

**In Praise of Resistance:
Intonation's Productive Conflicts and/in Durs Grünbein**

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*'The poem is a picture puzzle of physiological origin,
similar to nervous system, anatomy, and bone structure. [...]*

The word is of physical origin'

(Grünbein, 'My Babylonish Brain')

Intonation, situated in the overlapping regions between rhetoric and phonology, structure and material, offers a productive point of entry to canonical questions about the relations between material and meaning, orality and literacy, effect and production. In the last decades of the twentieth century and the first decade of the twenty-first, work in or drawing on the methods of the natural sciences—especially cognitive science, neuropsychology, and evolutionary biology—has made considerable strides in developing an account of the material-phonological aspects of intonation. Such approaches have also begun working to identify areas of the brain in which intonational features are perceived and produced, following intonation into the level of neuroanatomical material. Often through comparisons with similar phenomena in music, these studies have begun to elaborate how intonation and the devices it supports (such as rhythm, prosody, and mood) interact with semantic processing.

In this essay, I draw out both the promises and the pitfalls of such natural-scientific approaches and argue for the importance of developing a *poetic* account of intonation, using the poetry and poetological essays of the contemporary German poet Durs Grünbein as a paradigmatic example. I show that a poetic account of the tensions internal to the conceptual field of intonation itself can draw on the resources of figurative language, paradox, and resistance that are central to poetic thinking, thereby highlighting aspects and effects of intonational features scientific accounts may elide or smooth over. Moreover, these poetic accounts of the physiological effectiveness of poetry, especially in intonation and prosody, have a long history only sometimes acknowledged by empirical practitioners. Grünbein positions himself self-consciously in this tradition as he develops an account of poetic efficacy based on the interaction of mental images, timing, and embodiment that is both in line with and offers the means for a critique of recent work on the effects of aesthetic experience in general and intonation or prosody in particular. In addition to its thematic role in Grünbein's poetological thought, intonation also stands synecdochically for a productive tension that Grünbein stages repeatedly in his poetry and in his essays: namely, the complex interrelation between scientific and poetic thought. The illumination offered by this type of figurative connection is, I want to suggest, a specific example of the resources of a poetic mode of thinking about features like intonation, resources that are (appropriately) prohibited in empirical-scientific argumentation.

As I elaborate, Grünbein's work both claims and demonstrates the immense potential inherent in empirical-scientific attention to the minutest levels of linguistic and bodily material. At the same time, Grünbein foregrounds the ambivalence of the scientific gaze: driven by the methodological imperative to reconcile conflicting evidence and subsume particulars to a hypothesis, empirical approaches risk reducing material particulars to a theoretical chain of deductive steps. These interactions between poetry and the body, mind and brain, scientific and poetic tradition appear in Grünbein's essays (emphasized by titles like 'My Babylonish Brain' and 'Darwin's Eyes') and are taken up in and staged by many of his poems (which both repeat language from and are quoted in his essays). I discuss a poem that persistently and explicitly stages the interaction between these components and

its own historical situation: his ‘Ode to the Diencephalon. After W. H. Auden after A. T. W. Simeons’. In naming its genre (not all odes identify themselves as such in their title) in the same breath as brain anatomy, and in describing itself as coming *after* a poet (Auden) and a popular scientist (Simeons), the title already foregrounds the complex interaction between the poetic and the empirical in their historicity, of which I argue the tensions inherent to intonation are a paradigmatic example.

I. Intonation: Empirical Explanations of What, Where, and How

Most current empirical approaches treat intonation as it is defined in linguistics and subsequently expand into considerations of how and where in the brain intonation is processed, how it developed, what purposes it might serve, and how it interacts with other brain functions, especially those related to language. Treating these approaches in some detail will both provide tools for the analysis of poetry (here, Grünbein’s) and highlight some of the reductions I use Grünbein to critique. Intonation in linguistics refers to ‘variation in pitch across an utterance’, which is used in non-tonal languages such as English and German to convey moods such as ‘surprise, irony, and questioning’;¹ ‘at the simplest level’, intonation ‘is the rise and fall of the pitch of the voice in spoken language’.² As such, it is related not only to tone or mood but also to prominence, in terms of both lexical and sentence stress. Given that higher pitch typically designates stress and that intonation is a crucial component in grouping sentence- or phrase-level elements together, intonation plays a role in determining both prosody and semantic content:³ ‘today we

¹ Intonation is thus at least partially distinct from ‘tone’, understood as ‘variation in pitch that makes a difference in the meanings of words’ in tonal languages such as Mandarin and Vietnamese. Kristin Denham and Anne Lobeck, *Linguistics for Everyone*, 2nd edn. (Boston: Wadsworth, 2013), p. 130 and p. 90, respectively.

² Natalie Gerber, ‘Intonation and the Conventions of Free Verse’, *Style*, 49.1 (2015), pp. 8-34 (p. 10).

³ Denham and Lobeck, p. 127. They add that ‘Stress and intonation can interact at the sentence level; word-level stress patterns and pitch can be modified to indicate which part of the sentence is in focus or which word should receive special emphasis’ (p. 130). Further, ‘intonation is a typical means of overarticulating syllable and word boundaries’. Reuven Tsur, *Poetic Rhythm. Structure and Performance. An Empirical Study in Cognitive Poetics* (Brighton: Sussex Academic Press, 2012), p. 10.

understand intonation to be an integral part of the prosodic organization of a language, that is, the audible chunking of language into discrete units from the prosodic word and phonological phrase, at the lower levels, to the intonational phrase and the utterance, at the higher levels'.⁴ Most contemporary models of intonation seek to register both changing pitch and the way in which intonation participates in breaking language into (sub-sentence level) phrases and marking the boundaries between them.⁵

While intonation is not, of course, equivalent to or identical with prosody, its role in creating prosodic distinctions highlights the interrelations and tensions between materiality, structure, and semantics inherent in the phenomenon of intonation. Prosody is itself a term with complex meanings in linguistics and poetics; in standard English usage, the term has shifted from denoting the study of versification, especially as influenced by Greek and Latin metrics, to referring 'collectively to the linguistic patterning of pitch, loudness, timing (including pauses) and voice quality, in other words, to speech patterns which operate above the level of the phoneme'.⁶ Nor do these uses refer to entirely distinct phenomena: Gerber and others have argued that intonation's role in creating boundaries between and stresses within units of discourse can play a crucial role in the structuring and organization of poetic language.⁷ Given evidence that prosodic cues (here in the linguistic sense, meaning cues such as variation in pitch) serve as 'a source of information in speech that aids lexical recognition', it is also possible to compare the effects of prosody in speech with the effects of similar cues on memory of

⁴ Gerber, 'Intonation and the Conventions of Free Verse', p. 11.

⁵ See Anne Wichmann, *Intonation in Text and Discourse. Beginnings, Middles and Ends* (New York: Pearson Education, 2000), p. 12.

⁶ Wichmann, p. 8.

