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THE SOUND OF MEANING, AND THE MEANING OF SOUND

Phonetic Iconicity in Literature

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Introduction: "Understanding" vs. "Experiencing" Poetry

Before we start discussing our approach and some examples of our research, we wish to briefly reflect on the nature and use of the term "cognitive poetics"[1]. The word "cognitive," used in a strict sense, refers to a mental act by which knowledge or understanding is acquired through thinking, observing, analyzing, and the like. Applied to literature, the term would then mean to "understand" literary texts (poetry, stories, or theater pieces) by way of such analytical skills. But – we ask ourselves – is that enough? Are literary texts there "to be understood"? No doubt. In a certain sense we wish to intellectually grasp what is there on the page or on the stage. But is that all? Take a theater performance: does the audience just want to "understand"? Obviously not. Often individual spectators may already *know* the play and its plot; they may have seen it several times before, so there is nothing to "grasp" from a cognitive point of view. They will instead come for the naked *experience* of watching. And there may be ripples of excitement swelling through the rows of chairs. Is this "cognitive"? Not really. It is emotional; it is physical ("embodied," to use the cognitive terminology); it is social. The so-called 4E notion is already in itself an admission that the notion of cognition needs to be extended (see Gallagher). The same is true if you go to a gathering where poets are reading – or performing – their poetry (for more on oral/silent poetry reading, see van Peer and Chesnokova, "The Sound").

We need to acknowledge here, though, that we understand the notion of "embodied" differently from what is implied by cognitive poetics. Cognitive scholars, in line with the 4E approaches to cognition, argue that readers conceptualize mental processes as being connected to a body (thus "embodied"), but they are still in the mind, conceptual, while we explicitly focus on physical, affective, and social manifestations of poetic experiences. Cognitive poetics may be a first step to analyze these, but it is not sufficient. It does not even touch on the core experiences that people seek in their encounters with literature, art, or music.

While the examples above show another kind of involvement, different from merely "understanding," similar feelings may erupt also while *reading* in the stillness of one's room. Who does not know the shivers that may come while reading a gripping story or tears of grief while following a tragic plot development? Would we say that gooseflesh erupting while reading a passage is a way of "understanding"? Readers will attest to a whole range of bodily experiences that seem quite outside the range of mere cognition. Thus, while acknowledging that knowledge

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and understanding play an important role in literary reading, it is undeniable that there is much more at stake: physical sensations, often of a powerful nature, besides feelings of affiliation with other people.[2] Thus, literature transcends the mere meaning of words on a page – and it certainly is of a more powerful kind than plain knowledge when it happens socially, as, for instance, during a recitation. It rather creates the opportunity to live a particular kind of *experience*. Such experiences exceed those of simple comprehension. One could even argue that this is precisely where literary texts differ from newspaper articles or biology textbooks, in that they do things *beyond* cognition. That is why we argue for a different, or at least a complementary, approach – to the study of poetry in particular, but also of literature in general, namely, to study the *full* range of psychological and social experiences that literature offers – what we have called *psychopoetics* (van Peer and Chesnokova, *Experiencing Poetry*).

There is, however, a second sense in which the term "cognitive" is used when it comes to the study of literature. It is not so much the "understanding" that readers or spectators develop, but rather the study of these readerly comprehension processes. When looked upon from this vantage point, the affective reactions described above might well fall within the scope of cognitive poetics. It is then not people involved with literature who are looking for knowledge, but we, academics, who are trying to understand what goes on when readers confront literary texts or performances. This seems to us a completely legitimate enterprise, in the same way that psychologists may attempt to fathom people's motivations, attitudes, or even irrational behavior. Having said this, however, cognitive poetics runs into a fundamental shortcoming, which concerns a pertinent question: *how* are we going to understand these non-cognitive reactions of readers? Here the cognitive approach, we are afraid, collides with its own limitations. In order to understand such typically literary excitement, cognitive poetics will need to have recourse to descriptive strategies and explanatory models from other fields of investigation. For instance, to understand why readers may be so overwhelmed by a text that they will weep, one needs an appeal to *emotion* theory.

