LEARNERS' APPROACHES TO POETIC METAPHOR: A THINK ALOUD STUDY WITH SECONDARY SCHOOL STUDENTS IN GRADE 6 AND 9

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Abstract

This article investigates the challenges of understanding poetic metaphor for lower secondary students. It draws on a think aloud study that was carried out with 69 students from Grade 6 (mean age 12) and 9 (mean age 15) in Germany (higher academic track and middle schools) who thought aloud on three different poems. A coding system was developed deductively and inductively and applied to the protocols. Also, a procedure of global assessment was applied on the basis of the codings. For selected cases a sequential analysis was carried out. The results were analysed with regard to levels of understanding and to the strategies students apply when approaching the metaphorical poems. Results show that metaphorical understanding of poetic metaphor is still difficult for students even in Grade 9. Furthermore, results indicate that some poems and their metaphors are processed more easily than others, depending on relations between vehicle- and tenor-domain and the degree of metaphorical tension. With regard to the strategies, the analysis of two contrastive cases of sixth-graders shows that an initial experience of tension seems crucial for achieving metaphorical understanding and that strong students show affective and evaluative responses as well as flexibility in generating meaning. Besides, they monitor their reading process. An aesthetic reading mode can already be traced with some sixth graders. Results indicate that teaching should provide students with opportunities to focus on poetic metaphor, and introduce ways of imagining and analogising on and around metaphor. Also, room should be provided for realising and articulating affective and evaluative response.

Keywords: literature education, understanding metaphor, reading strategies, aesthetic reading mode, thinking aloud

1.   INTRODUCTION

A central aim of research in literature education is to investigate and understand learners' approaches to literature and literary development over school years. Such research can form the basis for designing instruction to improve students' understanding of literary texts and their engaging in literature through education. In our research project we focus on the understanding of poetic metaphor in lower secondary education. We thus address a particular aspect of literary learning that is considered as both demanding and inspiring in education. Both the challenge and the fascination of metaphor are reported by professionals in the lower secondary grades: "interpreting metaphor, that's difficult for students well into upper secondary, thinking in associations, you know", an experienced teacher from Grade 6 states in an interview, thus pointing to the specifics of assigning meaning to metaphor (we named her "Frau Krüger": Krü/Gym/grade 6, 104-112). The same teacher also mentions that young students were amazingly open and showed a spontaneous and natural way into demanding metaphors in poetry: that learners in Grade 6 (about 12 years old) were able to interpret the metaphorical poem *Feuerwoge jeder Hügel* (*Fire Wave Every Hill*, see Appendix) by the German poet Georg Britting was surprising for her (Krü/Gym/grade 6, 174-176, 188-189).

Understanding metaphor is somehow exemplary for specific procedures of interpretation: assigning a meaning to a literary text that needs to be developed beyond the literal, a process that calls on imagination, but often also on abstraction. Within the German educational tradition metaphor is already focussed upon in Grade 6 and 7, particularly with poems (Katthage, 2004). Curricula for lower secondary education demand that students deal with "imagery" and "metaphor" which is laid down in the central curricular guidelines of the federal state (KMK, 2003 [Educational Standards for the subject German at the end of Middle School], 14). Mostly, metaphor is addressed as a figure of speech. In textbooks, it is normally either defined along the substitution theory (x stands for y) or as a specific form of comparison (x is like y) (Lessing-Sattari, 2017; Katthage, 2004). The term itself is often not introduced until Grade 7 or 8. From Grade 9 onwards till the final exams of the higher academic track in Grade 12 and 13 metaphor is to be detected within textual analysis. This genre forms part of the "Interpretationsaufsatz", an assignment in the form of an essay, a task that is often used in German literature classrooms.

With regard to literary development over school years metaphor is particularly interesting: It is to be expected that older students would be better equipped because of cognitive development. Following Vygotskij ([1934] 2012), the age of 11/12 may be a threshold as students reach the transitional age. The German curricular tradition possibly reflects these insights. However, metaphor in literature education is linked to procedures of literary interpretation that are specific for formal schooling. The literature curriculum should thus influence students' abilities and their development considerably. Hence, we may expect that older students should be more capable because of practices they have acquired at school. Nonetheless, there is evidence from international research that students have

difficulties with interpreting poetic metaphor well into secondary education (Peskin & Wells-Jopling, 2012). Within the German situation, it has been shown that the challenges of the above-mentioned assignment including metaphor are hardly met even at the end of upper secondary (Steinmetz, 2013). The older students often do not only experience the genre as difficult but also as demotivating, and their understanding of metaphor may be less apt than that of students even in primary school (Knopf, 2009).

In the academic discourse on literature education in the German speaking context the practices around the so-called figures of speech have been strongly criticised and it has been stressed that literary knowledge on rhetoric devices may not support aesthetic understanding at all, but rather gets into the way (Spinner, 2012). It has also been observed that younger students who do not yet draw on the respective knowledge may well come to terms with the same phenomenon (Spinner, 2012; Knopf, 2009). With regard to metaphor, it seems that the challenge the teacher has pointed out in the quote above becomes even stronger over school years, while some of the fascination with metaphor is missed out upon.

Thus, the question remains how to best address metaphor in teaching and learning contexts with students of different grades. So far, there is very little systematic evidence on how students differ with regard to understanding metaphor. Within our research we focus on poetic texts characterized by metaphor and investigate lower secondary students' understanding processes and strategies in dealing with them. A focus on poetic metaphor seems sensible because it fits the German education tradition. Besides, we can expect a particularly high level of interpretative activity.