⁷ See Gerber's argument that 'phonological components of language can be made into a coherent measure'. Natalie Gerber, 'Getting the "Squiggly Tunes Down" on the Page: Williams's Triadic-Line Verse and American Intonation', in *Rigor of Beauty. Essays in Commemoration of William Carlos Williams*, ed. Ian D. Copestake (Bern: Peter Lang, 2004), pp. 221-253 (p. 221). See also James Longenbach's account of the interaction between intonation, syntax, and lineation as poetically productive (James Longenbach, *The Resistance to Poetry*. Chicago: University of Chicago Press, 2004, p. 18).

musical sequences as part of efforts to understand where and how in the brain intonation and prosody are processed.⁸ Several studies have found that memory encodes acoustic features such as intonation together with the ‘lexical content’ of speech (ibid.). Subsequent experiments support the idea that not only structural features (in music) and lexical content (in language) but also specific acoustic features are incorporated in episodic memory: listeners can identify or respond to musical performances with familiar acoustic features analogous to prosodic cues in language (p. 526). The similar importance of prosodic cues for episodic memory in both musical and lexical sequences suggests a substantial overlap between music and language processing (ibid.). In an article that explicitly considers ‘the sounds of poetry [...] as music’, composer and music theorist Fred Lerdahl seeks to identify precisely which features are shared and which distinct between the two domains: ‘The picture emerges that grouping, meter, duration, contour, and timbral structure are mind/brain systems shared by music and language, whereas linguistic syntax and semantics and musical pitch relations are systems not shared by the two domains.’⁹ Of course, both syntax and semantics interact with and are supported by intonational groupings, perhaps in ways analogous to those in which the relation between pitches in music (e.g. the relation between the tonic and the dominant) contributes to musical structure.¹⁰ Lerdahl’s categories of ‘grouping’, ‘meter’, and ‘contour’ are precisely those in which intonation plays a central role; intonation thus appears as the ground on which music and language meet in their material and structural aspects.

Many accounts, like Lerdahl’s, offer evolutionary explanations of the close connection between the two art forms, suggesting that both have their ‘roots’ in ‘the form of premusical and prelinguistic expressive auditory gestures’ based on the

⁸ Caroline Palmer, Melissa K. Jungers, and Peter W. Jusczyk, ‘Episodic Memory for Musical Prosody’, *Journal of Memory and Language*, 45 (2001), pp. 526-545 (p. 527).

⁹ Fred Lerdahl, ‘The sounds of poetry viewed as music’, *Annals of the New York Academy of Sciences*, 930 (2001), pp. 337-354 (p. 337).

¹⁰ In her discussion of intonation, Wichmann repeatedly draws comparisons between language and music, describing intonational phrasing, for example, as ‘the way in which all but the shortest utterances are divided into smaller “phrases,” rather like phrasing in music’ (Wichmann, p. 12).

shared features enumerated above.¹¹ These accounts frequently draw connections between ontogenesis and phylogenesis, noting, for example, that we still use the expressive aural/oral gestures afforded by intonation to communicate with ‘infants and higher mammals’, while adult humans have undergone a development parallel to the course of the species’ evolution toward increased separation of forms of communication and of art and toward mode-specific articulation within each.¹² David S. Miall and Ellen Dissanayake—a literary scholar interested in neuro-aesthetics and a founder of evolutionary aesthetics, respectively—follow this argument into a detailed examination of what they call ‘the poetics of babytalk’, including such intonationally supported features as ‘changes and exaggerations of amplitude’, ‘heavy stresses or accents’, and clearly defined ‘temporal structure’, all contributing to a ‘verse pattern’ in which ‘each topic [...] is primarily a resource for effects at the level of sound—i.e. the intonation, rhythm, and phonetic color afforded by the words and phrases of a given topic’.¹³ (In their theory, intonational color and its affective connotations are the goal of the utterances, given that the eight-week-old infant toward whom the mother directs her speech in their experiment cannot understand semantic content.) Miall and Dissanayake point out that ‘the ability to respond to poetic features of language is present as early as the first few weeks of life’ and suggest that ‘this ability attunes cognitive and affective capacities in ways that provide a foundation for the skills at work in later aesthetic production and response’;¹⁴ that is, the poetic features that are adaptive for mother/baby bonding ground or even enable the temporal arts of music and

¹¹ Lerdahl, p. 353.

¹² Lerdahl, p. 353.

¹³ David S. Miall and Ellen Dissanayake, ‘The Poetics of Babytalk’, *Human Nature*, 14.4 (2003), pp. 337-364 (pp. 343-4). Miall and Dissanayake even claim that ‘high, front phonemes connote intimacy or presence in contrast to back phonemes which, being pronounced in the rear oral cavity or the throat, connote distance’, although they admit that this pattern is ‘often violated in adult literary productions’ (p. 348). The idea that ‘phonetic contrasts appear to have the function [...] of setting up systematic differences in tonality that underline particular semantic contrasts, according to the local context’ (p. 349) is much more plausible.

¹⁴ Miall and Dissanayake, p. 337.

‘literary language’.¹⁵ As Miall and Dissanayake’s detailed analysis of babytalk shows, the features of communication that may be adaptive are precisely those enabled by expressive resources of intonation. It should be noted, however, that their account remains speculative, since it is based on a study of only one mother/infant pair from one culture and links what counts as affective bonding for the twentieth century unhesitatingly to the development of the species.¹⁶

Accounts on the phylogenetic level proceed along remarkably similar lines, as they consider the cognitive underpinnings required for the development of language and by extension for poetics.¹⁷ Babytalk’s phylogenetic counterpart is thus, per Christopher Collins, a ‘pre-language’, defined as the ‘minimal level of communication that a highly social, tool-making, hunting/gathering genus of primates would require’, including ‘expressive vocalization’ as well as iconic gestures (p. 107). Pre-language developed into a ‘protolanguage’, i.e. a ‘symbolic code of syntax-less speech composed of clearly articulated phonemes that many assume to have been a transitional phase between pre-language and full language’ (ibid.). Crucially, both such protolanguage and the full language (comprising both lexicon and syntax) that evolved from it maintain pre-linguistic features as a kind of ‘paralanguage’ that can be used to convey affect and nuance. Language does not entirely eliminate older forms of communication; in particular, former ‘unintentional vocal indices’ of emotion or other expressions became a ‘vocal paralanguage of controlled, intentional prosodic features’ (p. 139). Such para-linguistic features ‘have become embedded in the medium of literature and to a special degree in poetry, providing it with its traditionally recognized structures’

¹⁵ Miall and Dissanayake, p. 338.

¹⁶ That modes of affective bonding are historically and culturally conditioned is an insight often suppressed in evolutionary accounts; for a treatment of the constellations from which one particular kind of affective relation emerged and its encoding in and of poetic features, see Friedrich Kittler, *Dichter – Mutter – Kind. Deutsche Literatur im Familiensystem 1760-1820* (Munich: Wilhelm Fink, 1991), especially the essay ‘Lullaby of Birdland (Wandrer’s Nachtlied)’ (pp. 19-45).