Theories of cognition are simply not able to elucidate such largely non-cognitive behavior. It is here that cognitive poetics reveals its own impediments: we have scores of investigations revealing how readers come to terms with meanings, but we have hardly any that lay bare the processes that lead to such physical and emotional reactions, nor the social involvement that literary texts may set in motion. The internet is overflowing with testimonials by readers whose lives have been totally changed by reading a literary work; on sites like Goodreads, one finds thousands of such avowals. In short, cognitive poetics can be a useful starting point, but it needs to acknowledge its limitations and develop complementary approaches – something we are advocating in this chapter. It especially has to open itself to the non-cognitive effects of texts, one of which is due to sound itself.

Sound in Poetry: From Textual Analysis to Experiments

There are several linguistic levels that are at work in the functioning of any language. The first one is phonetic: our vocal system produces sounds, which, in order to become meaningful, are arranged in a specific way. Thus, the second level, grammatical, refers to the grouping of sounds (in morphology and syntax), while the third level, semantic, relates to the meaning produced, as long as the grouping follows the rules of the (individual) language. Finally, there are also rules for behavior in language matters, which is the level of pragmatics.

Before carrying on, we need to clarify a terminological issue because terms are often used rather loosely. Auracher et al. attempt to resolve the issue, pointing out that "*sound iconicity*, also known as *phonosemantics*, *sound symbolism*, *linguistic iconism*, or *phonological iconicity*,

refers to relations between sound and meaning of linguistic signs" (2). For purely pragmatic reasons, in this chapter we have opted for the use of "phonetic" as a cover term referring to all such iconic relations.

Orthodox linguistic theory (following Saussure) says that there is no intrinsic relation between sound and meaning. That is why a particular animal is called "horse" in one language, "Pferd" in another, and "caballo" in yet another one. The relationship of the sounds to the animal is arbitrary. Recent investigations into this relation, however, have cast doubt over its universality. On the contrary, some recent research has thrown light on apparently non-arbitrary connections between sound and meaning, at least in some domains of language use, such as literature, especially in poetry. To begin with, in poetic texts there are ~~the~~ numerous cases of rhyme, alliteration, assonance, or meter – in short, all forms of phonetic patterning that are virtually absent from other forms of language use. Additionally, such parallelism forms a network that intertwines the sounds and meanings of the verses so that readers focus their attention on certain sound-meaning interrelationships. Here, the ingredients of a psychological effect are activated: the two are woven together in such a way that they appeal to our feelings, even if readers do not consciously notice the effect produced. The expectation subliminally built up by the sound form makes certain elements stand out, which construct some (partly subconscious) kind of meaning during the reading experience.

Earlier attempts to come to terms with such forms of iconicity are Fónagy, Fischer, and Whissell. For an overview, see Nuckolls. These studies are more exploratory and cannot really be said to be experimental in nature. Miall, by contrast, tested a hypothesis in one of the first efforts to submit it to a falsification effort. Wiseman and van Peer, in a similar vein, used an experimental approach in which participants were to choose particular sounds in as far as they were felt to evoke specific emotions. A strikingly high degree of agreement between Brazilian and German readers was found, in that grief is better expressed by open vowels (/a:/, /o:/, and /u:/) and nasal consonants (/m/ and /n/), while joy correspondingly was associated with closed vowels (/i:/ and /e:/) and plosives (/b/, /t/, /p/, and /d/). Surprisingly, these relations were also corroborated with respect to old Egyptian Pharaonic texts by Albers: these two groups of sounds clearly differentiated hymns (presumably expressing joy) from elegies (most likely evoking grief). Over the past decades, a series of studies have followed this path to establish patterns of sound-meaning connections in an evidence-based program. Overviews of this work are to be found in Lockwood and Dingemanse, Perniss, Thompson, and Vigliocco; Schmidtke, Conrad, and Jacobs; Svantesson.

