion of younger female poets, 25 of whom were born after 1960, whereas all of the female Buckeye conversational speakers were born before 1960. Research has shown that women's voices tend to decrease in average pitch as they age.[47]

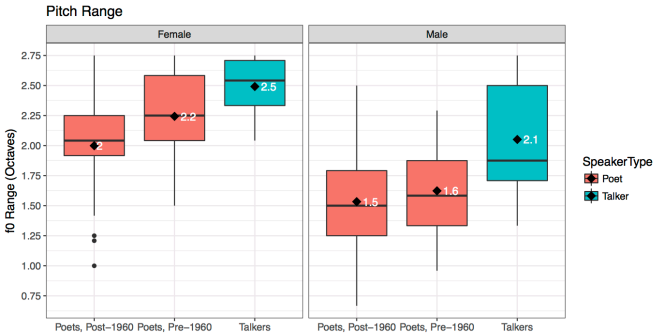


Figure 6. Pitch range, all.

[47] See M.L. Stoicheff, "Speaking Fundamental Frequency Characteristics of Nonsmoking Female Adults," Journal of Speech, Language and Hearing Research 24, no. 3 (1981): 437-441; M. Nishio and S. Niimi, "Changes in Speaking Fundamental Frequency Characteristics with Aging," Folia Phoniatrica et Logopaedica 60, no. 3 (2008): 120-127.

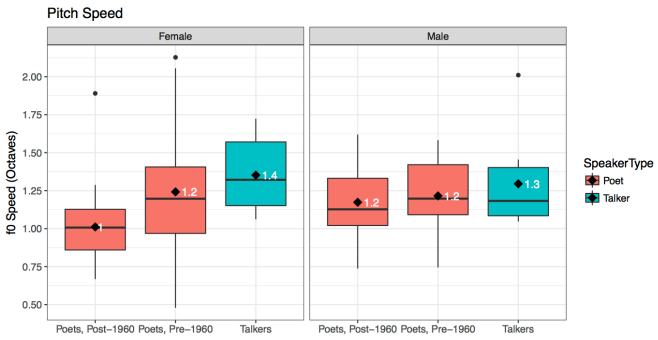


Figure 7. Pitch speed, all.

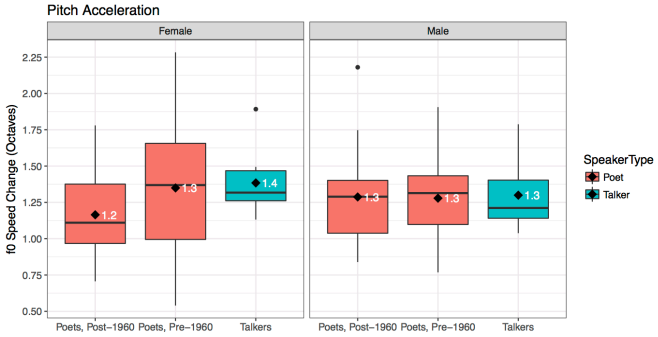


Figure 8. Pitch acceleration, all.

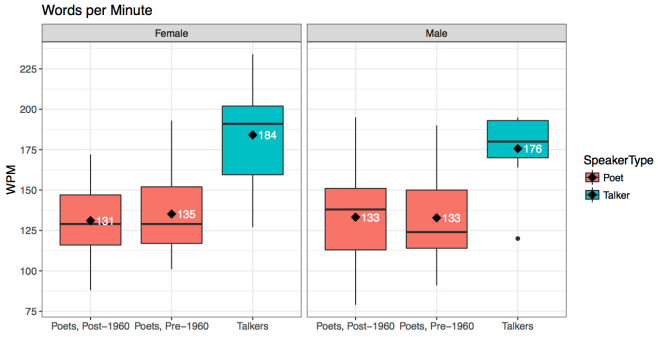


Figure 9. WPM, All

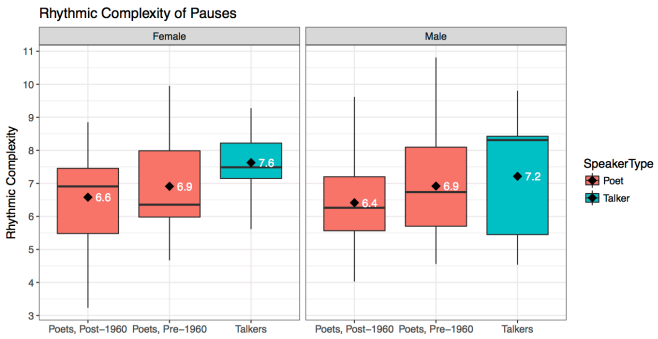


Figure 10. Rhythmic complexity of pauses, all.

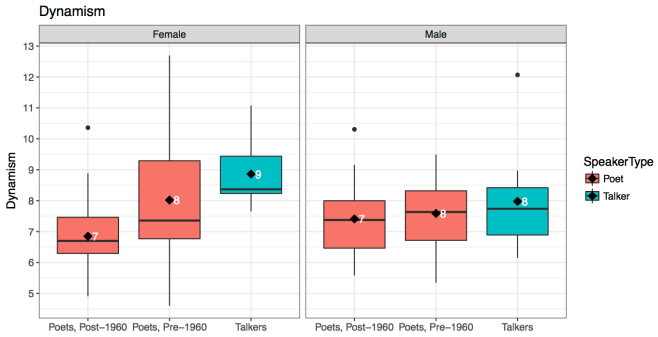


Figure 11. Dynamism, all

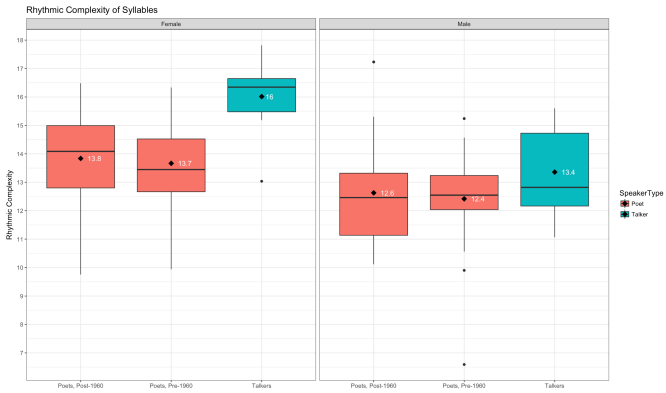


Figure 12. Rhythmic complexity of syllables, all.

These differences between the 100 poets and the Buckeye conversational speakers suggest that the sampled poetry readings are, on average, less Expressive and more Formal than conversational speech, and that females are more Expressive than males in both poetry reading and in conversational speech.

These gender differences in prosodic measures are in line with linguistic research that finds female speakers, on average, use a wider pitch range, associated with greater affective expression than male speakers.[48] As a group, male poets might also be roughly characterized as less Formal and more Conversational than female poets because, aside from using a slower speaking rate than male conversational speakers, male poets do not differ from male conversational speakers as much as female poets do from female conversational speakers.

## Differences among 50 Female Poets

The 25 female poets born before 1960, compared with the 25 female poets born after 1960, exhibit in these samples:

- A wider pitch range, faster pitch speed, slightly faster pitch acceleration, and greater dynamism overall.

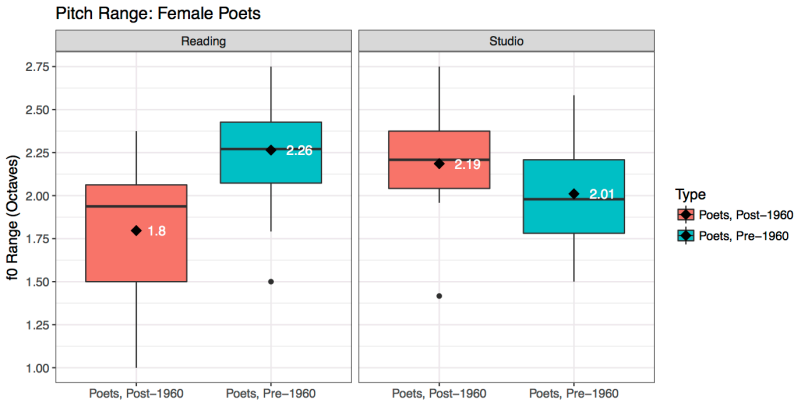


Figure 13. Female poets, broken down by birth year and recording type, pitch range.

[48] See, for example, I.R. Titze, "Physiologic and acoustic differences between male and female voices," The Journal of the Acoustical Society of America 85, no. 4 (1989): 1699-1707; Elinor Ochs, "Indexing gender," In Rethinking context: Language as an interactive phenomenon, edited by B. Miller, 335-358. New York: Cambridge University Press, 1992.

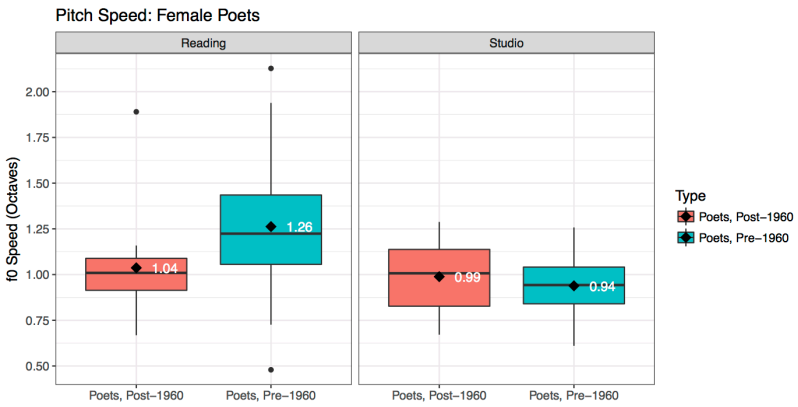


Figure 14. Female poets, pitch speed, broken down by birth year and recording type.

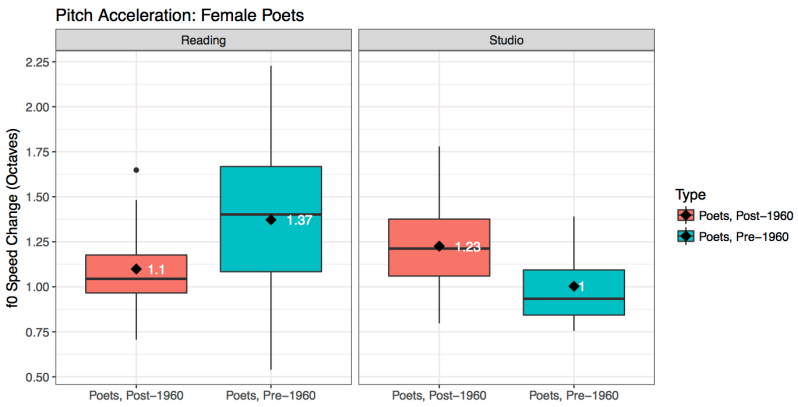


Figure 15. Female poets, pitch acceleration, broken down by birth year and recording type.

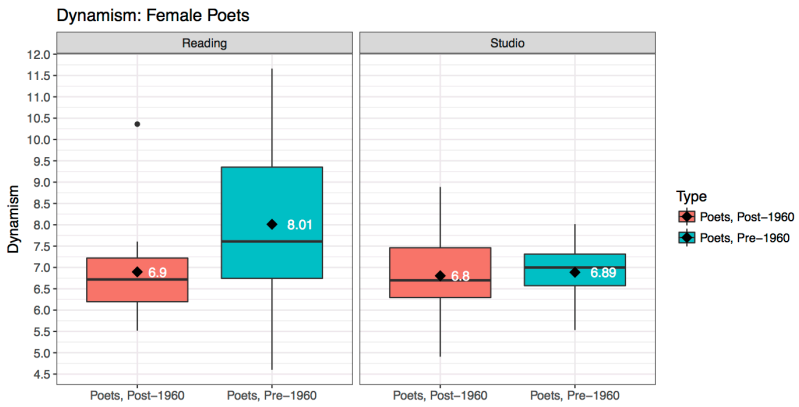


Figure 16. Female poets, dynamism, broken down by birth year and recording type.