¹⁷ See e.g. Christopher Collins, who rejects the idea that particular narrative themes (e.g. courtship) explain the evolutionary function of literature and turns instead to ‘various cognitive skills essential to verbal art’. Christopher Collins, *Paleopoetics. The Evolution of the Pre-Literate Imagination* (New York: Columbia University Press, 2013), p. 19.

such as prosodic structure, phoneme repetition, and pitch contour (appearing in poetry as rhyme, meter, and expressive tone).¹⁸ Like Miall and Dissanayake, Collins attributes pleasurable effects to the phonological level of poetic speech: here, prosody has the power to reawaken our phylogenetic past and with it a sense of wonder at the powers of language.¹⁹

There is much to be said for both the ontogenetic and the phylogenetic narratives about prosody and thus the intonation that supports it: such accounts assign poetic speech—by virtue of its material components—an important function in the development both of the species and of the individual, tying it not only to the species-defining development of language but to the successful and expressive functioning of that language in the contemporary world. There are, however, also good reasons to be cautious. To begin with, not only the connection between ontogenetic and phylogenetic levels but also the step between phonological cues and poetry may not be as short as evolutionary or cognitive accounts make it appear: even given the aesthetic efficacy of verse and granting for the sake of argument the adaptive functions of the visual arts, music, and narrative, it seems likely that verse itself—the aesthetic arena most determined by prosody—does not meet the biological standard for being an adaptation.²⁰ Furthermore, it remains unclear to what extent and in what particular ways prosodic cues work in tandem with syntactic and semantic elements of language. Any account in which the former support or enhance the latter must acknowledge and attempt to work out the conflict between the long history of such claims and mounting neuropsychological and neurophysiological evidence that syntactic, semantic, prosodic, and musical

¹⁸ *ibid.*, p. 107. This is not to say that such ‘paralinguistic’ features do not likewise contribute to syntax and semantic grouping, as the work of Wichmann and others shows.

¹⁹ Collins, p. 151. He points out that these phonological aspects are not absent in ordinary speech (p. 200).

²⁰ Brian Boyd, *Why Lyrics Last. Evolution, Cognition, and Shakespeare’s Sonnets* (Cambridge: Harvard University Press, 2012), pp. 11-14. As Steven Pinker argues, ‘To demonstrate that X is an adaptation, one can’t simply show that people like doing X, or that good things happen when people do X. [...] Instead, one has to show—independently of anything we know about the human behavior in question—that X, by its intrinsic design, is capable of causing a reproduction-enhancing outcome in an environment like the one in which humans evolved.’ Steven Pinker, ‘Toward a Consilient Study of Literature’, *Philosophy and Literature*, 31 (2007), pp. 162-178 (p. 170).

sensory input are processed differently and/or separately.²¹ Denham and Lobeck point to

evidence that the intonational contours and patterns are stored in a distinct part of the brain from the rest of language. When someone experiences brain damage to the left side of the brain that seriously affects their linguistic abilities, making them unable to produce fluent or grammatical speech, they often maintain the appropriate intonation patterns of their language. When right-hemisphere damage takes place, the result may be that the patient speaks in a monotone.²²

Moreover, measurements of brain activity show different reactions to semantically unexpected and metrically unexpected, words.²³ This neuro-physiological data supports hypotheses of the modularity of the mind, which posit that different brain areas are responsible for different functions and that more global behavior arises only from their interaction. Neurologist Ernst Pöppel thus connects the ability to speak to separate lexical, syntactic, semantic, phonetic, and prosodic competencies, whose interaction remains opaque even as the individual functions are located in the brain with increasing precision.²⁴

A precise account of the functions of intonation, of its evolution, of its processing's physiological location, and of how it interacts with other sensory or semantic input, then, remains a desideratum. Moreover, conflicts within the fields of such empirical approaches—over the modularity of the mind, over the adaptiveness of the arts, over how neurophysiological and neuroanatomical data

²¹ On music and language in particular, see e.g. Aniruddh D. Patel, Isabelle Peretz, Mark Tramo, and Raymonde Labreque, 'Processing Prosodic and Musical Patterns: A Neuropsychological Investigation', *Brain and Language*, 61 (1998), pp. 123-144 (p. 124).

²² Denham and Lobeck, p. 130.

²³ K. Rothermich, M. Schmidt-Kassow, and S.A. Kotz, 'Rhythm's gonna get you: regular meter facilitates semantic sentence processing', *Neuropsychologia*, 50 (2012), pp. 232-244 (p. 232). In general, Rothermich et al. argue, per their title, that familiar meter assists semantic or lexical processing, but they also found significantly different results for semantically unexpected and metrically unexpected words (p. 241). They thus separate metrical and lexical processing: 'we propose that the 'metric' negativity [in the ERP result] is not language-specific, but rather, reflects a general error detection mechanism' (p. 242).

²⁴ See e.g. Ernst Pöppel, 'Kosmos im Kopf: Wie das Gehirn funktioniert', in *Gehirn und Denken: Kosmos im Kopf*, ed. by Lisa Vieth and Brigitte Hirner (Ostfildern Ruit: Hatje Cantz Verlag, 2000), pp. 20-27 (p. 24).

ought to be interpreted—suggest that such an account may not be forthcoming, however promising the beginnings. I contend, by contrast, that the ability to treat conflicts and contradictions as productive rather than problematic is precisely what poetic accounts of intonation and prosody have to offer empirical accounts—in exchange, as it were, for phonological precision, cognitive insights, and evolutionary significance. In turning to the poetry and poetics of Durs Grünbein, I am thus entering an argument for the claims of efficacy poetry makes for itself in addition to and sometimes against those claims made for it by the various empirical approaches outlined above. In addition to the higher degree of tension claimed by—and, as I shall show, productive to—poetic thinking, I want to draw out the power of its disciplinarily sanctioned attention and openness to singularity, contingency, and metaphoricity.²⁵

II. Staging productive conflict: Durs Grünbein's Poetics of Resistance

Durs Grünbein, born in Dresden in 1962, is something of a unique phenomenon in the German literary scene: his poetry has been considered both as representative of the German lyric in the decades after reunification and as a revivification of the European tradition, as both post-modern and traditional to the point of conservatism, as simultaneously provocative and mannered.²⁶ In what follows, I argue that Grünbein elaborates a physiological poetics of mental imagery that both chimes with and grounds a critique of a scientific-materialist view of poetry and subjectivity. This critique, moreover, stages a productive conflict between a scientific-materialist view and a more classically humanist-metaphysical conception of the poetic subject. In connecting intonation, *pars pro toto*, with this conflict, I hope both to elaborate the productive tensions in Grünbein's own work—precluding a

²⁵ All of these attributes contribute to what Longenbach, in terms I would endorse, describes as the resistance of and to poetry (Longenbach, p. xi and pp. 2-4).