The concept of such a sound-meaning relation is not, however, without critique. Thus, for instance, Tsur and Gafni criticize the approach because of "a welter of conflicting findings" ("Methodological Issues" 197), an assessment they have further developed in their *Sound-Emotion Interaction* book (20). It is somewhat ironic that the authors use the term "methodological" in their title, because it is precisely their methodology that is at the heart of the critical reviews of their article, aptly demonstrated by both Auracher and Aryani.

One of the most solid studies of the sound-meaning relation in poetry is perhaps the study by Auracher et al. ("P is for Happiness"), for the following reasons. First of all, the phonetic characteristics of the poems were taken as the independent variable, which (if the assumption about sound-meaning is correct) should "predict the assessment of the emotional tone as the dependent variable" (Auracher 235). Since such a prediction carries a serious risk (namely, that it is not borne out by the data), the study entails a genuine falsification effort in the Popperian sense. Secondly, the study was carried out in four different, partly unrelated languages, or three language groups, namely Chinese, German, Russian, and Ukrainian. What they found was that poems with an extremely high ratio of plosives compared to nasals were systematically

rated higher on items carrying a positive valence and referring to a high level of activation (for instance, "Enthusiasm"), while the opposite was the case for poems with a high ratio of nasals compared to plosives, and these results were – and this is the third reason for their importance – statistically significant, meaning that the probability that these occurred by pure chance is lower than 5%.

Promising as this looked, a problem arose when Kraxenberger and Menninghaus tried to replicate the above findings. They selected 48 poems from a corpus of German poems for their emotional tone and subsequently inspected the phonetic make-up of these texts. The results were disappointing in that they found no statistically significant relation between the poems' emotional stance and the relative occurrence of plosives versus nasals. The authors conclude that the "study does not confirm the hypothesis of a non-arbitrary link between particular phoneme inventories and emotion perception in poetry reading" (7). Hence, it would seem that the results of the first study could not be replicated. Given that replication is at the heart of the scientific enterprise, this casts some doubt on the conclusions of Auracher et al. However, on reflection, the study by Kraxenberger and Menninghaus is not a true replication. In the original experiment, the phonetic make-up of the poems was used to predict their emotional impact. Kraxenberger and Menninghaus, however, did the exact opposite: they used the emotional tone of poems to predict their phonetic make-up. Auracher therefore specifies that "the relation between the ratio of plosives vs. nasals and the expressed emotional tone of a poem is *unidirectional*" (236; our emphasis). As is well-known, all penguins are birds, but not all birds are penguins. To put it in logical terms, the phonetic structure of a poem is a sufficient but not a necessary condition for its emotional response. The conclusion must be that the work by Auracher et al. is as yet the most persuasive study we have for the reality of phonetic iconicity. In order to illustrate the power of an evidence-based approach to the study of iconicity, we will present the results of two investigations showing the benefits and the value of an empirical stance, but also its boundaries.

Are Sounds Meaningful on Their Own? Two Experiment Outlines

Study 1

This brings us to a personal example of one of the authors of this chapter (see also van Peer and Chesnokova, *Experiencing Poetry* 111–13). When still at school at the age of 17, he, together with his classmates, heard a recording of a poem in a language they did not understand at that time. The rational assumption would be that, once one of the levels we mentioned earlier in this chapter (namely semantic) was not at play, such a recital would not produce an effect on the boys. But clearly poetry is not about the rational. The group of teenagers was completely overwhelmed with the sound of what later turned out to be the beginning of Dante Alighieri's *Divine Comedy* – written some 700 years ago to that. The magic of Dante's language (and its sound in the first place) was so strong that one of us even started learning parts of the poem by heart so that later, in moments of hardship, he could come back to them as some kind of magic spell. But yet again – at the first encounter, those were just sounds, albeit arranged in a certain way.

So, how important are phonetic arrangements in poetry, and how much do they contribute to the *experience* of poetry? How much do we know about it? To cast light on the issue, we will now report the design and the major findings of a study that was triggered by the hypothesis that relates to the idea that sound in poetry is a powerful tool in itself. More specifically, we looked at parallelism,[3] assuming that its effect is not necessarily connected to the meaning – thus coming back to the initial debate in this chapter about "understanding" and "experiencing."