However, 20 of the 25 sampled recordings of female poets born before 1960 are live readings, while 12 of the 25 sampled recordings from female poets born after 1960 are live readings.

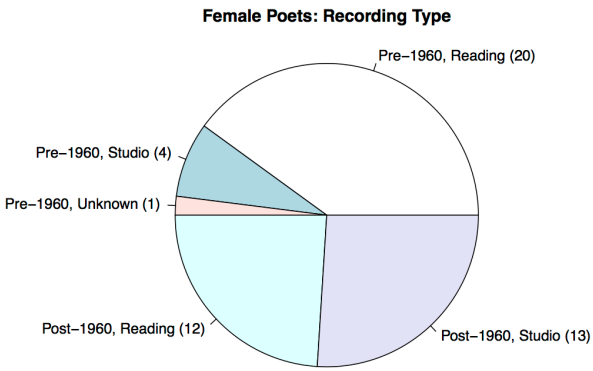


Figure 17. Female poets, recording type.

Samples of female poets in live readings, compared to female poets in studio recordings, exhibit some very small, statistically significant differences: - Slightly slower pitch speed (1.18 octaves per sec. for readings, vs. 0.98 octaves per sec for

studio recordings) - Slightly lower dynamism (7.6 for readings, vs. 6.8 for studio recordings)

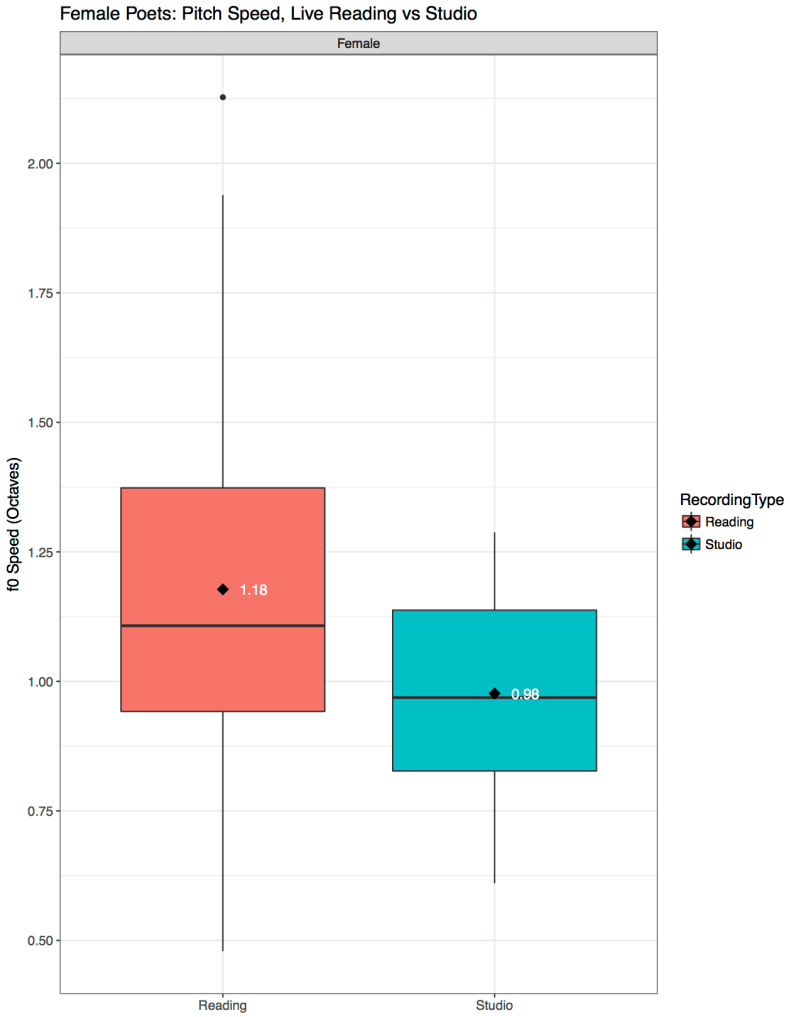


Figure 18. Female poets, pitch speed recording type.

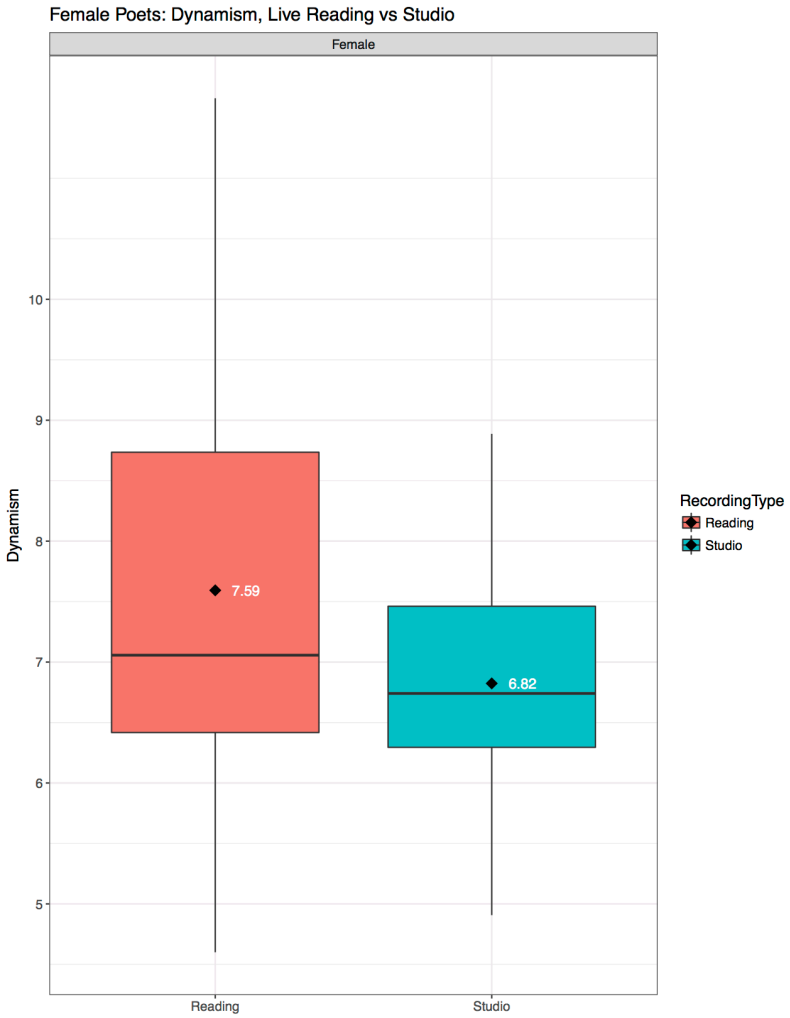


Figure 19. Female poets, dynamism and recording type.

Are the apparent differences, then, between younger and older female poets related to our selection of a larger number of studio recordings for younger female poets? Probably not.

When we compare sampled recordings of younger female poets in live readings to sampled recordings of older female poets in live readings, we find even more

marked differences. (And again, the recordings are roughly contemporary with one another; that is, all of the readings by both the younger and older female poets date from 1998 or later, with the exception of Barbara Guest (recorded in 1983), and Louise Glück, June Jordan, and Heather McHugh (all recorded in 1992). The 20 female poets born before 1960 in live readings exhibit an average pitch range of 2.75 octaves, an average pitch speed of 2.05 octaves per second, and an average pitch acceleration of 2.28 octaves per second squared, while the 12 female poets born after 1960 sampled from live readings exhibit an average pitch range of 1.79 octaves, an average pitch speed of 1.04 octaves per second, and an average pitch acceleration of 1.1 octaves per second squared.

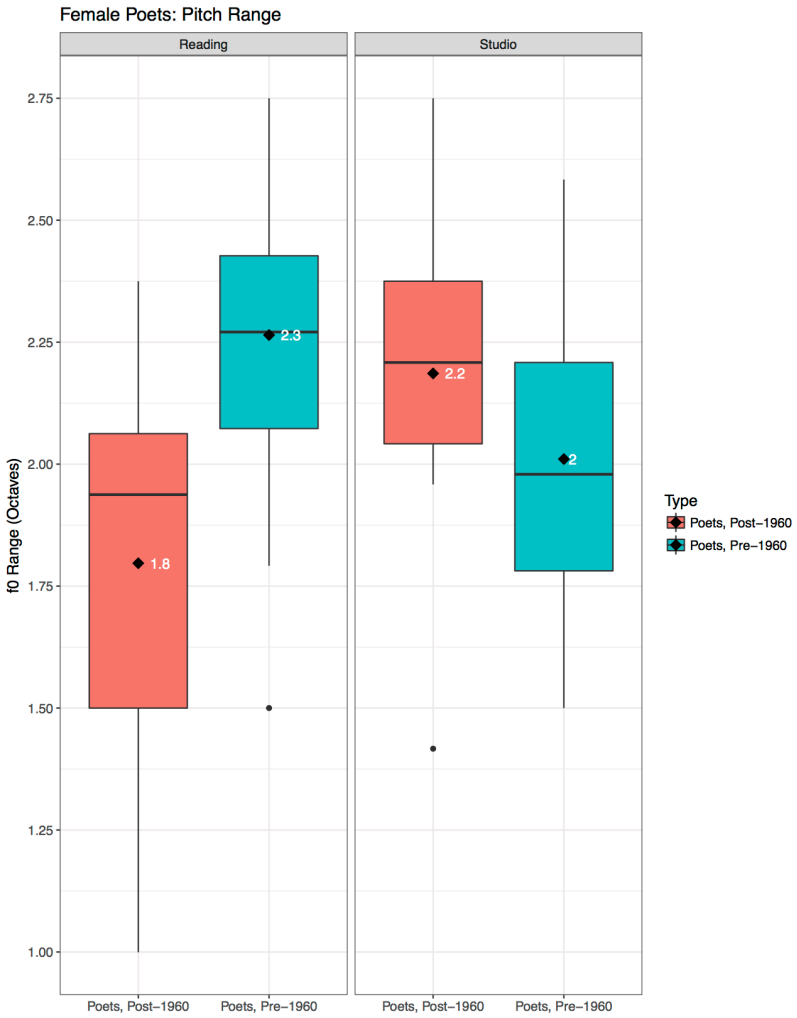


Figure 20. Comparing female poets in live readings born before 1960 and female poets in live readings born after 1960 on pitch range.