2.   THEORETICAL BACKGROUND

2.1 Metaphor and interaction theory

The question how to capture metaphor theoretically has been answered differently in the rich history of the interdisciplinary discourse on metaphor (Zymner, 2003; Christmann & Scheele, 2001). We have mentioned above that textbooks for literature education in Germany focus on an understanding of metaphor that is in line with the substitution theory or with the comparison theory on metaphor. When looking at processes of metaphor comprehension from an empirical perspective the more recent interaction theory of metaphor has proved valuable. This theory has been taken up and further developed in analytic philosophy (Black, 1962), hermeneutics (Weinrich, 1976) and semiotics (Eco, 1985). Furthermore, it plays an important role in cognitive psychology (Christmann & Scheele, 2001).

Interaction theory views the metaphorical term in its cotextual and contextual environment: Whether an utterance is understood metaphorically or not is determined by various factors including the communicative situation. A metaphor like "Achilles is a lion" will be understood metaphorically where it is clear that

Achilles is a Greek hero, but not in a context where one could speculate about a name of an animal – fairly likely with children. Interaction theory then draws on the interplay of the vehicle – the metaphorical term (lion) – and the tenor that the metaphorical term refers to or can be related to (Achilles). In the process of meaning making similarities (in other words: analogies) are established: Some traits of a lion thus may be activated and transferred to Achilles and vice versa. Hence, relating tenor and vehicle leaves behind the simpler view of substituting the 'non-literal' metaphor by 'literal' language of the substitution theory and makes room for concentrating not only on the tenor, but also on the vehicle, an aspect Reinhart (1976) stresses and would expect with experienced readers.

It is to be expected that the process of generating metaphorical meaning is particularly creative with poetic metaphor: it is often experienced as innovative and thus more striking than conventional metaphors like "the sun is laughing" and it triggers imaginative elaborations and the construction of hypotheses (Eco, 1985; Kohl, 2007). Because of its striking character particular attention is brought to language use (Zymner, 2009).

Hence, the process of metaphor interpretation is brought about via an experience of difference or tension that demands specific efforts in constructing meaning: Metaphor differs from the expected way of using language and may surprise the reader. The process of meaning making includes a change of direction while building coherence. This change is backed by a change of attitude: readers may put time and energy into meaning making (Zymner, 2003). Zymner thus points to the characteristics of an aesthetic reading mode. Given the specifics of dealing with poetry such a reading mode may not only be linked to metaphor, but also to genre (Zwaan, 1993).

Thus, the approach via interaction theory allows to focus on creative processes of constructing meaning via drawing on and establishing analogies. Such processes are highly valued in the context of aesthetic education, as they can be related to more general concepts of aesthetic perception and the role of imagination (Zabka, 2004; Dewey, 1989): something new and genuine is generated via encountering a work of art.

2.2 Empirical evidence in metaphor comprehension

The interactional view on metaphor comprehension is supported by studies that trace readers' processes on relating vehicle and tenor in experimental non-literary contexts. Tourangeau and Rips (1991) as well as Becker (1997) point out "that the interpretation of a metaphor includes 'emergent' features, features not ordinarily seen as characterizing either the tenor or vehicle" (Tourangeau & Rips, 1991, 459). For the purpose of our study, insights into the processing of poetic metaphor are of particular importance. In his empirical studies on metaphor comprehension Steen (1994) examined differences in reading modes between literary and journalistic texts while considering the influence of literary socialisation. Using the think aloud method, he investigated processes of understanding with different groups of

(expert) adult readers – university students with different degrees of experience as well as researchers and university teachers. He developed a coding system of ten categories which was reduced to five categories in the end due to difficulties in assuring an appropriate intercoder-reliability (Steen, 1994, 137). One of Steen's central results was the link between explicit identification and explicit appreciation of metaphor in literary genres. Thus, Steen's study gives evidence for specific reading modes experienced readers draw on with literature. With regard to adolescent learners the question is in how far such a reading mode can already be traced with students in lower grades and how it may develop.

In a study on processing poetic metaphor with university students, Goodblatt and Glickson (2002) showed how good readers generate similarities by perceptual and semantic restructuring, while weaker readers understand metaphors based only on existing similarities. These readers draw inferences but do not explore new aspects of meaning.

Christmann, Wimmer and Groeben (2011) referred to the way the efforts with metaphor are met as the "aesthetic paradox". They traced it in an empirical study with university students. According to their experiment, non-conventional metaphor can be experienced as demanding, but if the challenge is mastered successfully aesthetic appreciation can be higher than with conventional metaphor – which hints at a rewarding aesthetic experience. From the perspective of literature education this observation calls for a specification with young and adolescent students. What are presuppositions for the respective experiences of success within and between different age groups or grades?

Differences between learners within lower secondary education regarding the understanding of metaphor have hardly been studied. A study by Knopf focussed more generally on the understanding of poetry and provides evidence that some students even in primary school perform surprisingly well in an interview-condition (Knopf, 2009). Peskin (2010), who positions metaphorical understanding under the umbrella of "symbolic interpretation", carried out a think-aloud-study and found that students in Grade 8 did not achieve a greater symbolic understanding with poetic texts than the students of Grade 4 in the same study. In an intervention study with students of about 12, 14 and 18 years of age Peskin and Wells-Jopling (2012) found that difficulties could be mastered considerably better by providing domain specific knowledge for symbolic interpretation and conclude that the role of this knowledge is more important than cognitive development (for a research review on metaphor comprehension see Pieper & Wieser, 2011).