The experiment was conducted in a conventional academic setting during an (offline) lecture of one of the authors of this chapter. The sample included 45 participants: BA and MA students majoring in English Philology or Translation, but also several PhD students and staff members (almost exclusively female, mean age = 23.6). In line with the multiculturalism and historical approach of psychopoetics, the research material we opted for was a poem marked with clear parallelism written in a language the respondents were not familiar with (like in the Dante example above) – several thousand years ago to that. It was in Sumerian and constituted a fragment from the *Epic of Gilgamesh*. Below is the passage along with its English translation (Jones [as qtd. in Ribeiro]; see van Peer and Chesnokova, *Experiencing Poetry* 136 for a textual analysis):

Ud ri a ud su du ri a	In those days, in those distant days,
Gig ri a gig bad du ri a	In those nights, in those far-off nights,
Mu ri a mu su du ri a	In those years, in those distant years. . .

As we were interested in participants' spontaneous reactions that would not be influenced by any background knowledge about the poem, we did not reveal any information about the text. Nor did we present them with the translation. It may be safely excluded that any participant would understand Sumerian, so they could not have had access to the semantics of the poem.

For experimental purposes, we manipulated the poem, removing all forms of parallelism, as we wanted to verify whether the readers would be able to extract meaning from the (linguistically incomprehensible) parallelistic text, compared to their reading the rewritten text, which no longer contained the original parallelistic features. In this way we could "trap" the superimposed meaning of the sound form. The manipulated version is presented below. As one can see, the general monosyllabic rhythm of the poem is preserved while the repeated "ri a" (second and third syllables of each line), "su du ri a" (final elements in lines 1 and 3), and "du ri a" (final element in line 2) are now gone.

Ud di a ad ma du ri a
Gig ru u gig bad da gi u
Mu gu i mi su bu ma i

The research tool used was a questionnaire, specifically designed for the purpose of this study, in which participants were offered to read the poem (either in the original or in the manipulated form) and evaluate it on a 7-point Likert scale, plus answer a number of questions pertaining to the meaning of the text. The questionnaires were prepared in Ukrainian (L1 or L2 of the respondents) to ensure that all participants clearly understood the tasks. The poem was presented in the Latin script.

Participants of the experiment were randomly allocated to either of two conditions. Group 1 (N =22) read the poem in the original while Group 2 (N = 23) read the text in the manipulated form. In the introductory part of the questionnaire, respondents indicated their gender, age, and university major. In the main part, they answered the questions about the poem's beauty, the message of the text, etc. We also had participants indicate whether the text they saw could be part of a hymn, a pop song, an instruction manual, a newspaper, a novel, etc. Apart from this, if the hypothesis of iconicity holds, then readers must be able to guess at some semantic aspects, even in a language they do not understand. Accordingly, they assessed (on the same 7-point scale) whether they found the poem striking, interesting to discuss with classmates, containing

important things to communicate, whether they would recommend it to a friend, whether they considered it to be an example of good literature, and whether it made them see things in a new light. Space for additional comments was also provided. At the end of the questionnaire, participants gave their formal consent to participate in the experiment. The questionnaire sample can be found in the Appendix.

Results indicate that, although the meaning of the poem was, quite predictably, lost on the audience, the sound of it appeared to be meaningful on its own: about half of the participants' answers and comments attributed religious implications to the text, which was more evident in Group 1 that read the original. Respondents from Group 2, having read the manipulated version with the parallelistic phonetic shape altered, predominantly claimed that the poem for them was quite meaningless.