²⁶ There is, of course, some difficulty in discussing German-language literary works using contexts overwhelmingly shaped by examinations of English. German and English are, however, historically and typologically very similar, making the use of models for intonation and prosody in English largely appropriate for German (See Dafydd Gibbon, 'Intonation in German', in *Intonation Systems. A Survey of Twenty Languages*, ed. by Daniel Hirst and Albert Di Cristo [Cambridge: Cambridge University Press, 1998], pp. 78-95 [p. 94]).

linear narrative of his poetics as moving from the physiological to the metaphysical—and to use those tensions and conflicts to add nuance to empirical accounts of the interactions between material and meaning, phonology and rhetoric, that, I argued above, such accounts seek overhastily to resolve.²⁷

Grünbein's essays on poetry and poetics do not make him an intuitive choice for an analysis of intonation or prosody; despite writing frequently in regular meters, he only rarely discusses devices such as rhyme, meter, intonation, or alliteration. Indeed, he purports not to possess in any great degree the 'unconditional musicality' he counts, along with a 'gift for/of observation' and a sense for the transience and historical absurdity of human meaning constructions, as the attributes of a poet.²⁸ He is, however, acutely aware of the presence and efficacy of such musicality in other poets and writers; describing Nietzsche, for example, as knowing 'all there was to know—since Goethe and Schopenhauer, Hölderlin, Kleist, and Heine—about the style, syntax, rhythm, and tempo of linguistic expression'.²⁹ This knowledge includes a facility with intonation, which Grünbein glosses as 'the spontaneous, lyrical agility in the medium of language'.³⁰ Elsewhere, the corporeal connotations of poetic movement become even more explicit, as Grünbein describes Rainer Maria Rilke's poetry as 'choreography' and rhyme as 'a piece of time rendered comprehensible'³¹ (the German is 'ein Stück begreifbar gemachter, fasslicher Zeit', where both 'begreifbar' and 'fasslich' share root words with the

²⁷ For a narrative of Grünbein's career as beginning with preeminence of materialist-empirical thought in his earlier texts, which is replaced by a humanist-metaphysical strain in his more recent work, see e.g. Thomas Irmer, 'Durs Grünbein', in *Deutschsprachige Lyriker des 20. Jahrhunderts*, ed. by Ursula Heukenkamp and Peter Geist (Berlin: Erich Schmidt, 2007), pp. 711-21. I suggest that Grünbein's work is more productively considered in terms of conflicting, even paradoxical, positions worked through in a remarkably condensed manner, often within a single essay or poem.

²⁸ 'unbedingte Musikalität, 'Beobachtungsgabe'. Durs Grünbein, 'Salzburger Rede', pp. 15-22 in *Antike Dispositionen. Aufsätze* (Frankfurt: Suhrkamp, 2005), p. 17.

²⁹ Grünbein, 'The Thinker's Voice', in Durs Grünbein, *The Bars of Atlantis. Selected Essays*, ed. Michael Eskin (New York: Farrar, Straus and Giroux, 2010), pp. 228-245 (p. 230).

³⁰ Grünbein, 'The Thinker's Voice', p. 230.

³¹ Grünbein, 'A Little Blue Girl', in *The Bars of Atlantis*, pp. 209-227 (p. 224).

verbs for physical grasping or gripping, *greifen* and *fassen*—terms that will be used to describe the brain’s relation to itself and the world in ‘Ode to the Diencephalon’).³²

Shifting in the Nietzsche essay from a consideration of Nietzsche’s style (or ‘voice’), to a general discussion or even definition of poetry, Grünbein gives an answer to the question ‘But what is poetry?’ that joins formal features with lexical attention, canonical themes, and the temporal persistence of poetry:

If one were to ask me: [poetry is] the concentration on what is essential, perception according to rhythm and measure, the working out of vivid and in some cases drastic details, the word set upon the gold scale. However banal it may often appear, poetry is a variation on the invariables: life, love, time, space, and death. The verse turns back to the beginning, it maintains the connection to the universals of language and thought (and this alone suffices to explain its temporal resistance).³³

Although Grünbein does not refer to intonation, he joins what will be one of his central tasks for poetry—careful observation or perception—with features supported by intonation, namely ‘rhythm and measure’. Moreover, he hints at a robust view of lineation and its effects, playing on the etymology of ‘verse’ as ‘turn’ to describe poetic lines as turning back to the beginning (of what he does not say) and thus maintaining a connection to the universals of language and thinking that combine with material *resistance* to enable poetry’s temporal *persistence*.

Grünbein joins poetry, temporality, and intonational features, in particular prosody, most intensively in an essay comparing poetry and music:

In poetry, [as in music], intervals (here understood as the distance between successively sounding syllables) determine the relationship to time. As time—infinite, manifold, and sweeping—increasingly inundates the individual, what can the poem do but break it down into endless moments? Time cannot be grasped or negotiated with, but it can be given accents. If its measure cannot be taken, it can at least be translated into our measure. And few measures, discounting the measurements of physics, are better designed for such work than the measures

³² Grünbein, ‘Ein kleines blaues Mädchen’, in *Gedicht und Geheimnis. Aufsätze 1990-2006* (Suhrkamp: Frankfurt a.M., 2007) pp. 135-154 (p. 151).

³³ Grünbein, ‘The Thinker’s Voice’, pp. 238-239.

of verse. They provide us with the modest norm that we, as individuals aware of our finitude, can hold up to the supreme measures of time. Allowing ourselves to be guided by the modulations of our voice and vouchsafing our entire spiritual existence to it, we transform time into a transparent fabric of stressed and unstressed moments.³⁴

Accent and grouping—features shaped by intonation, as shown above—serve in poetry to differentiate and organize the endless flow or rush of transient time. Moreover, poetry links the individual in her finitude—crucially, embodied finitude—to what reaches beyond or outside it, in the ‘supreme measure of time’. Grünbein asserts that prosody transforms time by dividing it into a measure that fits the human body.

The primary tool of poetry for resisting time, in Grünbein’s view, is the juxtaposition of startling or surprising images, whose efficacy he grounds in the body, specifically the brain. Considering the same kind of event-related potential (i.e. brain electricity) measurements used in several of the studies I cited above, he points out the increase in the ‘N400 factor’, a brain electricity reaction that responds to language stimuli, between the phrases ‘the cat catches the mouse’ and ‘the cat catches the moon’.³⁵ This factor becomes a measurement for effective poetry: ‘The further and more unexpected the jump [over lexical divides], the greater the N400 factor in a line or in a sequence of syllables, the more spacious are verse or prose’.³⁶ This spaciousness between distant domains or fields of association is responsible for the effects of poetry. In his explanation of the reasons for the effectiveness of lines with a large N400 measurement, Grünbein introduces the idea of resistance as crucial to the efficacy of poetry as well as to its production. In normal speech, the resistance created by the unexpected appearance of ‘moon’ in ‘the cat catches the

³⁴ Grünbein, ‘Accented Time’, in *The Bars of Atlantis*, pp. 116-131 (p. 126).

³⁵ Durs Grünbein, ‘Katze und Mond’, in Durs Grünbein, *Galilei vermisst Dantes Hölle und bleibt an den Maßen hängen. Aufsätze 1989-1995* (Frankfurt: Suhrkamp, 1996), pp. 55-60 (p. 57). All translations from this essay are mine. The N400 is in fact the measurement Rothermich et al. identify as reacting to semantic irregularities. The components “N” and “400” refer to the polarity and time in milliseconds after the stimulus, respectively.