2.3 Processes of generating meaning with poetic metaphor

It has been argued that the construction of metaphorical meaning is creative: similarities between vehicle and tenor are explored and new aspects of meaning may emerge through the interplay between vehicle and tenor. Mastering these processes is considered as a learning process. Which processes are available for readers and can be learned? In our study we aim at reconstructing students' operations of

understanding. The term relates to those operations that the reader executes or needs to execute in order to achieve an understanding (Grzesik, 2005, 130-131). The operations can have a different scope with regard to establishing meaning, e. g. an operation could be to rephrase a textual unit in your own words, to activate prior knowledge when dealing with a textual unit or to draw more or less complex inferences. The concept of operations is linked to models of text comprehension in the tradition of cognitive psychology (e. g. Kintsch & van Dijk, 1978), but takes into account the linguistic basis of the text: Operations can be reconstructed theoretically with regard to what readers need to do when constructing the meaning of a particular text. However, they can also be reconstructed on the basis of actual reading processes, answering the question what kind of mental activity lies behind the utterance of the reader. Thus, they can serve as a unit of analysis for think aloud protocols (Lessing-Sattari, 2017). The level of detail may vary, depending on the aim of the analysis (Grzesik, 2005, 133-134).

Strategies in this view are considered as sequences of operations that can be applied to achieve reading goals (Grzesik, 2005, 356). These goals need not be well-defined but might be established or adjusted in the reading process, which is particularly important for literary reading. Given that poetic metaphor is at the centre of this study, aesthetic reading strategies are of particular interest. Previous research has shown that it is often characteristic for such reading processes that any hypothesis on the meaning of the text is kept flexible and that the process of constructing meaning is monitored so that adjustments can be made (Grzesik, 2005; Stark, 2017). Other observations that can also be related to aesthetic strategies concern emotionally shaped responses and evaluations of text and reading experience (Janssen, Braaksma & Rijlaarsdam, 2006).

In contrast to general reading strategies the field of aesthetic reading strategies is not developed in detail yet. This may be partly due to the assumption that if texts are read literary they are read in a different mode and that this mode is not driven by clearly defined reading goals. The notion of an aesthetic reading mode has already been referred to above when drawing on the construction of metaphorical meaning, but needs to be developed in more general terms. Rosenblatt has distinguished between efferent and aesthetic reading. Drawing on the example of reading a poem by Frost, she assumes an aesthetic reader would "[pay] attention to the associations, feelings, attitudes, and ideas that these words and their referents arouse within him" (Rosenblatt, 1994, 25). In contrast to this, efferent reading is shaped by the question of what kind of message or information can be gained from a text. The "aesthetic stance" (Rosenblatt, 1994, 43) implies a readiness of the reader to engage in such a reading and not a conscious choice. Possibly, such a stance relates to beliefs readers may have developed on the specifics of the literary communication process, e. g. the assumption that poets may keep some message hidden for a long time, would like the reader to engage in solving riddles, that a poem aims at evoking a specific atmosphere as well as feelings in the reader (Pieper & Wieser, 2018). Beliefs of the kind will shape the reader's approach since they are linked to assumptions on "virtues and vices" when performing the reading task, as Chinn, Buckland and

Samarapungavan (2011) have pointed out with regard to epistemological beliefs. The think aloud protocols may allow for describing the corresponding aesthetic reading mode in more detail and may show traces of such beliefs.

3.   RESEARCH QUESTIONS

Our project aims at reconstructing operations and aesthetic reading strategies that learners use in lower secondary education when dealing with poetic metaphor. By focussing on students from Grade 6 and 9 we aim at gaining insights into particulars of two different age groups: one when students are more or less entering the Vygotskian transitional age and should be somehow acquainted with metaphor via the curriculum, one at a stage when students are regularly introduced into procedures of textual analysis in the German school system.

For the purpose of this article we focus on the following research questions:
1) Levels of understanding
   What levels of understanding do students in our sample reach?
   Do these levels differ between Grade 6 and Grade 9?
2) Influence of text and metaphor
   Do students reach different levels with different poems?
   How can potential differences be explained with regard to the text and the metaphors?
3) Strategies of dealing with metaphors
   What are the strategies learners apply when dealing with the challenge of poetic metaphor and are these strategies linked to an aesthetic reading mode?

4.   METHOD

4.1 Design

This study is part of a larger project, Literary Understanding and Metaphor (LiMet), which consists of two sub studies. The teacher study examines manifestations of subject-specific beliefs of teachers and the tensions in literary teaching with the method of problem-centred interviews (Lessing-Sattari, Pieper, Strutz & Wieser, 2017). The student study, which this article is focussed on, examines understanding processes and strategies for dealing with metaphors in lyrical texts of sixth and ninth grade students via using the method of thinking aloud. We applied a novice-novice design and compared students of the same grade level as well as of two different grade levels. Such a design seems more promising than an expert-novice-design as students usually do not attain expert level and school curricula do not aim at students becoming experts in the first place (see Janssen et al., 2006, 36). We assume that a comparison between novices offers insights into how different students can be supported to become competent readers.

4.2 Participants

The sample consists of 69 students in Lower Saxony and Saxony in Germany. Of the participants 54.3% (n=37) attended Grade 6 and 45.7% (n=32) Grade 9 (except for four students who were early in Grade 10 and whom we list with the ninth graders) at the Gymnasium (higher academic track) or at the middle school (Integrierte Gesamtschule, Mittelschule, Realschule). To select the students, we asked teachers of ten different schools to choose four learners of their class (two boys and two girls if possible) who were rather strong and rather weak with regard to reading literature. The demographic information of all our participants is shown in Table 1.

Table 1. Demographic information on the participants distributed by year (in percentages of students)

	Year 6 n = 37	Year 9 n = 32
Gender (female)	45.9	40.6
Gender (male)	54.1	59.4
2nd language	27.0	9.4
Type of School		
Gymnasium	56.8	50.0
Integrierte Gesamtschule	10.8	12.5
Mittelschule	21.6	25.0
Realschule	10.8	12.5

Every student individually answered a small questionnaire, so we could learn about the students' pleasure in reading, a sub-aspect of the construct of intrinsic motivation, about self-concept in reading, reading habits and reading interests (the scale for the latter proved to be unreliable with our sample). The items originate from a study by Möller and Bonerad (2007) whose instruments are based on the Motivation for Reading Questionnaire (MRQ) by Guthrie and Anderson (1999). For us, the German model was useful, as the items were already available and validated in German.