We then examined whether the answers of both groups differed. To this end, we employed a statistical test, a one-way ANOVA. It did not reveal significant differences between responses by the two groups. The term "significant" is used here in a technical sense: in statistical analyses, it means that one can generalize any observed differences with a confidence margin of 95% or more, the conventional break-off point. The reason why the differences between the two groups are not "significant" in this sense may lie in the limited number of participants or in the marginal differences in responses. At the same time, however, participants from Group 1 evaluated the (original) poem as more beautiful (3.8 against 3.2 on a scale of 7), more striking (2.9 against 2.4), of higher quality (3.1 against 2.8), communicating more important things (3.5 against 2.7), and making people see things in a new light more (2.2 against 1.6). Thus, we do see the (albeit marginal) evidence of the power of iconicity, as the evaluations are higher for the original version, marked by ample parallelism. We thus witness in readers' responses that even in the absence of any semantic ingredients per se, the parallelism is indeed able to create extra meaning.

Study 2

In another experiment, we turned to a completely different poem – written in English, a language participants were fluent in – and a Modernist, twentieth-century text, namely "anyone lived in a pretty how town" by E. E. Cummings. The poem is famous for its numerous and radical linguistic deviations (for the evidence of their effect on the reader, see Chesnokova and van Peer), but also for the intricate sound form, namely parallelism at various levels (for a full analysis, see van Peer and Chesnokova, *Experiencing Poetry* 59). For experimental purposes, similarly to the procedure of Study 1, we removed, as much as we could, the parallelistic elements from the text.

The first thing to eliminate was Cummings's recurrent repetitions of natural phenomena names ("sun moon stars rain") as well as seasons' enumerations (for example, "autumn winter spring summer") that may create the feeling of monotonous continuity of life in the "pretty how town." Next, we deleted the monosyllabic parallelistic constructions of the following type: "more by more," "side by side," or "little by little." Finally, we deprived the text of its rhyme – again to the point of preserving the poetic shape, albeit altered. Below is the third stanza of the original poem next to the manipulated version we used.

children guessed (but only a few	Children guessed (but only some
and down they forgot as up they grew	And down they forgot as they grew up
autumn winter spring summer)	Wind cold flowers and heat)
that noone loved him more by more	That noone loved him more forever.

A qualitative analysis shows that respondents were indeed sensitive to the manipulation as, when invited to comment on the altered text, they noticed, among other things, that the poem was "a bit confusing," that it "need[ed] time," or even that "something was wrong with it."

This manipulated version was read by 70 participants (65 female; mean age = 23), while the original poem was read by a control group of 71 participants (67 female; mean age = 21). We assumed that, though the respondents were non-native speakers of English, their educational and professional background would ensure unproblematic understanding of Cummings's language as well as the emotional implications of the poem. We asked participants to indicate their reactions, again, on a 7-point Likert scale, but this time on a battery of 30 adjectives: six dimensions, represented by five adjectives each (aesthetic appreciation, aesthetic structure, cognition, emotion, social context, and attitudes. The scales were taken from van Peer, Zyngier, and Hakemulder). The reactions were provided at three locations: after line 1; after the 6th stanza (middle); and after the whole poem. The questionnaire sample can be found in van Peer and Chesnokova (*Experiencing Poetry* 217–21).

An ANOVA test for the six dimensions yielded a statistically significant difference for two of them: aesthetic structure (AS) and emotive (EM) as demonstrated in Figure 36.1.