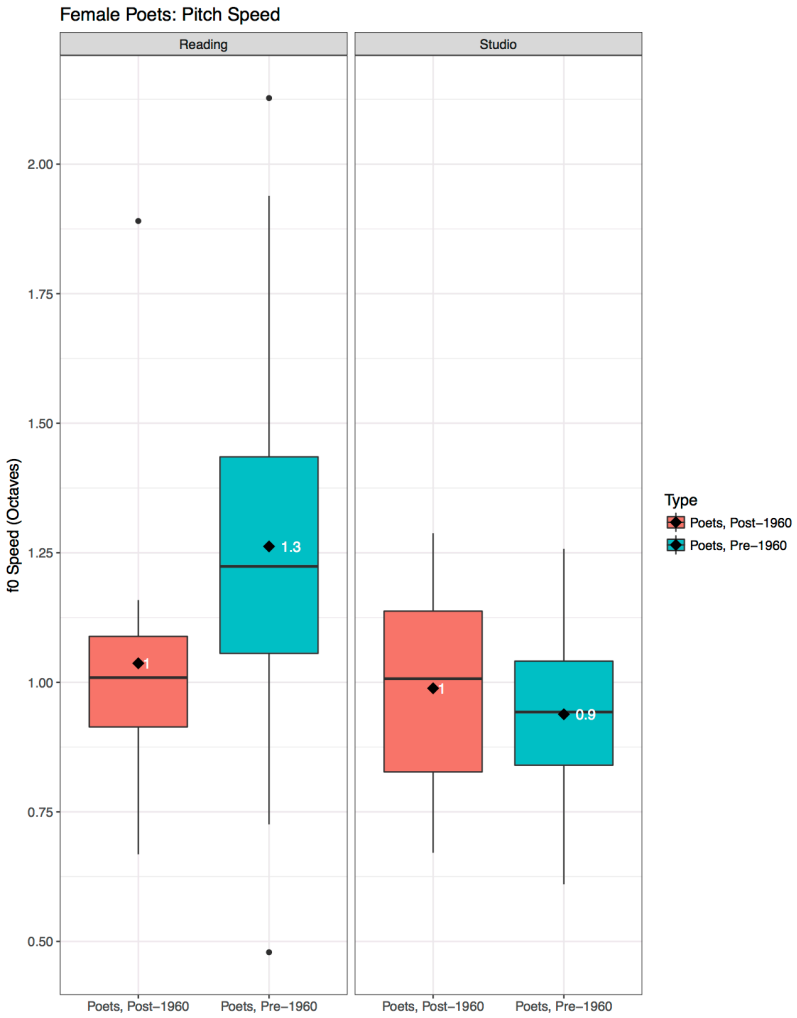


Figure 21. Comparing female poets in live readings born before 1960 and female poets in live readings born after 1960 on pitch speed.

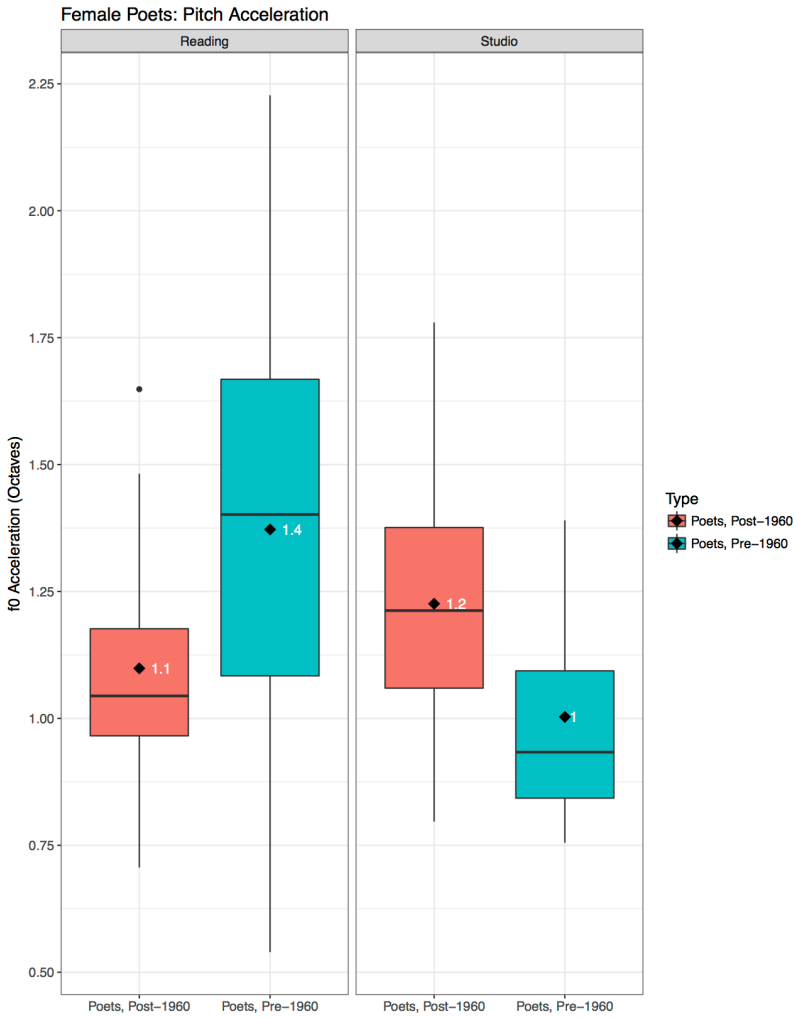


Figure 22. Comparing female poets in live readings born before 1960 and female poets in live readings born after 1960 on pitch acceleration.

What are we to make of these differences, which are not found on the male side? Interestingly, the narrow pitch range used by female poets born after 1960 in the sampled recordings of live readings is nearly as narrow as the average pitch range of all male poets (1.58 octaves), and the comparatively slow pitch speed and acceleration of the same group of female poets are even slower than the average

values for male poets (1.17 octaves and 1.26 octaves, respectively). Are contemporary female poets mimicking a less performative style perpetuated by male poets? Do male poets set the norm for poetry performance, and as more female poets succeed in the mainstream literary scene, are they approaching that norm? Are female poets, in trending toward less performative reading styles in recent years, reacting against complaints about the dramatic excesses of Confessional and Beat-related poets, such as those cited above from Hall and Bernstein?

These are questions worth testing further. In "The Program Era and the Mostly White Room," Spahr and Young note that,

> While total MFA and undergraduate creative writing degree recipients identify as women close to 70 percent of the time, neither the writers for mainstream media nor the authors published by small presses nor the winners of major prizes are 70 percent women. Instead, they are around 70 percent men. The percentage is exactly flipped in all those arenas where one might obtain something, from visibility to wages. The intensity of the disparity is numerically intense and repetitive.[49]

One interpretation of so-called creaky voice, but by now means the only one, is that, by lowering their voices, female speakers are attempting to sound more masculine and thus more authoritative,[50] perhaps in part because lower pitch is associated with physical size and potential threat across cultures and in non-human species.[51] Though we do *not* see a shift toward lower pitch among younger female poets, it may be that they are imitating, consciously or unconsciously or somewhere in between, other less Expressive aspects of male poetry reading styles noted above, namely narrow pitch range and slower pitch speed and pitch velocity. As long as male poets dominate, in publishing poetry and in winning poetry prizes, it may be a plausible hypothesis that female poets have adopted, and will continue to adopt, a less Expressive style of reading, associated with male poets, as long as that it the norm for male poets.

Finally, to consider sexual orientation, in the sampled recordings, female non-heterosexual poets exhibit a slightly wider pitch range than female heterosexual poets, but the difference is not statistically significant. Differences in other measures for these two groups are negligible, nor do we find significant differences between the sampled recordings of male heterosexual poets vs. male non-

[49] Juliana Spahr and Stephanie Young, "The Program Era and the Mainly White Room," Los Angeles Review of Books. Sept. 20, 2015. Accessed June 1, 2017.

[50] Ikuko Patrica Yuasa, "Creaky Voice: A New Feminine Voice Quality for Young Urban-Oriented Upwardly Mobile American Women?" American Speech 85, No. 3 (2010): 315-337.

[51] J.J. Ohala, "Cross-Language Use of Pitch: An Ethological View." Phonetica 40 (1983):1-18.

heterosexual poets.

## Skeptical and Humanist: PennSound vs. Iowa?

In terms of aesthetic-ideological camps, we also find some significant differences between sampled recordings from PennSound and those from other archives, and between twenty Iowa-trained poets and poets who did not attend Iowa. Male and female poets who earned an MFA at Iowa, vs. poets who did not, exhibit:

- a significantly slower speaking rate
- significantly lower rhythmic complexity of pauses
- long pauses (nine of the twenty Iowa poets sampled, so nearly half, employ pauses of 2 seconds or longer, and four of those nine had pauses of 3 seconds or longer)

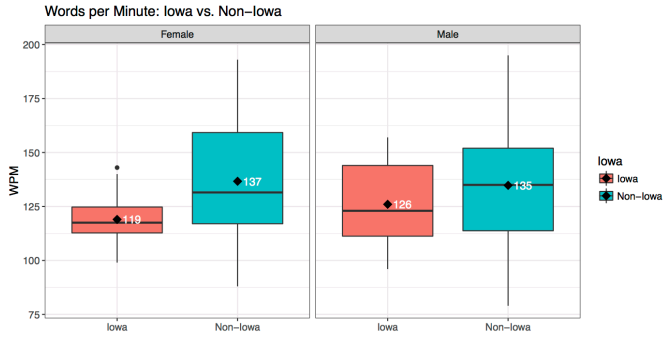


Figure 23. WPM, Iowa vs. Non-Iowa.

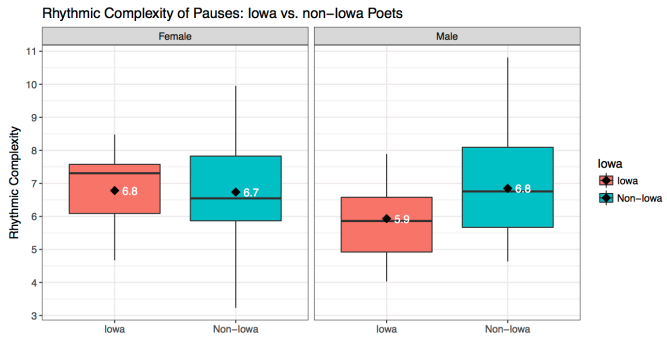


Figure 24. Rhythmic complexity of pauses, Iowa vs Non-Iowa.

Further, male poets who earned an MFA at Iowa may exhibit:

- a potential trend toward lower dynamism (not statistically significant, but interesting)

Finally, Iowa-trained poets born before 1960, vs. non-Iowa trained poets born before 1960, exhibit an even slower speaking rate:

All of these tendencies could be associated with a comparatively Dramatic or Formal style.

On the other hand, male and female poets sampled from PennSound, vs. non-PennSound poets, exhibit:

- a significantly faster speaking rate
- few long pauses (of the 33 poets sampled who employ pauses of 2 seconds or longer, only five (of a total of 23 PennSound poets) are found on PennSound (Eileen Myles, Fred Moten, Peter Gizzi, Mei-Mei Bersenbrugge, and James Tate, who attended Iowa), and only one PennSound poet (Eileen Myles) employs pauses of at least 3 seconds or longer.

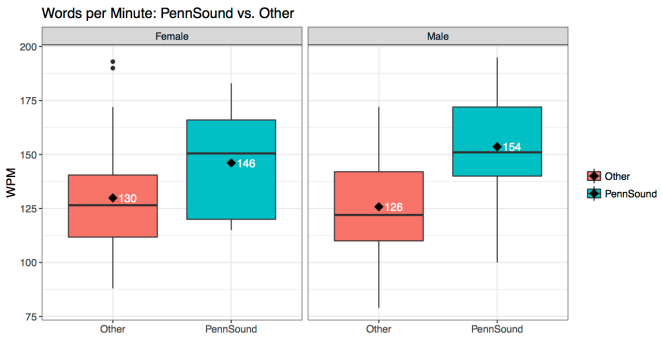


Figure 26. WPM, PennSound vs. other.

Few long pauses are associated with a Conversational style. Again, of the nineteen Buckeye conversational speakers, only two had pauses of 2 seconds or longer.