The students' reading motivation differs, but with a mean of 2.86 (*SD* = 0.71) on a 4-point Likert scale can be considered moderate (Cronbachs α = 0.77). The self-concept in reading has a mean of 2.95 (again on a 4-point Likert scale, *SD* = 0.625; Cronbachs α = 0.825). We specifically asked about poetry: most students never or almost never read poems outside school (69.4%). This is more often the case with students from Grade 9 (75%) than with Grade 6 (44.7%). The difference is statistically significant (*p* = 0.004). Thus, given the German curriculum the students will have experiences with reading poetry from their German classes, and it is to be assumed, that these are often rather exclusive, especially with respect to written poetic texts.

4.3 Poems

We used three poems: *Feuerwoge jeder Hügel* (Fire Wave Every Hill) by Georg Britting (approx. 1930), *Zirkuskind* (Circus Child) by Rose Ausländer (1979) and *Trauriger Tag* (Sad Day) by Sarah Kirsch (1967; see Appendix). We chose these poems because they can be considered suitable for secondary education. Their metaphorical nature is striking since they are characterised by fields of metaphor. Missing out on metaphor will thus lead to an interpretation that cannot be considered text-adequate.

According to the information we gathered from the teachers, there was only one group of students (four students of Grade 6) who knew the poem *Feuerwoge jeder Hügel* and one of these students mentioned this during the think-aloud-session.

Feuerwoge jeder Hügel is characterised by a closeness of the concepts of tenor and vehicle: on the one hand, a landscape in great heat, on the other hand, fire with the connotation of danger. Dealing with the different facets of fire leads to possible difficulties regarding hints to the seasons: flowers and wheat seeds may indicate a spring landscape, whilst the heat that echoes through the fire hints at a summer day, and the yellow and red colouring at an autumn day. The poem can be found in textbooks in series of poems on nature and the seasons.

Zirkuskind is about playing with fantasy which is combined with images of a circus and a scenery of a dream. The speaker, using the first person singular, presents himself as a circus child playing with thoughts and addresses the reader at the end of the text with a request to catch the "balls of dream". This request links the last to the first stanza and may provoke a poetological reading of the whole text: the speaker can be thought of as a poet communicating with a reader. Constructing a metaphorical meaning is particularly difficult since the poem easily leads into a fantastic scenario of dream where a winged horse is one of the central protagonists. Also, a circus child is a plausible human protagonist, so the metaphorical tension is produced by the cotext and by prior knowledge a reader may apply. Textbooks that include this poem take up issues of fantasy and also of emotions linked to the free-floating situation of the speaker.

In *Trauriger Tag* the speaker – again using the first person singular – presents himself as a sad tiger who strives through (East-)Berlin on a rainy day feeling isolated and being ready to offend people. The imagery offers an insight to his partly aggressive, partly lonely mood. The poem which is composed allegorically around the tiger can also be interpreted politically: referring to a continuously depressing situation in the repressive environment of the former GDR. It is thus offering a level of meaning that goes beyond the description of a sad and aggressive person. While the political background may not be known to students in lower secondary, the vehicle "tiger" can easily be related to a person and it is possible to come to a metaphorical interpretation without reading the poem in its historical context. In textbooks for Lower Secondary it is related to issues of identity.

All in all, the poems are quite different: *Feuerwoge jeder Hügel* is characterized by the close concepts of a landscape (tenor) and a landscape on fire (vehicle). With

Zirkuskind the metaphorical tension is less strong than with *Trauriger Tag* because "I am a circus child" may not provoke the construction of metaphorical meaning as easily as "I am a tiger". *Trauriger Tag* is more demanding in terms of literary knowledge when it comes to a politically informed interpretation.

With these three poems we intended to gain insights into the role of textual specifics–while at the same time not overloading the students with too many texts to process in the think-aloud-situation.

4.4 Data collection

For the collection of data, we used the method of thinking aloud which requires that students speak out loud what they are thinking while reading the poems. This method has proved useful in research on reading processes (see Janssen et al., 2006; Janssen, Braaksma, Rijlaarsdam & van den Bergh 2012; Stark, 2010; Steen, 1994). Christmann and Groeben (2013) specifically recommend it to come to terms with the complexity of metaphorical understanding and move beyond a merely cognitive orientation towards emotional responses and aesthetic processes. We use the think aloud method to reconstruct these complex processes and to assess relations between approaches to metaphor and the respective text.

To fit our research questions, we adapted the method. Each text was presented to each student in four phases: (1) presented in small parts (see Appendix for the parts we chose from each text), (2) presented as entire text, (3) with a focus on three or four metaphors which were underlined (see Appendix) and (4) with a focus on global coherence (prompt: "What would you say if you introduced the text to a friend/to your mother...?"). Inspired by Deffner (1984), before thinking aloud on the poems, students were asked to think aloud on a caricature for practise. Afterwards, the students could ask questions about the method and were encouraged in their approach. We instructed the students as follows:

> I'm interested in what you think while you understand poems. To this end, I will ask you to think aloud as you read a text sentence by sentence. When I say that you should think aloud, I mean that you say everything you think about from the moment you see the text – I'm interested in all the ideas, thoughts or struggles that you have. Everything is important for the study. There is no right or wrong. Please try to speak all the time. I don't want you to plan what you say or try to explain to me what you say. Please act as if you are alone in the room, talking to yourself, and take as much time as you need to think or talk. If you remain quiet for a while, I will ask you to go on talking or thinking aloud.

During the phases 1 to 3, the interviewer did not intervene. We only reminded learners to express their thoughts in the case of long pauses saying *remember to think aloud*, *go on talking* or *what are you thinking*.