As can be seen from the graph, the differences between the reactions of the two groups were, similarly to the findings in Study 1, in the expected direction. Readers proved to be sensitive to the sound form of the poem and evaluated the version from which parallelism was removed lower: it, on average, scored, on a scale of 7, 3.92 for aesthetic structure (p = .011) and 2.65 for the emotive dimension (p = .028) as compared to 4.07 and 2.91, respectively, for the original.
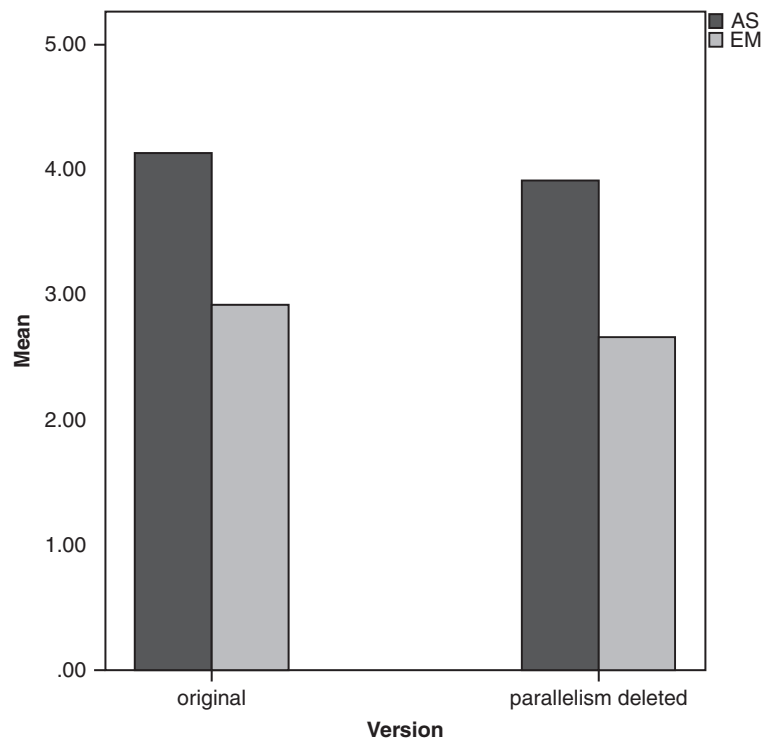

Figure 36.1 Mean results for variables "aesthetic structure" and "emotive" in the original and manipulated texts.

The effect is relatively modest, we must admit, but we should put it in perspective: the reported research implied only a short reading experiment of a highly complex text with massive deviations that were certainly difficult to process and interpret. But even then, it is clear that there is an effect of the sound structure on the perceived meaning, and that for two of the six dimensions, the effect is statistically significant, meaning that one may confidently generalize it to other (similar) groups of readers.

We additionally ran a factor analysis – a statistical technique used to reduce a large number of observations to a smaller number of underlying variables. This yielded two factors (which we labeled "emotion" and "meaning"), revealing significant differences in the response to the two versions of the poem. For the visualization, see Figure 36.2.

The graph clearly demonstrates that the original version, containing abundant parallelism, evoked higher emotional involvement in the readers (p = .001) as well as more meaningful reading (p = .008). The numbers of p-values indicate the probability that this difference was caused by chance, i.e., accidentally. A p-value of .001 means that this probability is one in thousand! Thus, we again conclude that the phonetic shape of the poem was of influence in readers' experience: it enhanced both emotionality and meaningfulness of response.

Conclusion

In this chapter, we have pleaded for an enrichment of cognitive poetics, which will otherwise remain sparse. We believe the time has come for self-reflection and self-critique so that the discipline can further develop its aims and methods. Cognition is but one of the many aspects
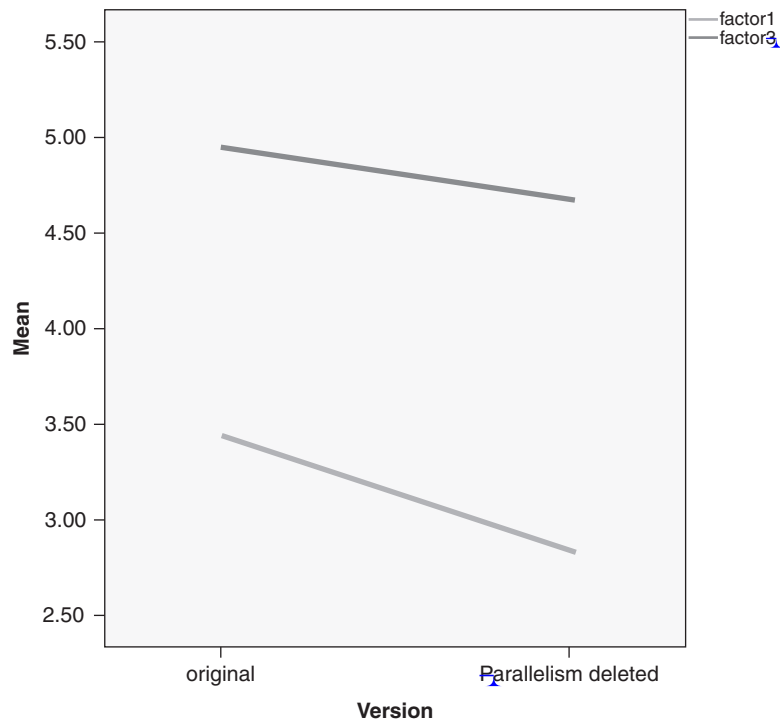