Male PennSound poets, compared to Iowa poets, also exhibit:

- higher rhythmic complexity of pauses

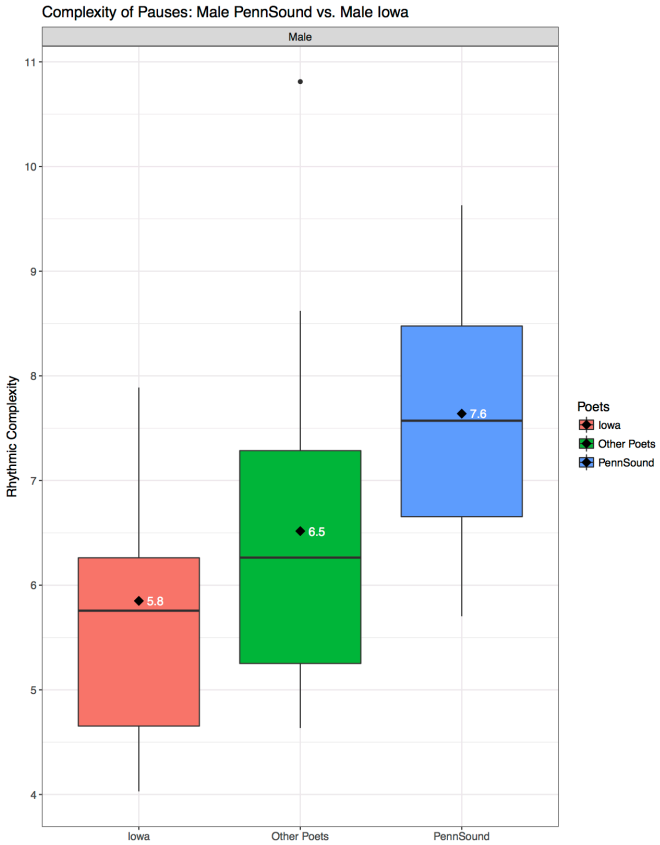


Figure 27. Rhythmic complexity of pauses, male PennSound vs. male Iowa.

Arguably, judging from this small sample, Iowa-trained poets may be more likely to read in a more Formal and/or Dramatic style, in terms of rhythm and speaking rate, than poets not trained at Iowa, and PennSound poets may be more likely to read with more Conversational pacing, in terms of speaking rate, pauses, and rhythmic complexity, compared to poets not found on PennSound.[52]

[52] NOTE: Of the twenty Iowa-trained poets, only two of the recordings were found on PennSound: James Tate and Jorie Graham. Two other Iowa-trained poets we sampled can be found on PennSound—Joshua Clover and Matthew Rohrer—but we sampled recordings of them from other websites. Tate reads at 157 WPM, and Rohrer at 156, unusually fast for Iowa-trained poets in this sample, but in line with PennSound poets. Graham is typically Iowa-slow, at 115 WPM, though her experimental aesthetics make her an obvious fit with PennSound. Clover is average, at 132 WPM, though it's possible he might have read slower than usual in the recording sampled, for the benefit of

From this comparison between the sampled recordings from poets found on PennSound vs. Iowa-trained poets, we conclude that speaking rate and rhythmic predictability may be key factors in the perception of a poet's reading style as conventional/traditional/mainstream vs. experimental—or humanist vs. skeptical, in Allison's terms. And indeed, comparatively experimental poets, judging from the PennSound sampled recordings, may indeed be reading poems faster, with more idiosyncratic, Conversational rhythmic and timing patterns, perhaps suggesting a more playful, less serious attitude toward the material, compared to Iowa-trained poets perceived as more Formal, who might be thought to treat poetry as a serious, traditional art form, and to reflect this attitude in a more Formal reading style.

## Intersections of Race, Gender, and Generation

What about race and ethnicity? In this sample, we find few statistically significant differences between racial and ethnic groups. Interestingly, not only does the trend toward a less Expressive style among younger versus older female poets hold true among the sampled recordings of thirteen female African-American female poets, it is more pronounced. Most of the sampled recordings of the older African-American female poets are among the most Expressive, while most of the sampled recordings of the younger African-American female poets are among the least Expressive.

- Seven of the ten female poets with the highest values for dynamism are African-American poets born before 1960, some associated with the Black Arts movement. They are: Wanda Coleman, Sonia Sanchez, Harryette Mullen, June Jordan, Lucille Clifton, Jayne Cortez, and Rita Dove (Dove is the only Iowa-trained poet).
- Six of these poets (all but Dove) are also among the ten female poets with the fastest pitch speed, and five (all but Dove and Cortez) are also among the ten female poets with the fastest pitch acceleration.
- In terms of high dynamism, fast pitch speed and fast pitch acceleration, the non-African-American poets who also show up in the top ten lists for these values are Marilyn Chin, Amalia Ortiz and Rae Armantrout.
- Three of these poets (Jordan, Sanchez and Cortez) are also among the fastest in terms of speaking rate (WPM), again joined by Rae Armantrout.

some non-native-English speakers, because he was reading in Paris. Notably, this sample shows no significant differences in pitch measures.

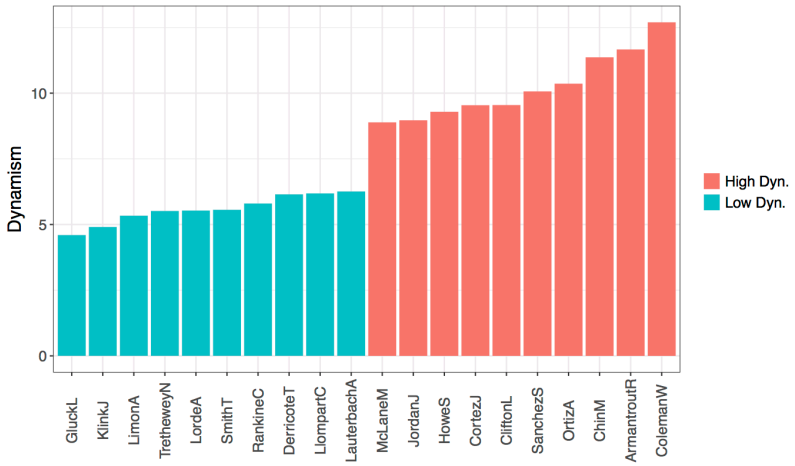


Figure 28. Dynamism, female poets, highest vs. lowest.

If we were only to consider the sampled recordings of the older generation of African-American female poets, these patterns might seem to suggest that African-American racial identity among female poets is sometimes associated with an Expressive-Conversational style.

However, turning to the younger African-American female poets:

- Five of the ten sampled recordings of female poets with the lowest values for dynamism are also African-American, three of them born after 1960, two before 1960. They are: Tracy K. Smith, Natasha Trethewey, Audre Lorde,[53] Toi Derricotte, Claudia Rankine, and Elizabeth Alexander.
- Just three of the ten sampled recordings of female poets with the lowest values for dynamism are white: Louise Glück, Joanna Klink (the only Iowa-trained poet of the ten), and Anne Lauterbach.
- Four of the sampled recordings of female African-American poets—Lorde, Trethewey, Smith, Derricotte—also rank among the slowest in pitch speed and pitch acceleration. Again, they are joined by Glück and Klink.
- Three of the same sampled recordings—of Lorde, Derricotte and Alexander—are also among the slowest among female poets in terms of speaking rate. Again, they are joined by Glück and Klink.
- Of the five sampled recordings of female African-American poets with

[53] The recording sampled by Lorde is a studio recording from very late in her life, while the others are live readings. Lorde uses a comparatively wider pitch range than Smith, Trethewey, Derricote, Rankine and Alexander.

very slow pitch speed and acceleration and low dynamism, however, only Trethewey also exhibits an extremely narrow pitch range. In fact, she uses the narrowest pitch range (at 1 octave) of all 50 female poets.

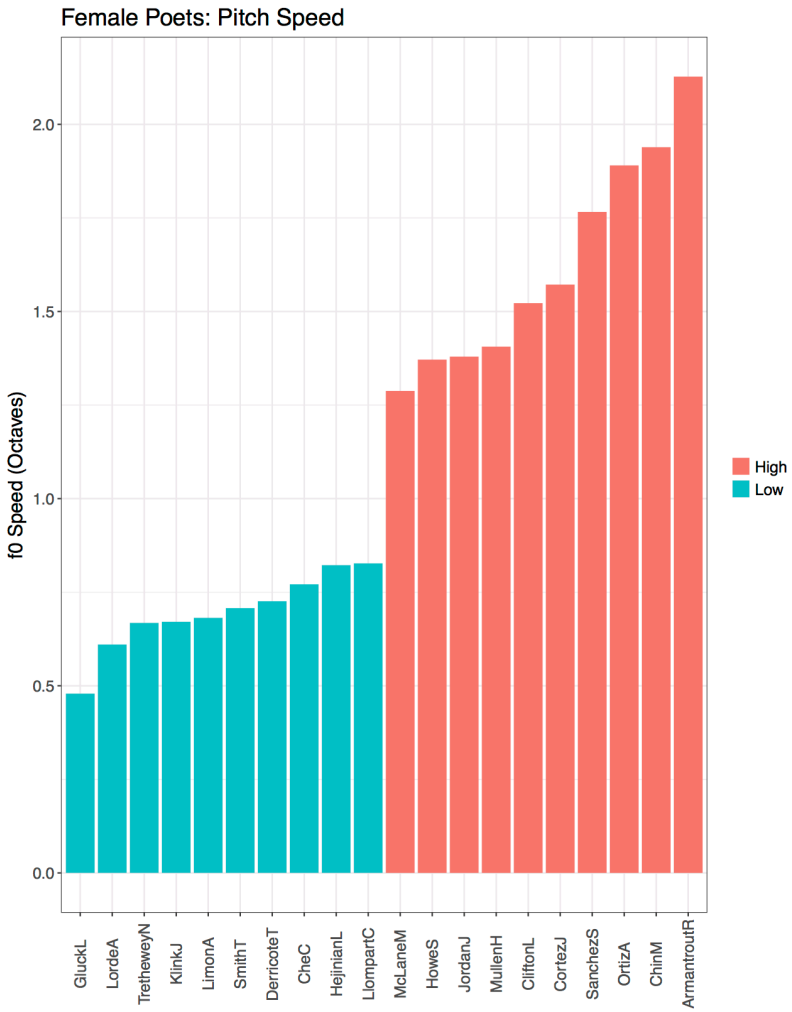


Figure 29. Pitch speed, female poets, highest vs. lowest.

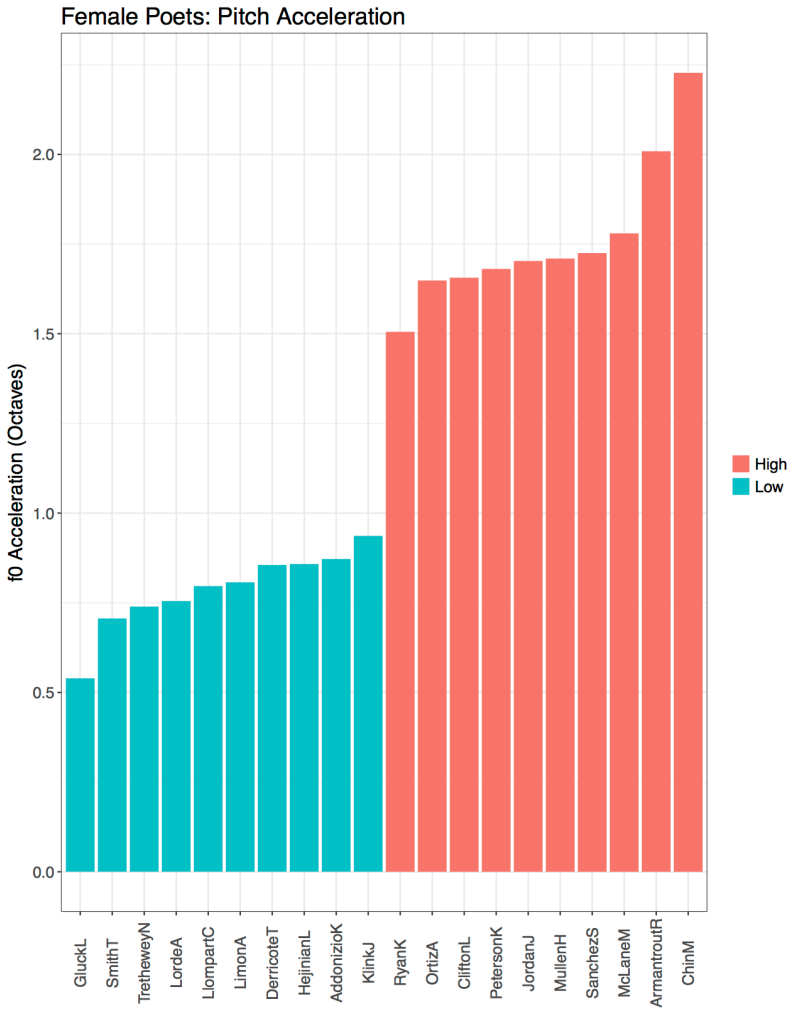


Figure 30. Pitch acceleration, female poets, highest vs. lowest.