The poems were presented in a folder, in which the students could scroll back and forth independently. Turning the pages always uncovered the next part of the poem (see Appendix), so that it gradually expanded into the entire text. That way, the normally automated reading process is slowed down (see Stark, 2010; Weidle &

Wagner, 1994). However, we assume that this is adequate for the problem under study: poetic metaphor often causes some kind of disturbance and leads to slowing down and repetition (see Christmann & Groeben, 2013; Zymner, 2003). If the method intensifies the process of understanding this fits what comes rather natural to experienced readers with poetry.

All in all, we audio recorded the thinking aloud of 69 students, whereby one student (Grade 6, middle school) did not read the poem *Zirkuskind* and another one (Grade 9, Gymnasium) did not read the poem *Trauriger Tag* due to lack of time. This makes a total of 205 thinking aloud protocols. The thinking aloud sessions lasted an average of 31.61 minutes (*SD* = 9.56).

4.5 Data analysis

The data were transcribed using the GAT-2 conventions from discourse analysis which are well accepted in German speaking environments and include information on prosody and affective response like laughing. In GAT-2 capital letters are indicating stress (exclusively), important non-verbal information is given in brackets ("laughs"), if a person speaks smilingly this is indicated by <<:-)>…>, punctuation refers to intonation. GAT-2 also determines that data are transcribed and published in the font Courier 9 pt. (for details see Selting et al., 2010; Selting et al., 2011). The transcripts were imported into a MAXQDA-file. For the first evaluation of data, we worked with qualitative content analysis (Mayring, 2000; 2008). Starting from our pilot study (Pieper & Wieser, 2012), reconsidering theoretical approaches on metaphor and consulting other think-aloud-studies on literary understanding, we extended the coding system in order to specify students' approaches to metaphor. Thus, the codes were developed both deductively and inductively and adapted during coding.

The units of analysis were determined to include a student's utterance on a presented part of the respective poem. Thus, we could provide comparability of the units for the different protocols. In Table 2 we present our coding system. The codes for understanding metaphor (LU, ELA, IM, MI and MIA) were only coded with those metaphors that were underlined for the third phase of the think aloud (phase 1 and 3). Multiple coding of these codes was not possible because they exclude each other. All other codes (PI, MON, EVA and POET) could be coded at all coding units. Therefore, multiple codings with these and the codes for metaphor understanding were possible. We also had one category (REST) for utterances that could not be interpreted (e. g. due to reading errors).

Table 2. Coding system

Code	Abbre-viation	Explanation	Example (all from protocols on *Feuerwoge jeder Hügel*)
Literal understanding	LU	A metaphorical passage is interpreted with the neutralisation of the metaphorical tension. In contrast to ELA rather short. Possibly by ignoring or literally interpreting the entire passage.	`<<reading> flowers smoulder on the branches, jiggle them. (1.0) the sparks are rising, swirl into the blue space. (1.0) fireworks every tree.> okay. so. flowers smoulder on the branches (or so) i'd say burn or so, (1.0) yes vaporize.=burn so (GYM_A_9_4_f_26)`
Elaboration	ELA	The metaphorical passage/parts of the metaphorical passage is/are developed or are the cause for associations. No indications for metaphorical understanding. The extent of the elaborations can vary. This code can be coded with LM.	`<<reading> SCREAMing the WHEAT seed boils> uh now the FIELD is also in flames; (1.0) it's really like they would SCREAM, maybe because the wind goes through it again; as if they were SCREAMing, there are NOIses, there is EVerything, scream the wheat seed which SCREAMS, because it burns. (GYM_E_6_3_m_118, on the way to MI because of "like")`
Problem identification	PI	Coherence is disturbed or a conceptual conflict is identified. This can be an implicit metaphor identification, but it doesn't have to be. This category is also used when unspecific, subject-related uncertainties are mentioned.	`<<reading> when the wind moves the flames' wings, dust clouds like golden smoke.> (1.0) uhm (2.0) when the wind moves the flames' wings describes that the uhm leaves or the branches of the bushes are just moving in the wind (2.5) and (10.0) about the second i don't know exactly how to describe this, (4.5) (RS_D_9_1_m_20)`
Explicit identification of a metaphor	IM	It's explicitly stated that it is a metaphor/verbal image/non-literal expression. It is also encoded when "symbol" or "comparison" is used. This category is not assigned if LM, MI or MIA is coded at the same time.	`<<reading> screaming the wheat seed boils.> (1.0) uhm (7.0) this is again an an figure of speech i think, where uhm (3.0) yes s:d:=wh:ere just probably so this=this wheat, the shrubs, which burn like this, that the=the wheat ((breathes)) uhm yes, boil so to say caused by the heat? (MS_I_9_4_f_20)`
Indecisiveness between literal and metaphorical understanding	LM	Literal and metaphorical understanding are explicitly mentioned side by side or compared, with no decision being made for one or the other reading. This is a dynamic construction of meaning. Often, a problem identification can be found as well, but is not coded separately (similar to IM and MI).	`<<reading> fire wave every hill, green fire every shrub.> (1.5) so now either could mean, that it burns, or that the green fire means, that which grows, so to say a spring poem- or a summer poem- that something is growing there and that it looks like green: fire. (1.5) the shrubs; just the leaves. (2.5) (GYM_G_6_1_f_13)`

Interpretation of the complete metaphor	MI	Determination of the tenor and/or linking tenor and vehicle.	`there i rather think, tha_t (1.0) that_so perhaps it's only meant like, that_s that=the as uhm (1.0) used as a metaphor, that it burns, but in fact it is only a particular season or=something that is described. i would say now (GYM_A_9_4_f_29)`
			
			`<<reading> fire wave every hill, green fire every shrub.> uhm (1.0) that (1.0) the- (2.5) the picture that is described here, green fire, at first doesn't make sense but it describes the look of the the shrub, so (1.0) that the shrubs look like green fire, on the hills. (RS_D_9_1_m_19)`