Figure 36.2   Mean results for readers' reactions to original and manipulated texts: "emotion" (Factor 1) and "meaning" (Factor 3).

of literature, and for most people, not even the most important one. One such non-cognitive ingredient has been highlighted in this chapter, i.e., the non-arbitrary sound-meaning relationship. It was shown that especially in poetic texts, but maybe also in literary texts in general, this relation acquires a special potency in readers' experience. The empirical data we collected and analyzed, moreover, show this relation to be of a generalizable kind. The line of research we advocate secures cognitive progress, which most other approaches do not possess. Cognitive poetics should not avoid evidence-based methods.

Acknowledgments

Appendix: Questionnaire Sample

Responding to a Text

This questionnaire will be used in an empirical research held by Borys Grinchenko Kyiv University. Your participation is vital to the successful outcome of the investigation. There are no right or wrong answers to the questions below. You might need about 15 minutes to answer them. This is an anonymous questionnaire, so your identity will be preserved.

We *thank* you for your collaboration.

1 Gender
  ( ) Male
  ( ) Female

2 Age _____
3 Major _____

Please read the following text. We realize that it is written in a language you are not familiar with.

> Ud ri a ud su du ri a
> Gig ri a gig bad du ri a
> Mu ri a mu su du ri a

1 How beautiful do you find the text?

  1 2 3 4 5 6 7

2 What do you think it is about?

  _____

3 Would you like to read more works of the author?

  1 2 3 4 5 6 7

4 Could the text you see be from
  ( ) a warning
  ( ) a hymn
  ( ) an advertisement
  ( ) an instruction manual
  ( ) a spell
  ( ) a traffic sign
  ( ) a newspaper article
  ( ) a recipe
  ( ) a novel
  ( ) a song?

 Tick everything that applies.
 If you ticked a song, then what is the music genre? _____

5 Now tell us how much you agree with the following statements. "1" means that you do not agree with it, and "7" that you fully agree.

  I find the text very striking.

  1 2 3 4 5 6 7

  This is an interesting text to discuss with pupils in class.

  1 2 3 4 5 6 7

  The text has important things to communicate.

  1 2 3 4 5 6 7

  I would recommend this poem to good friend.

  1 2 3 4 5 6 7

  This is a good example of high quality literature.

  1 2 3 4 5 6 7

  The text made me see things in a new light.

  1 2 3 4 5 6 7

  Place for additional comments:

_____
_____

  I hereby give my consent to participate in this experiment _____.

Signature
THANKS AGAIN FOR YOUR PARTICIPATION!

Notes

 1 We do not aim at a complete list of sources here, because they are numerous. See, for example, Semino and Culpeper; Gavins and Steen; Tsur; Brône and Vandaele; Burke and Troscianko; Freeman; and Stockwell. We are grateful to Jan Alber and Ralf Schneider for widening the scope of the approach through the present companion.
 2 For a similar argument on the limitations (and perhaps also the shortcomings) of cognitive poetics, see the illuminating article by Gibbs and Colston.

3 In this chapter, we define parallelism as "a form of foregrounding characterized by repetitive struc-
   tures, at various levels: lexical (e.g., chain repetition), syntactic (e.g., anaphora, chiasmus), or phono-
   logical (e.g., rhyme, assonance, alliteration)" (van Peer and Chesnokova, *Experiencing Poetry* 212).

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