³⁶ ‘Je weiter und unerwarteter diese Sprung, je größer also der *Faktor N 400* in einer Zeile oder in einer Silbenfolge, um so geräumiger sind Vers oder Prosa.’ Grünbein, ‘Katze und Mond’, p. 57.

moon' is quickly overcome by laughter; in literary speech, however, such resistance is evidence for the immense potential of poetry to join the most distant associations and thus create a further resistance to the overwhelming flow of sensory impressions and everyday speech.³⁷ Such brain-influencing speech 'cut[s] [the poet] off from all other speech, which is just a tide of banality, instantly forgettable'.³⁸ Moreover, these associations are fundamentally individual and idiosyncratic: Grünbein describes the reader of a poem as primarily 'aware of [...] the beaming idiosyncrasy of someone who can see things only one way', and thus 'confronting the idiotic, the solitary prejudice [...] with which a poet dives into his imaginary world'.³⁹

Paradoxically, the unexpectedness of these images and associations, which derives from their individual idiosyncrasy, enables their inscription in memory and thus their persistence past the finitude of the individual:

By its way of imposing hindrances in its chronological unspooling, whether through metrical barriers or semantic distances, the poem safeguards its own duration as much in the memory of those born later as in the unique experience stock of its contemporary reader. A poem's resistance to time is determined by how resolutely it opposes conventional reality (of physics, logic, the phenomenal world).⁴⁰

And in discussing the poem's strategies for resisting time Grünbein turns to the material level of language. He describes 'memory's best ally' 'in its effort to oppose the mere passage of time, to pause in the wastes of information', as 'the red thread of the disject line, metrically scanned'.⁴¹ In an argument that echoes cognitive accounts of fit between poetry and the brain, Grünbein asserts that 'it would appear

³⁷ Grünbein, 'Katze und Mond', in *The Bars of Atlantis*, pp. 59-71 (pp. 58-59).

³⁸ Grünbein, 'My Babylonish Brain', trans. Michael Hofmann, pp. 59-71 in *The Bars of Atlantis. Selected Essays*, ed. by Michael Eskin (New York: Farrar, Straus and Giroux, 2010). p. 61.

³⁹ Grünbein, 'My Babylonish Brain', p. 59.

⁴⁰ Grünbein, 'My Babylonish Brain', p. 66.

⁴¹ Grünbein, 'My Babylonish Brain', p. 62.

that in terms of mnemonics no other mode of utterance is so adapted to human eccentricity and the associative breadth of experience'.⁴²

Contra the cognitive universalism of such arguments, however, Grünbein repeatedly and insistently yokes the transhistorical nature of memory to individual physiology. Moreover, he asserts that prosody, in particular, mediates between individual and species: 'From the very beginning, poetry was a function of memory, and it is its prosodic character that creates the link between the the individual voice coming out of a mortal body and the narratives of the species standing over the waters and moving through cities and landscapes'.⁴³ The individual voice creates the prosodic features that activate or harmonize with species-wide neural architecture, which in turn helps extend the memory of the individual's poetic production past its echoings in an individual brain. In his listing of the 'elements' with which 'lyrical speech generates a present beyond death and this side of chronological time',⁴⁴ Grünbein lists prosodic and intonational elements of poetry together with what is perhaps his central poetological category, imagery: 'Images, words, tone [*die Intonation*], and meter' help the poem as it 'penetrates the nethermost spaces of memory', and, in a further materialization, 'becomes a chunk of embodied time'.⁴⁵ Time embodied—time *in* the body—is the product of poetry, which creates and foregrounds moments of imagistic intensity or presentness within the meaningless tick-tock of merely successive everyday time and speech. Indeed, the word 'chunk' (perhaps an example of Grünbein's rhetorical anti-pathos) not only underscores the materialization of time in poetry but also, in referring to a chunk of *time*, grants imagery as well as prosody a bodily-rhythmic, time-organizing force that increases in proportion to the intensity of the imagery in question.

In keeping with this attention to imagistic intensity, Grünbein appeals to the canonical topos of *Anschaulichkeit* (vividness or liveliness, but based on the verb for

⁴² Grünbein, 'My Babylonish Brain', p. 62. For a neuroscientific account of this fit, see Frederick Turner and Ernst Pöppel, 'The Neural Lyre: Poetic Meter, the Brain, and Time', *Poetry*, 142.5 (1983), pp. 277-309.

⁴³ Grünbein, 'My Babylonish Brain', p. 62.

⁴⁴ Grünbein, 'My Babylonish Brain', p. 62.

⁴⁵ Grünbein, 'My Babylonish Brain', p. 65.

‘to look at’, *anschauen*) as ‘primary quality of all true poetry and literature’.⁴⁶ Grünbein links vision and vividness both with poetic production and with a particular kind of scientific gaze possessed by ‘great natural scientists like Darwin’.⁴⁷ The achievement of such scientific thought is that it ‘never distances itself too far from the eidetic’, developing ‘primordial and detail-rich systems’ that do not elide but are based on the sensorially perceived particulars in their material liveliness.⁴⁸ Given Grünbein’s longstanding interest in neuroscience and the interaction between poetry and the brain, it is appropriate that his account of imagery as being the ground of poetic expressiveness and as having crucial effects in the brain can be confirmed, at least to some extent, by recent studies in neuroaesthetics. G. Gabrielle Starr makes the case for understanding imagery as a central component of aesthetic experience, pointing to ‘evidence [that] supports the claim that the arts can indeed evoke imagery across the senses, that this imagery employs the neural machinery of everyday perception with a difference, that imagery involves the networks for introspection, and that imagery is a key to aesthetic pleasures’.⁴⁹ For Starr, a ‘key feature’ of aesthetic experience is that ‘it may juxtapose thoughts and sensations that had been far, far distant’, which are ‘felt as strange beauty, shock, pleasure, outrage, or even irritated disbelief’⁵⁰—language strikingly reminiscent of Grünbein’s account of aesthetic efficacy as enabled by the juxtaposition of unexpected images or words.

Moreover, Starr’s work offers a way of understanding imagery as working in tandem with or even supporting features such as prosody and intonation, in ways that can help make sense of Grünbein’s baffling nonchalance in reading together words, images, sounds, and brain traces through much of his poetological work.

⁴⁶ Grünbein, ‘The Poem and Its Secret’ in *The Bars of Atlantis*, pp. 82-91 (p. 87).

⁴⁷ ‘Analytisch[e] Sehkraft’, ‘die großen Naturforscher wie Darwin’ (Grünbein, ‘Galilei vermißt...’, p. 103).

⁴⁸ ‘Denken, das sich nie allzuweit vom Bildhaften entfernt hat, das immerfort Stammbäume entwirft, naturwüchsige und detailreiche Ordnungen’ (Grünbein, ‘Galilei vermißt...’, p. 103). ‘Bildhaft’, which I have translated as ‘eidetic’, also means both vivid and metaphorical.