Analogical Metaphor Interpretation (special case of MI)	MIA	As part of the metaphor interpretation, elaborations are made. Analogies between the vehicle and the tenor or between the two phenomena can be described.	`<<reading> green fire every shrub.> (1.0) uh: yes: green fire that's just what i've already said, i believe that is a bit:: uh: the single plants just like the- so just every shrub, that flickers a bit then, so to speak, the leaves in the wind, and that looks like fire which (1.0) yes is just green, because the leaves are also green, i cannot explain it in another way right now. (3.5) (GYM_A_6_1_f_98)`
Monitoring	MON	Observations of the process of understanding are articulated (metacognition).	`yeah:=so i w:ould say, so at the uh: at: the first line, there: i could still think that the (1.0) that_so uh that it doesn't really burn there, but=uhm (1.0) because it (1.0) uhm (1.0) so GREEN fire every shrub and_so, because now i rather think, that_s (1.0) that_so maybe it only means, that_s that=that is used as uhm (1.0) a metaphor (GYM_C_9_4_m_29; 2. TA)`

Evaluation	EVA	Collective category: The reader verbalizes positions to the text (commitment, involvement, evaluation, emotions, whether positive or negative). These can be more or less personalized evaluations, using more subjective expressions ('I', 'one').	`<<reading> SCREAMing, the wheat seed boils.> (1.5) oh ((laughs)) (5.0) in contrast to the beginning that sounds (1.5) less <<:->beautiful.> (GYM_G_9_1_m_64)`
			
			`<<reading> screaming the wheat seed boils.> that=is (1.0) very disturbing. (1.0) and because of the SCREAMing=it sounds really dramatic. And also uh very surreal. (GYM_G_9_1_m_80)`

Poetological beliefs	POET	Explicit thought about the characteristics of poetry/literature	`so it's about a (1.0) fire, a large-scale fire that is passing by flatland with forests and grazes and wheat fields as well (1.0), it=is windy, an:d what is special about is- that is i think as a poem it reads rather well, it is very FAST i think, it is pleasant to read and it rhymes well, (2.5) and it's special because- (1.0) yes that would just be the thing that makes it special for me, that for a poem it's good to read, because that is often not the case with poems. (GYM_A_9_1_m_43, concl. summary)`

Note. The protocols' abbreviations are composed as follows: type of school (Gymnasium=GYM, others: Realschule= RS, Mittelschule=MS, Integrierte Gesamtschule=IGS), anonymised name of school (capital letter), grade, number of students, gender (f=female, m=male).

In the second think aloud phase, when students could look at the entire poem for the first time and might thus take into account the entire cotext, we checked whether there were new aspects regarding the understanding of metaphor. To trace whether students would further develop their understanding we marked whether this phase showed equal understanding (=), new aspects with regard to metaphor comprehension (+), explicit recognition of new aspects (++) and changes towards literal understanding (-).

Based on the codings, we assessed the whole protocol regarding the level of coherence and the achieved interpretation, distinguishing four levels of understanding (A, B, C, D). Level A consists exclusively of processes of literal understanding (LU and ELA) and may include problem identification (PI), but no metaphor interpretation (MI or MIA). Regarding the poem *Feuerwoge jeder Hügel* that means that it is assumed that the landscape is on fire. Level B is partly similar to Level A, but metaphors are interpreted on a local level, there may be some MI and MIA. In level C, a global metaphorical understanding is reached. Regarding the poem *Feuerwoge jeder Hügel* that means that the field of metaphor (fire, flames, burn, flicker…) is interpreted as e. g. a description of nature, danger, heat and the interpretation might be marked using words like "like" or "compared". The level D is a special case of level C: also showing metaphorical understanding on the global level and additionally characterised by analogical metaphor interpretation (MIA). Simple interpretations of metaphors (MI) are less prominent. Level D thus is particularly close to the form of aesthetic perception that is argued as particularly developed and to be wished for in literature education.

In order to ensure the reliability of the coding and to work towards an instrument that can inform future research, we repeatedly checked the intercoder reliability during the process of coding, a process that we also used to further develop the coding system. In addition, cases of doubt were recorded in a separate file (6% of all codings) and discussed later in the project group, so that the group was able to reach agreement on these cases as well. At the end of the coding process, we randomly selected 7 of 69 protocols (10%) on which we calculated the final agreement of two independent coders (see Table 3). On these protocols we reached an average of Cohen's Kappa 0.64 which can be considered sufficient (Landis & Koch, 1977). We also calculated the agreement with a reduction of the coding system by combining the codes LU und ELA (processes of literal understanding) and MI and MIA (processes of metaphorical understanding) and thus were able to reach an agreement of Cohen's Kappa 0.69.

Table 3. Intercoder agreement (Cohen's Kappa) calculated with all codes and only with
LU/ELA and MI/ MIA; see Table 2 for the explanation of abbreviations

	all Codes	LU/ELA and MI/MIA
GYM_G_6_2_f	0.78	0.78
IGS_B_6_4_m	0.56	0.68
GYM_C_6_1_m	0.79	0.79
MS_I_9_3_f	0.57	0.68
RS_D_9_4_f	0.63	0.69
MS_I_9_2_m	0.55	0.62
GYM_A_9_2_f	0.63	0.62
Mean	0.64	0.69

The process of coding made us sensitive to difficulties of achieving agreement. Thus, it was all the more desirable to work more thoroughly on individual cases and determine the students' operations in a process of sequential analysis through the whole protocol.