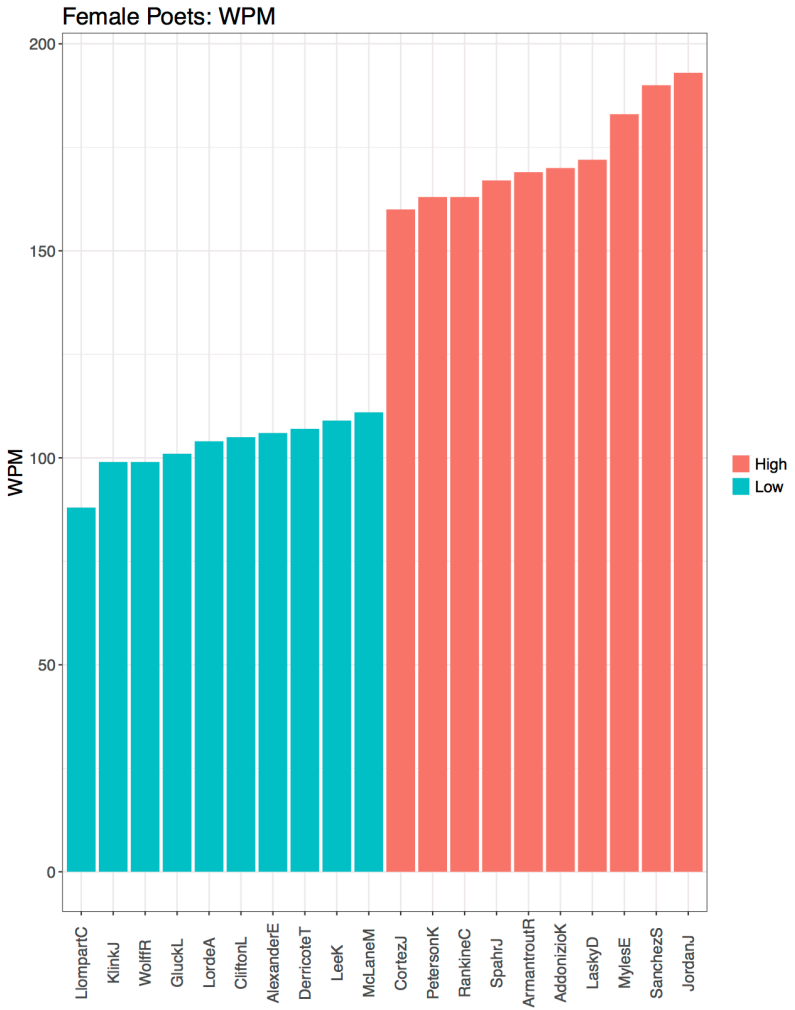


Figure 31. WPM, female poets, highest vs. lowest.

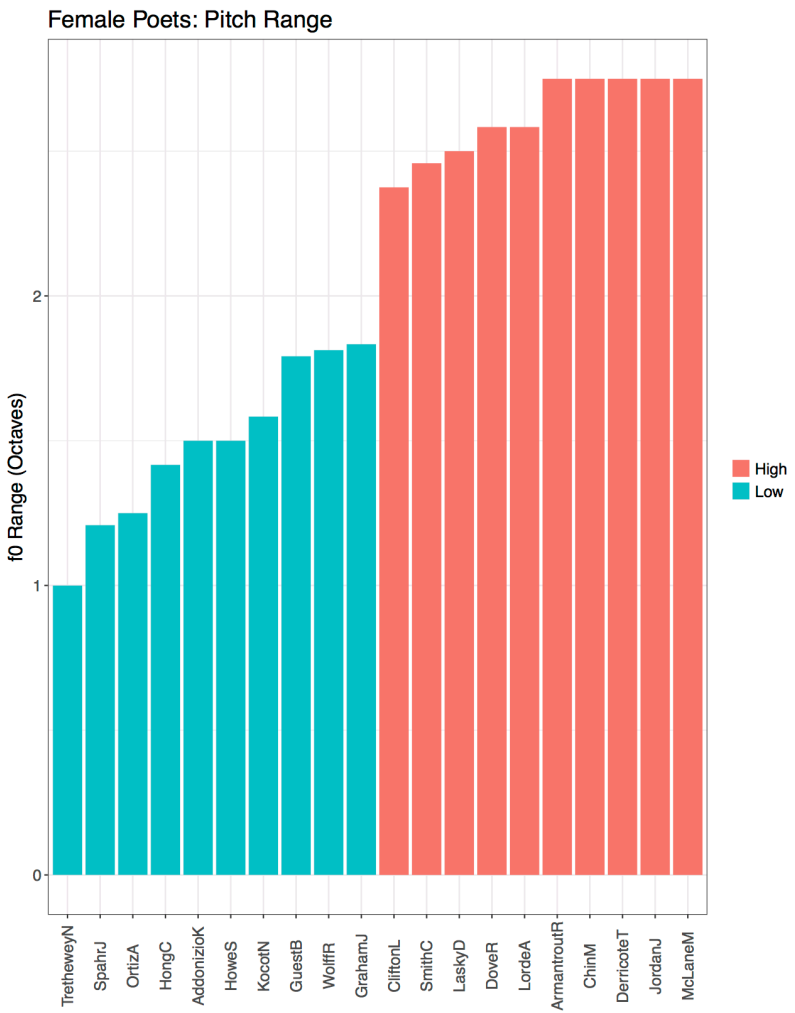


Figure 32. Pitch range, female poets, highest vs. lowest.

What do these female poets have in common who, at least some of the time, read in a less Expressive, more Formal style, have in common? Glück and Trethewey are both former U.S. Poets Laureate, Tracy K. Smith was named U.S Poet Laureate in June 2017, and Elizabeth Alexander read at President Barack Obama's inauguration in 2008. Alexander was also a finalist for the Pulitzer Prize in 2006, Glück won it in 1993, Trethewey won it in 2007, Smith in 2012, and Rankine won

the National Book Critics Circle Award for Poetry in 2014. Four of these poets also attended elite Ivy League universities; Smith attended Columbia and Harvard, Rankine and Glück and Columbia only, and Elizabeth Alexander attended the University of Pennsylvania. Trethewey attended Hollins University.

And what do these female poets have in common who, at least some of the time, read in a more Expressive and Conversational style? Those who are not older African-American poets influenced by or associated with the Black Arts movement include the Tejana poet Amalia Ortiz, sampled from the Russell Simmons Presents Def Poetry (Def Jam Poetry on YouTube) and associated with performance poetry, the Iowa-trained Marilyn Chin, and the break-out mainstream success of the L=A=N=G=U=A=G=E school, Rae Armantrout. Of the African-American poets in this group, only Dove—whose sampled recording exhibits high dynamism, but not high values by other Expressive measures—has won the Pulitzer Prize (in 1986) and served as U.S. Poet Laureate. And while all of these poets have significant reputations, the only other one among them to win a Pultizer (in 2010) is a white poet, Rae Armantrout. Clifton's work was nominated for the Pulitzer Prize (in 1980 and 1987). There is also a slight tendency toward public education among these poets. Clifton attended Howard University, Armantrout attended UC Berkeley and San Francisco State, and Dove attended Iowa. Ortiz attended the University of Texas-Rio Grande Valley, Jordan attended Barnard College, Cortez attended Compton Community College, Sanchez attended NYU and Hunter College, Coleman attended CSU Los Angeles, and Mullen attended UC Santa Cruz and UT Austin.

It seems notable that not one of recordings sampled of younger African-American female poets fall into the highly Expressive group. These are poets who, given their mainstream success, are often reading to the "mainly white room[s]" that continue to dominate literary culture in the U.S., as Spahr and Young have established. It is also notable that the sampled recordings of African-American female poets are very well-represented among the lowest and highest values for dynamism, and that there is a strong correlation between their birth year and which end of the Expressive spectrum they fall on.

Setting aside the relative appeal of the poems they write to various audiences, it would seem that, from this limited sample, younger female African-American poets who read in a less Expressive, more Formal manner also find more mainstream recognition in white-dominated literary culture, in terms of prizes and the platform of the U.S. Poet Laureate office, compared to highly Expressive and more Conversational African-American female poets. Or to turn it around, female African-American poets who find mainstream recognition in white-dominated literary culture—who frequently read to "the mainly white

room"—also read in a less Expressive, more Formal manner. It would be interesting to test whether this tendency intensifies, falls away or persists if we consider a larger representation of their poetry recordings, and how it plays out over the course of poets' careers.

Of course, these highly recognized younger female African-American poets are also mostly of a younger generation than the highly Expressive and more Conversational African-American poets who have not received such mainstream recognition. Perhaps in the fact that they are finding greater recognition, we might see progress toward a more diverse literary culture—but if so, perhaps it is progress on the performance terms of white mainstream literary culture. This is not to presume that a more Expressive style is preferable, but we simply note that judging provisionally from these sampled recordings, female African-American poets who use a more Expressive style may be less likely to be found among those who are recognized by mainstream success.

We also want to emphasize that this trend toward a less Expressive style, which we might arguably associate with male poets, is seen in this sample across all races and ethnicities among all 25 younger female poets. Thus it may be that generation and gender trump race in terms of the trend toward lower expressivity, *or* it may be that African-American racial identity—given that black women still form a relatively small group among mainstream American poets—is a factor that correlates with even greater conformity to dominant performance trends. The role of class is not to be overlooked either, but it is, as noted above, quite difficult to characterize for poets. If attending Iowa for graduate study in creative writing and/or attaining mainstream success is correlated with a more Formal, less Expressive reading style, we speculate that this would be true across racial groups. However, we found no statistically significant differences in performance styles between poets trained at public versus private universities.

Turning to male poets, we seem to find more latitude for different performance styles, in the lack of trends associated with particular identity markers. For instance, we not find that sampled recordings of African-American poets are clustered, like those of African-American female poets, at the extremes of measures we associated with the most and least Expressive or Conversational. Among male poets, we do find a slight difference in terms of pitch range and racial groups; African-American male poets use a narrower pitch range, on average, than non-African-American poets, but they may also use slightly faster pitch acceleration, as a group. Among the ten male poets with the lowest values for dynamism, we find three Iowa-trained poets—Juan Felipe Herrera (b. 1948), who recently served as U.S. Poet Laureate, D.A. Powell (b. 1963), and Michael Ryan (b. 1946)—and two younger African-American poets, Fred Moten (b.

1962) and Rowan Ricardo Phillips (b. 1974). And among the ten poets with the highest values for dynamism, we find one Iowa-trained poet, Robert Bly (b. 1926), and one younger African-American poet, Jamaal May (b. 1985).