⁴⁹ G. Gabrielle Starr, *Feeling Beauty. The Neuroscience of Aesthetic Experience* (Cambridge, MA: MIT Press, 2013), p. 10.

⁵⁰ Starr, p. 19.

Imagery, Starr argues, consists not only of static pictures, but is a multi-sensory phenomenon involving imagined movement, whether of the eye through scenes or of musical or poetic meter felt in the body, which she calls ‘imagery of motion’.⁵¹ Through the idea of motion, she joins imagery and prosody: ‘metrical writing can evoke not only auditory imagery but the imagery of motion; as we time the words we ‘hear’, motor centers of the brain, including the cerebellum, are also active, perhaps in helping us catch the beat, and what enables the timing of action also enables us to understand and produce metrical speech’.⁵² Starr’s account, then, suggests a neurophysiological basis for understanding Grünbein’s physiological and imagistic poetics in terms of temporality that bring together his diffuse remarks about the prosodic structuring of time in verse and his persistent focus on imagery and embodiment.

But there are good reasons not to subsume Grünbein’s poetics too quickly to the neurosciences, not the least among them that Grünbein himself is critical of scientific thought in what he describes as a ‘golden age of reductions’.⁵³ Grünbein mounts his sharpest critique of scientific reductionism in an essay titled ‘Galileo Measures Dante’s Hell and Gets Hung Up on the Measurements’, in which he identifies Galileo’s 1587 lecture on the physical location and constitution of the underworld in Dante’s *Inferno* as the moment at which the paths of science and art began to diverge, ‘the one linearly uniform, the other side-stepping, in spirals and ellipses’.⁵⁴ In language that is itself imagistic (an extension of the metaphor of

⁵¹ Starr, p. 82.

⁵² Starr, p. 89.

⁵³ ‘Das Goldene Zeitalter der Reduktionen’ (Grünbein, ‘Galilei vermißt...’, p. 100). In addition, it is not always clear how Starr’s compelling historical and critical analyses of texts and aesthetic experiences relate to the neuroscientific data she cites; some of her argumentation seems entirely convincing without requiring any reference to neuroscience at all, while at other moments the hypotheses she draws seem a long way from being supported by the data she and her colleagues have collected, as for example when she asserts that ‘Motor imagery is, I believe, a better paradigmatic case for imagery than is visual imagery: the mind’s body is more encompassing than the mind’s eye’ and goes on to cite the existence of mirror neurons as evidence (Starr, p. 82).

⁵⁴ ‘Von nun an laufen die Wege der Naturwissenschaften und der Künste beschleunigt auseinander, geradlinig gleichförmig die einen, Haken schlagend und in Spiralen und Ellipsen die andren.’ Durs Grünbein, ‘Galilei vermißt Dantes Hölle und bleibt an den Maßen hängen’, in

history as ‘path’), Grünbein diagnoses scientific thought as forbidding the kind of visual or image-based thinking he connected with embodied, rhythmic temporality and poetic efficacy. He characterizes the division between the two paths as one between ‘primary and secondary sensory qualities’, between ‘poetic imagination and scientific abstraction’, which creates two worlds, one ‘abstract’ or ‘theoretical’, the other ‘purely aesthetic’.⁵⁵ Grünbein describes the division in terms of the stages of Galileo’s biography, asking first ‘where did this demand for a ruthless *a priori*, which caused him to look down on all multiplicity and every particularity [...], come from?’⁵⁶ and then describing the progress of this kind of ruthless thought: ‘with every one of his steps thought and vividness divide’, and ‘at every curve things and their images retreat further’.⁵⁷ Evidence for these divisions comes from Galileo’s experiments, in which the behavior of material bodies is reduced to a grid of systematic movement: ‘the body becomes a sphere, the sphere an ideal point’.⁵⁸ Perhaps most tellingly, Galileo’s famous experiment, involving the dropping of two differently-weighted spheres joined by a string from the leaning tower of Pisa, needed only to have been a thought experiment; the historical scene and its material props dissolve into abstract thought.⁵⁹ For Grünbein, ‘the current operations of science’ have paid for their increased knowledge with a sacrifice of vividness and visuality: ‘the high cost of the expansion of knowledge, of advancing deep into the

Galilei vermisst Dantes Hölle und bleibt an den Maßen hängen, pp. 89-104 (p. 91). All translations from this essay are mine.

⁵⁵ ‘Zwischen primären und sekundären Sinnesqualitäten’, ‘dichterische Imagination und naturwissenschaftliche Abstraktion’; he describes the two worlds as the ‘Welt des Unanschaulichen’ (world of the abstract) and a ‘Parallelwelt des rein Ästhetischen’ (parallel world of the purely aesthetic). Grünbein, ‘Galilei vermisst...’, p. 91. Although ‘unanschaulich’ means theoretical or abstract, it is derived from the verb *anschauen*—to view or examine—with the negative prefix ‘un-’; ‘anschaulich’ refers not to what is visible but to what is *vivid*, lively, and present to the senses.

⁵⁶ ‘Woher dieses Verlangen nach einem rücksichtslosen *a priori*, das ihn auf alle Vielfalt und jede Besonderheit herabsehen ließ [...]?’ (Grünbein, ‘Galilei vermisst...’, p. 93).

⁵⁷ ‘Mit jedem seiner Schritte trennen sich Denken und Anschaulichkeit’; ‘An jeder Biegung treten die Dinge und ihre Abbilder weiter zurück’ (Grünbein, ‘Galilei vermisst...’, p. 93).

⁵⁸ ‘Aus einem Körper wird eine Kugel, aus der Kugel der ideale Punkt’ (Grünbein, ‘Galilei vermisst...’, p. 93).

⁵⁹ Grünbein, ‘Galilei vermisst...’, p. 93-94.

smallest cellular structures, goes hand in hand with the crisis of representation'.⁶⁰ Scientific progress, then, requires the sacrifice of the very vivid imagery (or *Anschaulichkeit*) Grünbein understands as the essential quality of poetry, one he locates firmly in the material, finite body within the expanses of time structured and thus resisted by prosody, rhyme, intonation, and tune.

In confronting Grünbein's account of poetic thinking with the empirical accounts of intonation at the intersection of materiality and rhetoric I considered above, I want to use the productive conflicts within Grünbein's work to think through the interaction of empirical and poetic thought, phonology and rhetoric, neuroscience and aesthetic tradition that intonation so insistently foregrounds. As a final step in the thinking through of these conflicts, I turn to a reading of Grünbein's poem 'Ode to the Diencephalon', where these dichotomies are held open by the tension, metaphoricity, and singularity enabled—in Grünbein's view, called for—by the lyric.