We further examined the results, partly in a more qualitative perspective, partly in a more quantitative perspective: We examined the utterances that referred to characteristics of poetry and the literary communication process and may reflect poetological beliefs (code POET) in order to explore their role in understanding literature and metaphor. Also, we took into account evaluations and monitoring processes (Pieper & Wieser 2018). Besides, we traced problem identification and indications of insecurity via the codings (PI, LM) to further explore students' moves towards metaphor interpretation (Strutz & Pieper 2018).

4.6 Sequential analysis

As the developed codes are attached to utterances on segments of the poems that give evidence of a process of meaning making, the codes are still too holistic to allow for determining operations. Rather, they consist of complex sequences of operations of understanding and are embedded in a process of reading the whole text. To investigate how students come to terms with poetic metaphor in context, we examined 7 cases with an in-depth sequential analysis (see Lessing-Sattari, 2017) of the whole protocol. The cases were selected by the following criteria: 1) strong and weak students regarding the levels of understanding, 2) students who show a variance between levels of understanding and 3) students who show traces of poetological beliefs and good performance. For this article, we chose the contrastive cases of Mara (GYM_A_6_1_f) and Eva (GYM_E_6_6_f) who are both sixth graders of the Gymnasium. Mara reached level D with each poem and showed traces of poetological beliefs. Eva, however, only reaches level D with the poem *Trauriger Tag* but level A with the other poems which is a striking variability within her thinking aloud protocols. Both students are considered as strong by their teachers. According to our questionnaire they have a high self-concept in reading (4.0 on the 4-point-

Likert-Scale), Eva shows high pleasure in reading (3.25), Mara less so (2.5). Mara's protocol covers 35.26 minutes for the three poems, Eva's covers only 21.02 minutes. A major aim of the sequential analysis was to deduce literary reading strategies that support metaphorical understanding and further enlighten the question of what an aesthetic reading mode with regard to the challenges of poetic metaphor would be like. The analysis was carried out following the original coding units (see Table 4).

Table 4. Example from the sequential analysis of GYM_A_6_1_f: Mara deals with "green fire every shrub"; We quote from the German transcripts, the column "units of meaning" shows the units in English

original transcript	units of meaning	operations
hm: da lag ich ja vielleicht doch rich-tig.	2/1: hm: maybe i was right after all.	2/1: Monitoring: tentative confirmation of the preceding assumption which re-mains unnamed (1/5) ("may-be")
grünes feuer jeder strauch. ähm: das bedeutet wahrschein-lich dass damit das bewachsen-	2/2: green fire every shrub. uhm: that probably means that the growing over-	2/2: Elaborative inference: tries to form a hypothesis ("probably means") and stops

First, the students' utterances were divided into segments (Heine & Schramm, 2007). The segmentation was based on assumed operations of understanding that are expected to correspond to the verbalised units of meaning. On the basis of the segments, the operations of understanding were reconstructed in detail, strictly following the sequential order. Eventually, the operations were summarised, whereby the construction of coherence was taken into consideration and hypotheses for metaphor understanding of the respective student could be formed. At the end of each sequential analysis on one poem, we noted a summary of the general understanding of the text and distinctive features.

Each sequential analysis including the segmentation of operations was cross-checked by at least one member of the project group and revised based on team discussions so that intersubjectivity of the procedure and the results was ensured.

5.   RESULTS

5.1 Levels of understanding

Our first research question concerned the levels of understanding students reached, and whether these levels differed between grades.
Firstly, we calculated the distribution of the levels of metaphorical understanding across all three poems (Table 5).

Table 5. Distribution of levels of metaphorical understanding by year (in percentages of students)

	Level A	Level B	Level C	Level D
All	42.2	29.3	15.1	13.2
Year 6	45.5	30.0	12.7	11.8
Year 9	39.0	28.4	16.8	15.8

As Table 5 shows, the levels that indicate global metaphorical understanding (C and D) are reached by a considerably smaller group of students than those levels that indicate a non-metaphorical or only local metaphorical understanding (A or B). Students of Grade 9 are stronger than the sixth graders in level C and D (32.6% compared to 24.5%), but largely do not reach global metaphorical understanding (67.4% do not reach C or D compared to 75.5% of the students of Grade 6). However, if the ninth graders reach metaphorical understanding they rather reach the global level than just the local level (28.4%). This is different from the sixth graders who rather reach metaphorical understanding on local than on global level (30.0% compared to 24.5%).
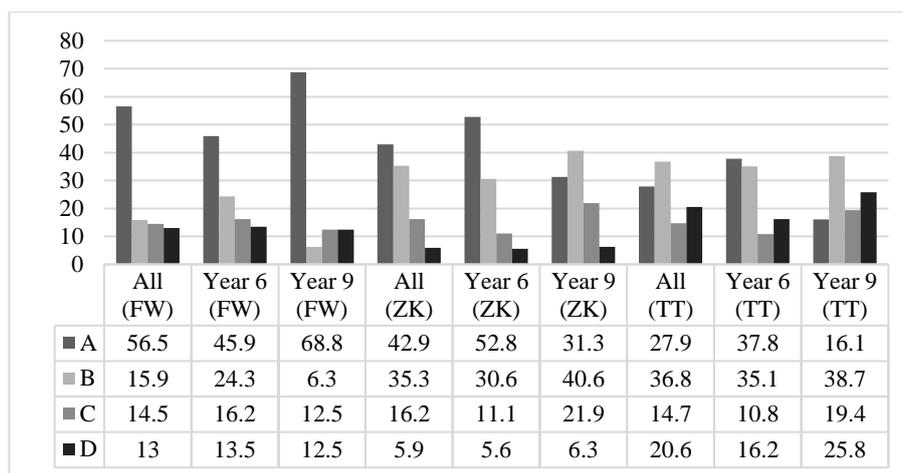
5.2 Influence of text and metaphor

Our second research question was whether students' levels of understanding varied between poems and metaphors. Figure 1 shows the distribution of levels of understanding for each of the three poems, per grade.