Compared to sampled recordings of younger female African-American poets, younger male African-American poets exhibit more variety in performance styles. In terms of two measures that seem crucial to an Expressive style—pitch speed and pitch acceleration—three of the sampled recordings with the highest values are of African-American poets: again, Jamaal May, Reginald Dwayne Betts (1980) and Nathaniel Mackey (b. 1947). Carl Phillips (b. 1959) also appears among the fastest in pitch acceleration. (May's recording is a statistical outlier in pitch speed.) However, they keep company with sampled recordings of an array of older and younger poets who have little in common in terms of education or race/ethnicity. And sampled recordings of three relatively younger African-American male poets also show up among the ten males with the slowest pitch acceleration: Fred Moten (b. 1962), Terrance Hayes (b. 1971), and Rowan Ricardo Phillips (b. 1974). Sampled recordings of Carl Phillips and Rowan Ricardo Phillips also both show up among the ten with the narrowest pitch range, and no male African-American poets show up among the ten with the widest pitch range. Just one sampled recordings of a male African-American poet shows up among the ten slowest male poets in terms of speaking rate (WPM), which we associate with a more Formal style: Reginald Dwayne Betts (b. 1980). Sampled recordings of two African-American male poets show up among the fastest in terms of speaking rate, which we would associate with a Conversational style: Kevin Young (b. 1970, the current poetry editor of *The New Yorker*) and Shane McCrae (b. 1975, an Iowa-trained poet). Interestingly, sampled recordings of five of the ten poets with the fastest speaking rate are Iowa-trained, three of them younger poets (Shane McCrae, Robert Bly, Robert Fernandez, b. 1980, James Tate, b. 1943, and Matthew Rohrer, b. 1970), and three of the ten poets with the slowest speaking rate are older Iowa-trained poets (Mark Strand, b. 1934, Michael Ryan, b. 1946, and Juan Felipe Herrera).

There is simply no clear correlation among subgroups of male poets and particular performance styles (aside from the PennSound / Iowa differences discussed above,) in terms of racial or ethnic identity or education or archive or sexual orientation or generation. We do find that male poets in studio recordings exhibit higher mean pitch, a wider pitch range, and a lower rhythmic complexity of phrases—that is, less predictable rhythm—than in live readings, which would all be more typical of Conversational speech. If we compare the 19 male poets born before 1960 vs. the male poets born after 1960 in live readings, we find almost no difference in pitch range, pitch speed, or pitch acceleration.

Judging from this limited sample, then, the intersection of race and generation may be more salient intracategories of analysis for the performance styles of female poets than for male poets. For us, this emphasizes the need for considerable nuance in approaching the analysis of performance styles in terms of identity categories. Legal scholars have noted that it is absurdly simplistic for notions of identity to be dictated and analyzed according to the single-axis paradigms of the U.S. Census. Surely we do not want our notions of the performance styles available to the contemporary American poet to be single-axis either. In a 2017 editorial in the *New York Times*, sociologist Herbert J. Gans argued that the politically divisive notion of a looming non-white majority in the U.S. has been caused by the Census Bureau's use of simplistic racial categories and ignorance of the changing meaning assigned to "white" in U.S. history ("The Census and Right-Wing Hysteria.") Among other things, he notes that as mixed-race families become ever more common, an increasing number of mixed-race Americans (especially the children of Latino-white and Asian-American and white couples) perceive themselves as, and are perceived by others, as white. In the context of this research, such an insight again raises the question of whether, judging from this limited sample, younger female poets of all races and ethnicities are trending toward a less Expressive performance style perpetuated by male poets, many of whom are white, even as younger male poets exhibit more variety in performance styles.

As we analyzed the data from these 100 samples, we often found ourselves re-thinking the categories we might use in analyzing any large group of poetry recordings. It may turn out that our twelve prosodic measures are more useful in analyzing the performances styles of individual poets over the course of their careers, in longitudinal studies. But perhaps such large-scale studies may also complement the more common and innovative work of large-scale textual and image analysis in the digital humanities, which sometimes counter the prepossessing claims of literary critics who do not apply computational methods in their research. One example would be Richard Jean So and Andrew Piper's 2016 research testing some of Mark McGurl's claims in *The Program Era: Postwar Fiction and the Rise of Creative Writing* about the influence of creative programs on postwar U.S. literature.[54] They found that "[white and non-white authors] based on diction, theme, and syntax … in both MFA and non-MFA writing, are impossible to distinguish."

[54]So and Piper, "How Has the MFA Changed the Contemporary Novel?" *The Atlantic*, March 6, 2016.

## Can Poet Voice and Other Performance Styles Be Quantified?

If Poet Voice is indeed practiced by the four poets MacArthur discussed in "Monotony, the Churches of Poetry Reading, and Sound Studies"—Louise Glück, Natasha Trethewey, Juliana Spahr and Michael Ryan—it turns out not to always correspond with a narrow pitch range. What the sampled recordings of these four poets do have in common in prosodic measures, compared to the averages for all 50 male and all 50 female poets, are slow pitch acceleration, especially Glück and Trethewey. The sampled recordings of these two poets also exhibit very slow pitch speed—in fact, both are statistical outliers for pitch acceleration and pitch speed, compared to all 25 female poets born after 1960—while the sampled recordings of Spahr and Ryan are closer to, but still slower than, average values for pitch speed. Slower pitch speed and pitch acceleration, again, we associate with a less Expressive, more Formal Style.

Three of the sampled recordings of these four poets (of Glück, Trethewey, and Ryan) exhibit a comparatively slow speaking rate, in Words Per Minute, typical of a Formal style, but in her sampled recording, Spahr speaks much faster, typical of a Conversational style and of poets found on PennSound (which she is, and which the other three are not). In terms of rhythmic complexity of pauses, however, Spahr has the lowest value of all 100 poets, which would be associated with a Formal style—perhaps reflecting the parallelism, repetition and anaphora of the poem she reads, "We Arrived"—while the other three exhibit rhythmic complexity of pauses that is close to average. In terms of low dynamism, the sampled recording of Glück is a statistical outlier among female poets born before and after 1960.

Can we use these values to discover other poets who seem to use Poet Voice? Other sampled recordings of female poets with comparatively slow pitch acceleration and slow pitch velocity include Joanna Klink, Ada Limon, Tracy K. Smith, Cathy Linh Che, Cecilia Llompart, and Brenda Shaughnessy. Of these six poets, the sampled recording of Tracy K. Smith rivals those of Trethewey and Glück for both slow pitch speed and slow pitch acceleration.

On the male side, the sampled recording of Ginsberg exhibits the slowest pitch acceleration and slowest pitch speed—he is a statistical outlier for both measures, compared to all 50 male poets. Though Ginsberg does not seem to us to use Poet Voice, five male poets who do seem to, in the recordings sampled—Brian Teare, Matthew Zapruder, Jeffrey Yang, Michael Ryan, and Dean Young—share similarly low values for pitch speed and/or pitch acceleration, and three of them use comparatively slower speaking rate in Words Per Minute, though only Zapruder exhibits fairly low rhythmic complexity of pauses. Frank O'Hara, interestingly, in

a sampled recording of "The Day Lady Died," exhibits slow pitch acceleration and pitch speed; however, his pitch range is more than twice as wide as Ginsberg's, which typically corresponds with a more Conversational style.

From this small sample, we would conclude that perhaps when some listeners hear poets read with one or more of these characteristics—slow pitch speed, slow pitch acceleration, narrow pitch range, low rhythmic complexity, and/or slow speaking rate—they hear Poet Voice. What Poet Voice seems to correspond to, in terms of our prosodic measures, is a more Formal, less Expressive, less Conversational style.

What about other performance styles? Turning to individual poets, we briefly offer some further characterizations, with examples. Poets who we would call Conversational, from these sampled recordings, include those who use a relatively fast speaking rate and a wide pitch range, similar to the Buckeye conversational speakers. Examples would include Jayne Cortez, Katie Peterson, Dorothy Lasky, Rae Armantrout, Eileen Myles, June Jordan and Sonia Sanchez. They all exhibit a speaking rate of at least 160 WPM, and a pitch range of at least 2 octaves. Male poets would include Michael Palmer, Amiri Baraka, John Yau, Frank O'Hara, Kenneth Goldsmith, and CA Conrad, as they all a speaking rate of at least 160 WPM and a pitch range of at least 1.5 octaves. A Conversational-Less Expressive poet? Perhaps Fred Moten, who exhibits a fast speaking rate and low dynamism. A Conversational-Expressive poet? Perhaps Kenneth Goldsmith, who exhibits a fast speaking rate and high dynamism. An Expressive-Conversational-Formal poet? Perhaps Maurice Manning, who uses a fast speaking rate, average rhythmic complexity of pauses, a fairly wide pitch range, and nearly average pitch speed and acceleration. He is also a southern poet, born and raised in Kentucky. Do other southern poets exhibit similar performance styles? We have no idea. A Dramatic poet might use a slow speaking rate, high dynamism, a wide pitch range, fast pitch speed and acceleration, and frequent long pauses; again, our example here is Frank Bidart. A Formal poet would exhibit low rhythmic complexity and low dynamism—e.g, Spahr and Ginsberg. These speculations might suggest ways that the data we've collected on sample recordings of 100 American poets can be applied to describe a complex range of performance styles.

Raphael Allison opens *Bodies on the Line* by offering, as exemplars of humanist and skeptical styles, an ethnically tinged binary opposition of poetry performance styles in Ben Lerner's 2011 novel, *Leaving the Atocha Station*, which takes its title in turn from an Ashbery poem. The self-conscious narrator Adam Gordon opposes his own "deadpan and monotonic but surprisingly confident way" of reading with another poet named Tomas, who is described thus:

> Tomas looked less like he was going to read poetry and more like he was going to sing flamenco or weep; he did not say thank you or good evening or anything but instead paused dramatically as if to gather his strength for what would be by any measure a heroic undertaking… he struck me as a caricature of himself, a caricature of El Poeta…. [his poetry] "an Esperanto of clichés."[55]

So the follower of Ashbery is deadpan, monotone, and confident, the Spanish poet (this is Madrid) is excessively emotional, self-conscious and unoriginal. The cultural bias in the narrator's distaste for Tomas's Expressive reading style is clear.

Allison's lack of reflection on this aspect of it is somewhat surprising, particularly given the debates that have arisen around the more performative tendencies in slam poetry, detailed by Susan B.A. Somers-Willit in *The Cultural Politics of Slam Poetry: Race, Identity, and the Performance of Popular Verse in America* [56]. Harold Bloom has called slam poetry "the death of art."[57] Coincidentally, Allison is married to the Pulitzer Prize-winning African-American poet Tracy K. Smith, who, again, became U.S. Poet Laureate in June 2017, and is the fourth female African-American poet to receive the Pulitzer Prize for poetry (the others are Gwendolyn Brooks in 1950, Rita Dove in 1987, and Natasha Trethewey in 2007). As noted above, in the recording we sampled, Smith favors a less Expressive style, in terms of low dynamism and slow pitch velocity and pitch acceleration, and a Formal style, in terms of low rhythmic complexity and low dynamism, and an average speaking rate. At 127 WPM, she does not use a fast speaking rate, which we associated with a Conversational reading style, often found among PennSound / skeptical poets, but in Allison's impressionistic and approving descriptions of a skeptical style, avoiding other prosodic patterns we associate with Expressivity, as she does, seems important. Allison does not discuss his wife's poetry reading style in the book, but the fact that, in the sample we analyzed, her performance style seems to correspond well with his aesthetic-ideological preferences in his scholarly work suggests the degree to which perception of performance styles is personal.

Allison does describe in some detail his impressions of two recordings we sampled in our analysis—Allen Ginsberg's Big Table reading in 1959, and John Ashbery's at the Living Theatre in 1963—and finds them to be highly distinct. We quote at some length his oppositional description of the two poets' performance styles, in preface to reflecting on how our analysis of prosodic measures in the

[55] Lerner 35, quoted in Allison, *Bodies on the Line* xi-xiii.

[56] Susan B.A. Somers- Willett, *The Cultural Politics of Slam Poetry: Race, Identity, and the Performance of Popular Verse in America,* (Ann Arbor: University of Michigan Press, 2009).