III. Science, Poetry, Tradition: 'Ode to the Diencephalon'

Grünbein's 'Ode to the Diencephalon' immediately raises questions of the relation between scientific thought and poetic tradition, material brain and poetic subject—the conflicts I claim intonation represents synechdochially. The diencephalon, also called the interbrain, is the second-deepest level of the brain, containing the thalamus, hypothalamus, and basal ganglia; it is responsible for controlling behavior and attention and also plays a participatory role in processes related to language and symbolic cognition.⁶¹ In its subtitle, the poem highlights the relation of poetic and scientific tradition further: 'after W.H. Auden after A.T.W. Simeons' echoes W.H. Auden's 'Ode to the Diencephalon (after A.T.W. Simeons)'. Auden's ode refers to and takes up topics from Simeons' popular-scientific text, *Man's Presumptuous Brain: An Evolutionary Interpretation of Psychosomatic Disease*, which argues (among other things) that the brain stem has failed to keep pace with the evolution of the cerebral

⁶⁰ Grünbein, 'Darwin's Eyes', in *The Bars of Atlantis*, pp. 47-55 (p. 54).

⁶¹ Hinrich Ahrend, 'Tanz zwischen sämtlichen Stühlen.' *Poetik und Dichtung im lyrischen und essayistischen Werk Durs Grünbeins*, (Würzburg: Königshausen und Neumann, 2010), p. 172.

cortex:⁶² in response to the complex dangers of the contemporary world, the diencephalon reacts with ‘bolting or cringing’, ‘gooseflesh, the palpitations, the squitters’.⁶³ While Auden draws a political point from the regressive habits of the diencephalon,⁶⁴ Grünbein stages a version of the paradox of neuroscience and neurophilosophy: the fact that the brain has only itself as a tool to examine itself becomes a dialogue between an observing brain and an ‘I’ that observes its observation.⁶⁵ Like Auden, Grünbein uses the Sapphic ode form, although Auden introduces variation in the last line of each strophe and maintains a strict twelve syllables in the first three while Grünbein uses variable numbers of syllables in the first three lines and maintains a strict adonic (/ - - / -) in the fourth line of each strophe.⁶⁶ Grünbein’s laconic, often colloquial diction conflicts with the ode genre’s history as a high or pathos-laden genre; although Grünbein is hardly the first to challenge that history, the challenge in this particular ode participates in the conflict portrayed in the poem between the material, fleshy brain and the subjectivity that comments on it, a conflict that moves not closer to but further from resolution across the poem’s four strophes. (Because the ode has not been translated into English as of this writing, I give a prose translation/paraphrase, with alternative translations in parentheses.)

*Ode an das Diencephalon*⁶⁷

(Nach W.H. Auden nach A.T.W. Simeons) —

Hier also hältst du, Black Box, dich versteckt. So was
Von Präzision, in sich verstrickt, muß sich rächen.

⁶² Stefanie Stockhorst, ‘Ästhetisierung der Anatomie. Medizinische und literarische Referenzräume in Durs Grünbeins “Schädelbasislektion”’, in *Schreiben am Schnittpunkt. Poesie und Wissen bei Durs Grünbein*, ed. by Kai Bremer, Fabian Lampert, and Jörg Wesche, pp. 191-212 (pp. 198- 99).

⁶³ W.H. Auden, ‘Ode to the Diencephalon’, in *Collected Poems*, ed. by Edward Mendelson (London: Random House, 1976), p. 878.

⁶⁴ ‘When you could really help us, you don’t. If only, | whenever the trumpet cries men to battle, | you would flash to their muscles the urgent order | *ACUTE LUMBAGO!*’ (Auden, ‘Ode to the Diencephalon’, p. 878).

⁶⁵ Ahrend, p. 175.

⁶⁶ Stockhorst, p. 201.

⁶⁷ *Durs Grünbein. Gedichte. Bücher I-III* (Frankfurt: Suhrkamp, 2006), p. 223.

Lange warst du ungreifbar, nun bist du dir selbst
Häßlich der Nächste. [4]

Klinisch entblößt, auf Karten verzeichnet, ein Magazin
Heißer Drähte von Zentrum zum Kleinen Zeh,
Eingeklemmt zwischen Logos und feeling...fragt sich
Wer hält hier wen fest? [8]

Nichts von dem was sich im Neuronalen Netz fing
War dir wirklich Ernst. Selten stand mehr im Programm
Als Betrug, psychische Tricks oder Schlüsse wie dieses
Cogito ergo... [12]

Alles im Griff, Flugkörper, Sprachen und Religionen,
Hast du nur eins unterschätzt, dieses Ich. Besser
Es läge noch immer vor seinem Schlag aus der Art
Glücklich im Koma. [16]

*[Ode to the Diencephalon.
(After W.H. Auden after A.T.W. Simeons)*

So, black box, here you keep yourself hidden. This kind of precision, tangled up in itself, must have its consequences (must avenge itself). For a long time you were ungraspable; now you are, ugly, your own neighbor (a neighbor to yourself, next to yourself).

Clinically exposed, noted down on charts, a magazine of hot wires from the center to the little toe, hemmed in between Logos and feeling...the question arises: who's holding on to whom, here?

You weren't serious about any of what got itself caught in the neuronal net. Rarely was there more on the agenda than deception, psychological tricks or conclusions like this Cogito ergo...

Everything under control (in your grip), projectiles (flying bodies), languages, and religions—you only underestimated one thing, this I. It would be better if it still lay, before its departure from type, happily in a coma.]

Given my English-language discussion of a metrical German-language poem, before continuing I note the overwhelming similarities and minor differences in German and English intonational structures. First, 'unlike languages such as English, with [...] relatively fixed word order, in German word order is a major

focalisation device, used for topicalisation and for making new information in utterances'.⁶⁸ For this reason, word order in German can (and, in Grünbein's poem, does) play an expressive role in emphasizing certain words and can also facilitate the (here, loose) adherence to the ode meter. Second,

spoken German has many quasi-parenthetical discourse particles, such as the modal particles *ja* (yes; as we both well know), *doch* (yes on the contrary; as you well know), *wohl* (presumably), *also* (thus) and focus particles like *sogar*, *auch* (even) whose functions are to convey kinds of information which may be characteristic of intonation in other languages, such as 'obviousness', 'imputed shared presumption', or 'contradiction' (ibid.).

These differences have led some linguists to claim that 'in German, modal particles such as *doch*, *wohl*, *ja* play similar roles to certain intonation tunes in English, which does not have such a wide range of particles and particle combinations, while German does not have such a wide range of intonation patterns as English'.⁶⁹ And indeed, Grünbein uses *also* ('thus' or 'so') in the first line, both giving the ode a colloquial tone and perhaps imitating forms of logical argumentation. Finally, and of interest here given Grünbein's use of lineation in lieu of or to counteract punctuation, 'comma punctuation in German is determined by grammar, and does not correlate as closely with intonation as in English'. (p. 94)

The poem opens with a reference not to modern neuroscience but to a different scientific tradition: the 'black box' brain model of behaviorist psychology (notably, itself a metaphor), according to which only stimulus and behavior can be observed, while the mental processes between them remain invisible (or 'ungreifbar'/ungraspable, 3) in the black box of the brain.⁷⁰ (Grünbein's use of the word 'ungreifbar' makes the brain's self-comprehension a physical-material process—'ungreifbar' shares a root with the verb *greifen*, to seize or grasp, and *begreifen*, to understand.) In the second line, the speaker seems to discard this model,

⁶⁸ Gibbon, p. 81.