[57] quoted in Somers-Willit, *The Cultural Politics of Slam Poetry.*

sampled recordings of 100 poets may complement and sometimes counter this sort of attentive, impressionistic close listening:

> Ginsberg declaim[ed] *Howl* in a peremptory style that is truly affecting. Sometimes, phrases are emphasized with staccato syllables … Other passages are giving wailing emphasis… And yet other recordings of Howl tell a different story… A skeptical counterforce to humanist reading was audible in the Dharma Lion himself.
>
> Yet if performer-readers like Ginsberg were touched by the antinomies of sixties reading, others were more fully committed to a style in which presence was not only out of fashion (or perhaps not yet in fashion) but studiously avoided…. Ashbery—appropriately so, if we key his style to Lerner's Adam Gordon. Ashbery engages in which might be termed 'metareading,' a style that … puts distance between voice and poem and from the reader's or listener's own relationship to it…. Ashbery's form of reading … unlike Ginsberg's, lacks inflection or dynamic vocal range… and his voice's flatness and freedom from affective pitch are remarkable—almost a performance of nonperformance. While it's hard not to hear Ashbery practically straining to steer clear of the semiotics of emotion, in a 1999 interview with Daniel Kane, Ashbery frames his experience as a reader after returning from Paris in the early 1960s as unpracticed amateurism … the poet's self-image is still, decades later, that of the wide-eyed outsider entirely unskilled at live reading. And it shows…. [in his] affect-free monotone.
>
> In a recording of Ashbery reading at the YM-YWHA in 1967, the poet Richard Howard introduces Ashbery by referring to this Living Theatre performance in legendary terms. According to Howard, Ashbery read with extreme dramatic flair that night …. None of this is remotely apparent from the recording of this event[.][58]

In this contrastive characterization of Ginsberg's and Ashbery's reading styles, Allison's confidence in his perceptions is striking, contra the live witness to Ashbery's Living Theatre reading, Richard Howard, who formed a very different impression of it. Is one of them more empirically accurate, in terms of prosodic measures, or are they simply valuing different aspects of the performance?

The sampled recordings we analyzed, of each poet reading part of a short lyric poem ("In Back of the Real" and " 'They Dream Only of America' "), cannot be said to characterize either reading overall. Nor is it apt to compare Ashbery's style

[58] Allison, *Bodies on the Line,* 6-9.

in reading mostly short poems with Ginsberg's manner in reading a very long poem, *Howl,* in which (as MacArthur has established in"Monotony, the Churches of Poetry Reading, and Sound Studies") Ginsberg does raise his pitch gradually, as Allison asserts. At any rate, our comparison of the prosodic measures in the two sampled recordings does not bear out the strong distinctions Allison makes between the performance styles of the two poets. In terms of speaking rate, rhythmic complexity, pitch range, and dynamism, Ashbery reads a little more conversationally than Ginsberg—perhaps tending toward a slightly more skeptical / PennSound style. In dynamism and pitch range, Ashbery's sample is close to the mean for all male poets born before 1960, not unusually flat. If his performance style, sampled here, is to stand for the skeptical style (which we connect loosely with a PennSound style, above), patterns in the sampled recordings of 100 poets might suggest that Ashbery's style is more common than the humanist style (which we connect loosely with an Iowa-trained style above), which Allison feels is now dominant. But then, there is also overlap between the performance style of Iowa-trained poets and Ashbery's. And if a flatter pitch means flatter affect means skepticism, Ginsberg's affect is somewhat flatter than Ashbery's.

Anecdotally, some members of academic audiences at Stanford University and the University of Notre Dame, to whom the two recordings have been played without being told who the poets are, have had trouble distinguishing between the two voices. Perhaps to the non-specialist, the similarities in Ginsberg's and Ashbery's voices—though Ginsberg was Jewish and Ashbery is not, they were born a year apart, both grew up in the Northeast and went on to attend elite universities there (Harvard and Columbia), both spent considerable time in New York City, and both were gay—trump any minor differences, which specialist audiences are more attentive to because we know how different their poetics are.[59]

[59] Interestingly, at Harvard, Ashbery and Frank O'Hara bonded over the fact that they had similar "hayseed accents." He remembered of their first meeting: "it was rather a surprise when I overheard a ridiculous remark such as I liked to make uttered in a ridiculous nasal voice that sounded to me like my own, and to realize the speaker was Frank…. Though we grew up in widely separated regions of the Northeast … we both inherited the same twang, a hick accent so out of keeping with the roles we were trying to play that it seems to me we probably exaggerated it, later on, in hopes of making it seem intentional … it fascinated us and was doubtless a reason why we became friends so quickly after our first meeting. On the telephone, I was told, we were all but indistinguishable. Once when I was at Frank's apartment in New York I picked up the phone and impersonated Frank to Joe LeSueur, one of Frank's closest friends, pretending to pick a quarrel with him for several minutes during which he was entirely taken in. Another time when Frank came to visit my parents' farm in upstate New York he walked into the kitchen one evening when my mother was washing dishes and asked if he could help; without turning around from the sink my mother said, 'No, John, go back in and talk with your friends.'" (Ashbery, *Selected Prose*, 171-172.) While the perceived similarities in their voices, as related to accent and nasality, are not among the prosodic measures we consider here, it is interesting that their average pitch is identical in the sampled recordings here—span class='emdash'>—122 hz—span class='emdash'>—and their pitch speed is similar, at 1.1 (Ashbery) and .8 (O'Hara) octaves per

Ginsberg and Ashbery are very different poets, of course, but from these sampled recordings, their performance styles are not so radically distinct from each other, nor is Ashbery markedly less Expressive than Ginsberg.

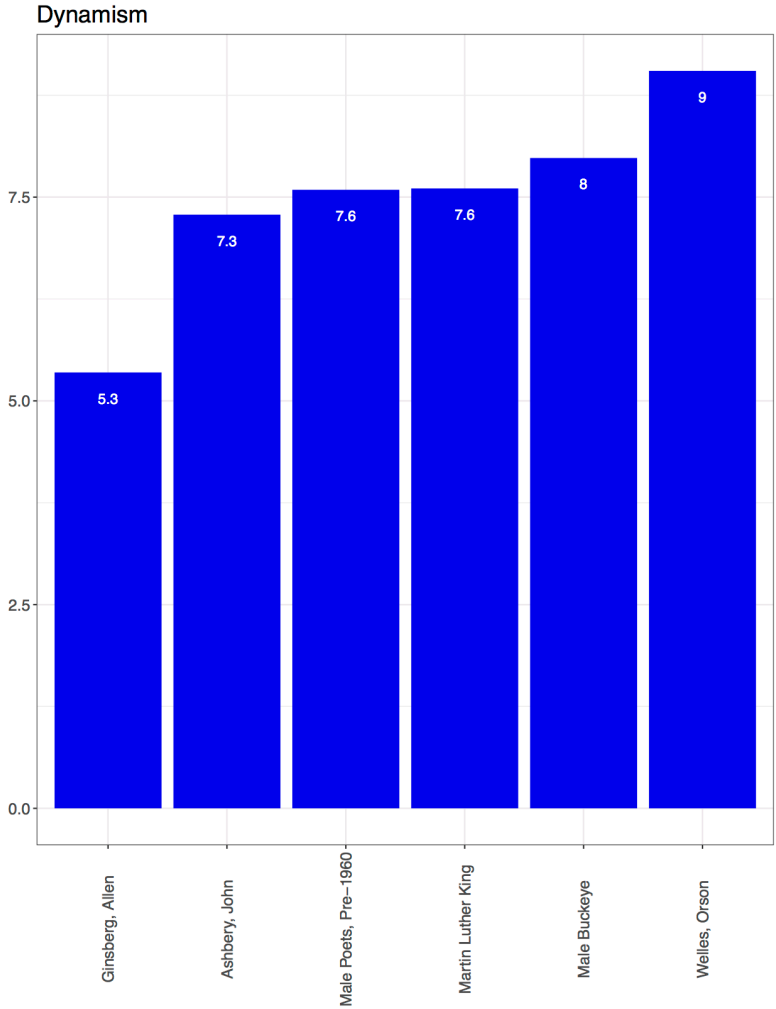


Figure 33. Dynamism, individual poets and groups.

second. However, in these samples, O'Hara uses a relatively faster speaking rate (177 WPM vs. Ashbery's 140 WPM) and a wider pitch range (2.3 octaves vs. Ashbery's 1.3 octaves).

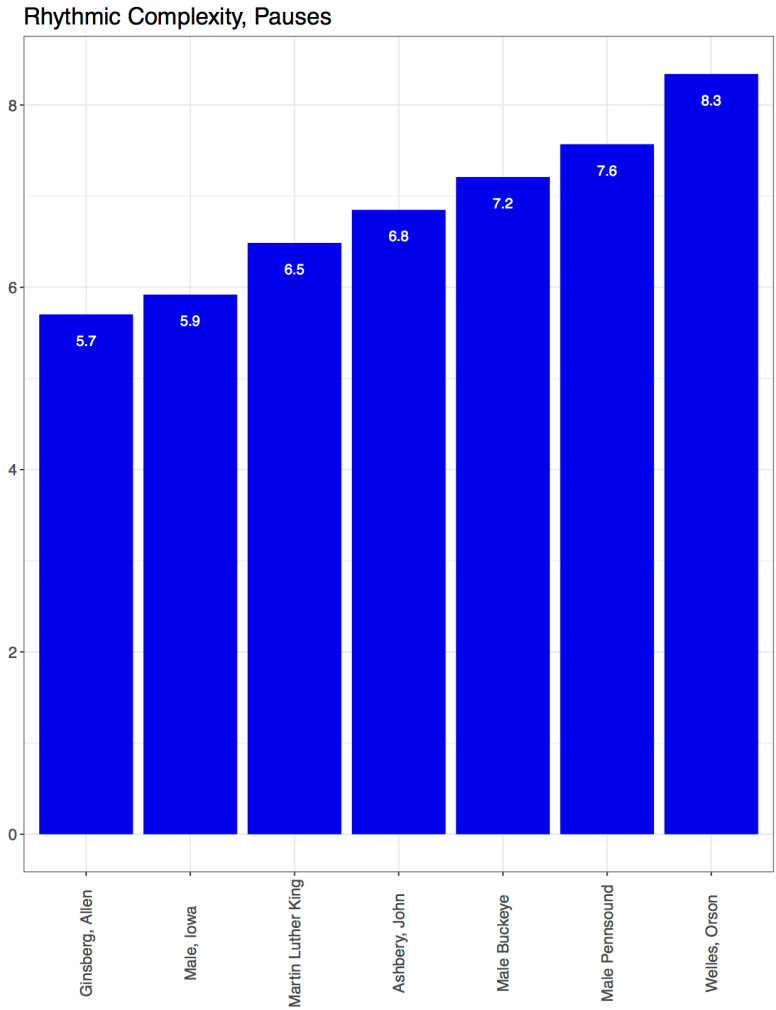


Figure 34. Rhythmic complexity of pauses, individual poets and groups.