⁶⁹ Gibbon adds 'this claim has a *prima facie* plausibility, but it has not been extensively or systematically investigated' (Gibbon, p. 94).

⁷⁰ Stockhorst, p. 202.

since the poem describes ‘precision’, perhaps of the mapping of brain functions onto brain regions in localization theories of brain function.⁷¹ The dative ‘du [...] dir selbst’ (you...to yourself) of the third line splits the brain within itself, moving it from the subject to its own object.⁷² This objectification is in keeping with the ‘clinical’ exposure (line 5) of the second strophe, which describes the nervous system of the body with the technological metaphor of wiring, after which the register shifts to the metaphysical as the speaker describes the object as ‘hemmed in between Logos and feeling’ (line 7) and poses the question of the primacy between mind/subject and brain/material: ‘Who’s holding on to whom, here?’ (line 8). The conflict between speaker (subject?) and brain remains unresolved, as the tone becomes accusatory in the third strophe: the brain (or the diencephalon) wasn’t really serious about any of the mental phenomena; it’s all a matter of neuronal networks; everything else is deception, not least the foundations of modern philosophical subjectivity and epistemology in the Cartesian cogito (here with its ‘being’ cut off while ‘thinking’ remains). But in the third strophe the poem pivots once again: while the brain seems to have the systems of physics, language, and religion under control (‘im Griff,’ or in its grasp, echoing and reversing the ‘ungreifbar’ of line 3), it has underestimated the subject, ‘this I’ (line 14). The fifteenth line, however, describes subjectivity as a ‘departure from type’, almost a *degeneration* of the species in the evolutionary process; it remains unclear whether it would be ‘better’ specifically for the diencephalon if the brain had evolved without an ‘I’, or better in general (perhaps for that ‘I’ as well).⁷³

‘Ode to the Diencephalon’ does not initially seem to exhibit particularly significant phonological or intonational features. Alliteration, assonance, and consonance appear in several lines—‘Black Box’ (line 1), ‘Klinisch [...] Karten’ (line 5, clinically [...] charts), ‘Nichts [...] Neuronalen Netz’ (line 9, nothing [...] neuronal net), ‘psychische Tricks’ (line 11, psychological tricks), “Besser / Es” (lines

⁷¹ For a full account of the project of mapping brain functions and the quandaries it entails, see Olaf Breidbach, *Die Materialisierung des Ichs. Zur Geschichte der Hirnforschung im 19. und 20. Jahrhundert*, (Frankfurt a. M.: Suhrkamp, 1996).

⁷² Ahrend, p. 173.

⁷³ Ahrend takes the first position (p. 174), Stockhorst the second (p. 203).

14-5, better | it)—perhaps linguistic examples of the ‘timbral structure’ and (in the repeated short vowel sounds) ‘duration’ Lerdahl identified as shared features between language and music. Compared to a meter like iambic pentameter, ode form does not produce particularly striking rhythmic repetitions, although in Grünbein’s rendering, occasional series of three-syllable feet, as in ‘SELten stand MEHR im proGRAMM’ (line 10), ‘PSYCHische TRICKS oder SCHLÜsse’ (line 11), and ‘HAST du nur EINS unterSCHÄTZT, dieses ICH’ (line 14), lend a lightness to the lines and group the words with a common meter together. The exception to this fairly irregular meter is the adonic of the final line of each strophe: perhaps due to the myth of its origin in the lament of Aphrodite for Adonis,⁷⁴ perhaps because of its brevity, with the final unstressed syllable falling away after the stressed fourth syllable, the sequence underscores the ‘pathetic’ tone appropriate to ode poetry in generally and the Sapphic ode in particular.

Grünbein also uses enjambment as a kind of quasi-punctuation, as in the implicit colon after ‘fragt sich / Wer hält hier wen fest?’ (lines 7-8, the question arises: who’s holding on to whom, here?), or quotation marks, as in ‘dieses / Cogito ergo...’ (lines 11-12, this | *cogito ergo...*). This effect rests on the prosodic grouping capabilities of intonation as they interact with lineation: readers are accustomed to clauses achieving a resting place at the end of a line, even if punctuation does not actually occur or a sentence end and even if they do not pause between lines in reading aloud.⁷⁵ Elsewhere, enjambments that line up neither with (implicit) punctuation nor syntax breaks create a sense of conflict between semantic content and metrical form, as when the sentence ‘So was von Präzision [...] muß sich rächen.’ is interrupted after only two words by a line break: ‘So was / Von Präzision’ (lines 2-3, This kind / Of precision...). This effect also occurs before the other two adonic lines in the poem, ‘nun bist du dir selbst/ Häßlich der Nächste’ (lines 3-4) and ‘vor seinem Schlag aus der Art / Glücklich im Koma’ (lines 15-16). The

⁷⁴ See Page DuBois, *Sappho is Burning* (Chicago: University of Chicago Press, 1995), p. 185.

⁷⁵ See Gerber for a more detailed account of this effect; Gerber explains that line endings often coincide with ‘neutral tonality’, which occurs when an ‘intonational phrase [a group or chunk of words] and clause coincide’, as opposed to ‘marked tonality’, ‘where intonation and syntax diverge’ (Gerber, ‘Intonation Systems of Free Verse’, p. 12).

overrunning of lines by clauses, often with highly inverted syntax, thus creates a kind of emphasis or stress that highlights the particularity of each word—perhaps an example of the kind of resistance Grünbein attributes to meter and to poetry more generally. Intonation participates in the conflict between sound and syntax that slows the reader down, focusing attention on individual words and sounds.

Grünbein uses the material metre of the adonic in particular and the ode in general to create the kind of subjective pathos the poem's content and some of his poetological remarks seem to undercut. Because the poem's material form takes up the metaphysical, humanist tradition, while its semantic content expresses the materialist view, the poem is a vivid expression of the double bind in which post-modern subjectivity finds itself, as the conflict between poetic tradition and brain science announced in the poem's title extends from the semantic to the smallest material level. In holding this conflict open, the poem resists empirical-scientific reduction, insisting on the perplexities of its material presence caught between subject and object, mind and brain, material and meaning. 'Ode to the Diencephalon', then, offers a poetic account of the kind of confrontation between these poles that is all too easily discarded in the search for scientific accounts.

What Grünbein's poetry and poetology reveal about intonation, I want to suggest, is that it is as influenced by tradition as by biology, that intonational features may disrupt, not support semantic processing, and that poetry may be maladaptive in its ability to highlight that there may be no resolution between our self-understanding as self-conscious, rational subjects and as material-physical beings. 'Ode to the Diencephalon' insists that this tension is one to be expressed and held open, not explained away or smoothed over as empirical accounts demand by virtue of their disciplinary practices. As my first section elaborated, the study of intonation brings out not only agreement but significant conflicts between phonology, neurophysiology, or evolutionary biology. What Grünbein's poetic account of intonation suggests, however, is that the conflicts between and within these fields are themselves productive for a poetics that challenges reductionism and celebrates the resistance of material particularity.