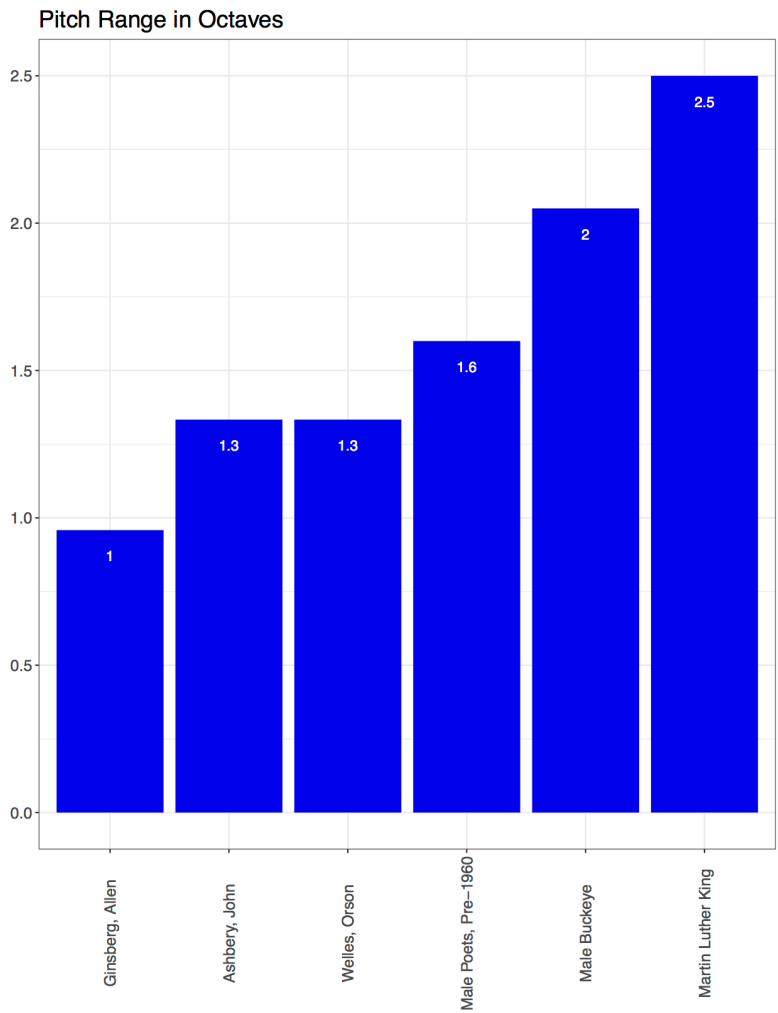


Figure 35. Pitch range, individual poets and groups.

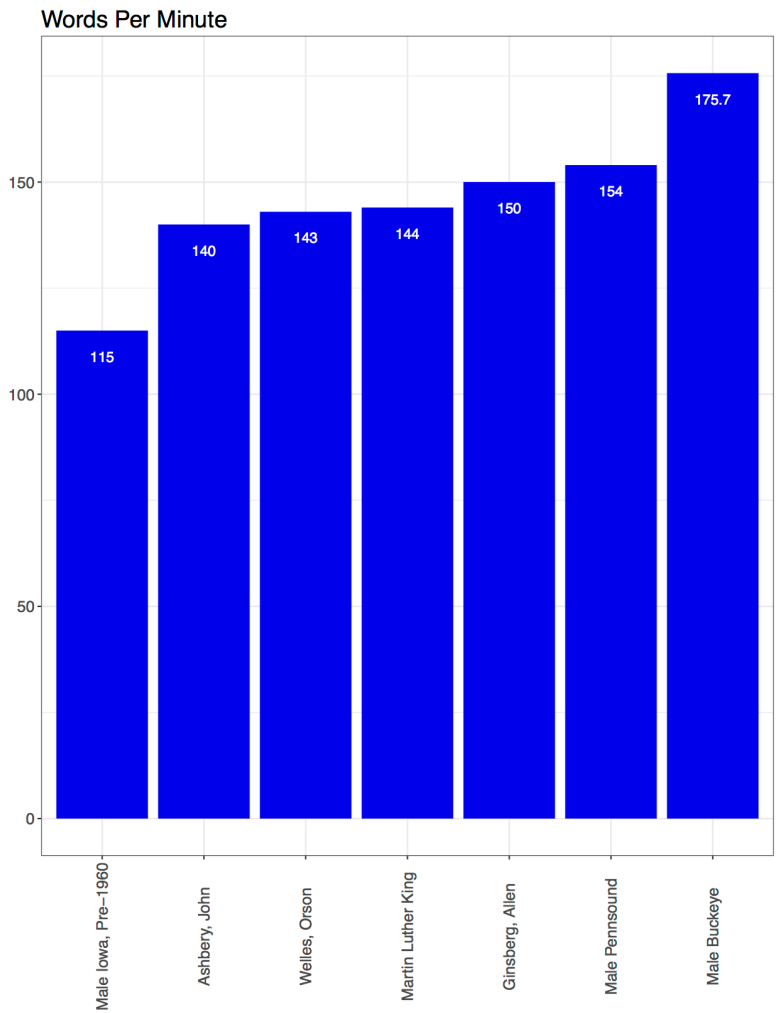


Figure 36. WPM, individual poets and groups.

## Conclusion

The sampled recordings of 100 American poets born before and after 1960 represent a tiny slice of each poet's existing recordings, and they tell us nothing about

the evolution of each poet's performance style over their entire career. These recordings also represent a very small sample of the rich and diverse profusion of contemporary American poets. Nevertheless, our research makes the first large-scale attempt that we know of to measure the prosodic patterns of poetry readings that audiences, critics and poets respond to, which undoubtedly influence the reception of a poet's work.

In *The Audible Past: Cultural Origins of Sound Reproduction*, Jonathan Sterne advances a persuasive critique, from ideological and scientific perspectives, of what he calls "the audiovisual litany," including the notions that "hearing tends toward subjectivity, vision tends toward objectivity" and "hearing is a temporal sense, vision is primarily a spatial sense."[60] Of course, vision is no more objective than hearing, and hearing certainly operates in a spatial as well as temporal sense. However, one value of our analytical approach is that it, in some sense, it slows down speech by giving us new ways (new to literary study, anyway) to think about our perceptions of it. It is undeniable that the complex experience of speech perception happens too quickly for us to analyze its every nuance in real time, except by listening again and again. Recorded sound will not hold still, as a printed text or image will, for our examination, and thus we find data about prosodic measures in recorded speech, as well as various forms of visualizing that data, useful for testing our impressions.

Indeed, the process of conducting this research has taught us to be more skeptical about our own and others' impressionistic judgments of poetry performance styles, simply by providing empirical methods for testing them. In preliminary fashion, it has also allowed us to begin to precisely describe what constitutes a Formal, Expressive, Conversational, and Dramatic style. And it has helped us recognize that we and other listeners often make quick judgments about a poet's performance style based on a few key features, such as a slow speaking rate or slow pitch speed—as with the refinement of MacArthur's previous characterization of Poet Voice—and that our preconceptions about a poet and our personal aesthetic-ideological preferences for certain performance styles may lead us to stop listening carefully once we make such judgments.

One of the most compelling insights of our research so far is that we see the most generational differences, in terms of the prosodic measures of the sampled recordings, among younger and older female poets. This suggests a possible connection, in the apparent shift toward a less Expressive style among younger female poets, between larger cultural trends—such as the apparent efforts of women to imitate the authority of male voices through creaky voice—and the

[60] Jonathan Sterne, The Audible Past: Cultural Origins of Sound Reproduction. Durham (NC: Duke UP, 2003), 15).

evolution of poetry performance styles. And while we are not surprised that we did not find strong correlations between race, ethnicity or sexual orientation and particular performance styles, this negative result serves as a salutary reminder of poets' individuality and intersectional identities. At the same time, the possibility that younger female poets—including some of the most highly recognized younger African-American female poets—may trend toward performance styles that correlate with those of white male poets, in terms of average prosodic measures, suggests a phenomenon of assimilation to or preference for mainstream styles perpetuated within the "mainly white room" of the contemporary U.S. poetry scene. Another initial insight is that measurable differences in performance styles may well exist among PennSound/skeptical/experimental and Iowa-trained/humanist poets—specifically, that poets found on PennSound may be more likely to employ a Conversational, less Formal performance style, judging from speaking rate and measures of rhythmic complexity. There will always be exceptions, of course, but these insights are worth testing on a larger scale, for instance by analyzing a larger number of recordings of younger and older Iowa-trained poets, and a larger number of recordings of poets found on PennSound.

Future directions for further research are many. They include the large-scale analysis of older recordings, going back to Longfellow and Tennyson, Eliot and Stevens, and so on. If there are clear Modernist styles of poetry reading, what prosodic patterns characterize them? If we can describe a consistent style used by Eliot, or Yeats, can we test whether these styles were as influential as we might think?[61] Another interesting question is how much poets vary their prosodic patterns in reading poetry versus conversation and interviews, which could be explored by analyzing their prosodic patterns in introductory chitchat and interviews versus poetry recordings. (In terms of prosodic measures, we would also like to study variations in amplitude or volume; though differences in recording equipment can affect volume tremendously, making it very difficult to compare speakers across recordings, it should be possible to measure and analyze how much speakers vary their amplitude within recordings.) Another question of interest would be the evolution of individual poets' performance styles through exhaustive analysis of all available recordings, including the investigation of whether and how much different venues and recording media and contexts correlate with distinct performance styles. Amiri Baraka and Charles Bernstein, among others, would both be good subjects for such a study, as their styles seem to have changed significantly over time. It would also be fascinating

[61] See our slight manipulation of a recording of Yvor Winters, who approaches Yeats's reading style in terms of pitch and timing patterns, in "Vocal Deformance and Performative Speech."

to analyze the performance styles in non-English-language poetry readings,[62] and other types of performative speech, from talking books and audio books to radio drama to newspeak to film acting to stand-up comedy to political speeches to academic lectures and TED talks, to discover what their distinct prosodic features might be and to see what they might have in common with poetry performance. Poetry reading does not flourish in a cultural vacuum; it is surely informed by all of the types of speech poets encounter in their daily lives. It would also be interesting to consider prescriptive guides to oral interpretation, including elocution manuals, and to test whether their suggestions are borne out in recordings of contemporaneous performative speech.

In a 2016 post about "Trump's Prosody" on the Language Log at the University of Pennsylvania, linguist and computer scientist Mark Liberman points to early and mid-20th century work on intonation in order to complain that we have done far too little to study, on a large scale, the distinctive prosody of social groups. He quotes one H.O Coleman, from 1914, who said that such "investigations… hitherto have been deprived of much of their value through inquirers' not going far enough afield (thus building up a theory on the few obvious examples that occur to one at the moment)" - that is, generalizing about a social group's intonation based on a few familiar examples. He also quotes Dwight Bolinger's excellent unanswered questions from 1949, "What are the peculiarities of intonation of social groups? We have observed that preachers, circus barkers, and professors favor certain modes; what are these modes?" …And so on. For linguists who wish to be scientists there is only one scientific procedure: gather the facts first, then theorize about them." Liberman concludes, "I wish that I could say that Coleman's and Bolinger's appeals [to study the prosody of social groups in depth] had been definitively answered. There were reasons in 1914 or 1949 or 1978 why it was hard to do what they asked — but we've run out of excuses."

Sound studies, in its open-ended and interdisciplinary nature, can allow humanities scholars to borrow, renovate and be inspired by the methods and insights of other disciplines. And we are heartened by Liberman's professional opinion that the field of linguistics has rarely concerned itself with the analysis of performance styles, especially the intonation, of particular social groups on a large scale.[63] This research is a step in that direction for the study of American poetry

[62] We are working with Aurelio Meza, a Ph.D. candidate at Concordia University, to analyze Voz viva, "the earliest, longest-running and most emblematic literary audio collection in Mexico, which includes 1,680 audio tracks in WAV format (73.2 GB), with roughly 1,000 poetry tracks."

[63] With Neville Ryant, Liberman has recently analyzed a large number of recordings from National Public Radio's *Fresh Air*, YouthPoint, political speeches and LibriSpeech, considering three variables—pitch range, length of utterance, and length of pause—to differentiate between "spontaneous"and"read" speech. See "Automatic Analysis of Phonetic Speech Style Dimensions."

in performance. The last thing we want to do is reduce its rich complexity to numbers. Instead, quantification of prosodic patterns and visualization of such data should help test our intuitions, refine our terms, and deepen the conversation about the evolution of performance styles in poetry reading and other forms of performative speech.