In *Feuerwoge jeder Hügel* a particularly large proportion of students only achieve level A, a proportion that is actually highest in year 9.

For *Zirkuskind* the levels A and B are closer to each other and a considerably higher percentage of students offers metaphorical meanings on a local level. More students in year 6 than in year 9 miss out on metaphorical understanding altogether (level A). Level C is much more prominent in year 9 and level D is only reached twice in both years (5.6% of 36 students of grade 6, 6.3% of 32 students of grade 9). In *Trauriger Tag* more students reach the levels C and D than in the other two poems. Particularly striking is the relatively high number of students that reaches level D in both grades, while level A is less prominent than in the other two poems.

Mastering metaphorical interpretation on a global level is least prominent with *Zirkuskind* (22.1% compared to 27.5% for *Feuerwoge jeder Hügel* and 35.3% for *Trauriger Tag*). Thus, results indicate that students' understanding differs noticeably between the three poems and that the question whether they reach global metaphorical understanding seems related to the texts and their metaphors. These differences will be dealt with in the discussion section.

Figure 1. Distribution of levels by year and poem (FW=Feuerwoge jeder Hügel, ZK=Zirkuskind, TT=Trauriger Tag; in percentages of students)

	All (FW)	Year 6 (FW)	Year 9 (FW)	All (ZK)	Year 6 (ZK)	Year 9 (ZK)	All (TT)	Year 6 (TT)	Year 9 (TT)
■A	56.5	45.9	68.8	42.9	52.8	31.3	27.9	37.8	16.1
■B	15.9	24.3	6.3	35.3	30.6	40.6	36.8	35.1	38.7
■C	14.5	16.2	12.5	16.2	11.1	21.9	14.7	10.8	19.4
■D	13	13.5	12.5	5.9	5.6	6.3	20.6	16.2	25.8

5.3 Strategies of dealing with metaphor–The cases of Mara and Eva

For our third research question we draw on the two contrastive cases of Mara and Eva: Both reach level D with the poem *Trauriger Tag*, the poem, that was mastered by more students than the other two. However, as Eva does not reach metaphorical understanding with the other two poems (level A) the two cases can be contrasted. To compare students of Grade 6 with partly similar performance seems enlightening with regard to the strategies that younger students may already be able to apply as well as with regard to the question of an aesthetic reading mode at the beginning of lower secondary education.

In *Feuerwoge jeder Hügel* Mara brings up the idea of a landscape description at the very beginning. In the first phase of thinking aloud, her reading alternates between literal and metaphorical meaning, but in the second phase a metaphorical reading is manifested on a global level. From then on, Mara constantly develops explicit analogies. This can already be observed at the beginning of the think-aloud-protocol as is shown in Table 6.

Mara monitors her reading process (2/1) and interprets the two verses in a tentative way. She assumes that the shrubs are overgrown by other plants, thus associating a feature that is not necessarily linked to shrubs, but emerging in the sense of Tourangeau and Rips (1991) and draws analogies between the shrubs in the wind and the moving of flames. Thus, she is constructing metaphorical meaning and relates vehicle to tenor. She marks her hypotheses as an attempt: "that probably means" (2/2).

Table 6. Example from the sequential analysis of GYM_A_6_1_f: Mara deals with "green fire every shrub"

original transcript	units of meaning	operations
hm: da lag ich ja vielleicht doch richtig.	2/1: hm: maybe i was right after all.	2/1: Monitoring: tentative confirmation of the preceding assumption which remains unnamed (1/5) ("maybe")
grünes feuer jeder strauch. ähm: das bedeutet wahrscheinlich dass damit das bewachsen-	2/2: green fire every shrub. uhm: that probably means that the growing over-	2/2: Elaborative inference: tries to make a hypothesis ("probably means") and stops
achso ne. das hat ja jetzt nichts mehr mit feuer wirklich zu tun,	2/3: oh no. that now has nothing to do with fire really	2/3: Tentative confirmation (2/1) is revised; explicitly turns away from literal reading
dass jeder strauch bewachsen is,	2/4: that every shrub is overgrown,	2/4: Elaborative Inference: Starts to make a hypothesis by putting aside "fire" following up on the interrupted hypothesis (2/2)
grünes feuer, und dass dis die pflanzen da drauf vielleicht aussehen wie so feuer, dass so: brodelt, und wenn die so ja wehen im wind;(2.0)	2/5: green fire, and that the plants on it perhaps look like fire, that uh seethes, and when they well yes blow in the wind;	2/5: Elaborative Inference on the level of metaphorical meaning: Repeats vehicle "green fire" and tentatively continues the hypothesis ("perhaps"); Analogical understanding of metaphor whereby now the aspect of fire is included (plants on shrubs, which blow in the wind, looking like seething flames)

Eva deals with the same passage quite differently: With *Feuerwoge jeder Hügel*, global coherence is only briefly constructed at the end ("it's about a landscape"; "everything was made of fire"). Eva often considers the respective passages in an isolated way and assigns local meaning to them. The metaphorical tension is normalised or ignored. This is demonstrated by the following passage from the sequential analysis (Table 7).

Table 7. Example from the sequential analysis of GYM_E_6_6_f: Eva deals with "green fire every shrub"

original transcript	units of meaning	operations
AH_je?=also das is ähm ich stell mir das=ich stell mir jetzt grad ein BILD im kopf vor,	2/1: UH_ye?=well i imagine this i actually imagine a picture in my head,	2/1: Monitoring: describes actual imagination as "picture in my head"
dass=ein, halt dass solche hügel aus FEUer sind, dass man da aber drüber gehen kann,	2/2: that=well that such hills are hills of fire, but that one can walk over them,	2/2: specifies the "image" mentioned under 2/1, following 1/4 (hills are of fire, one can walk over them); indicates literal understanding
und dass das feuer halt ja, dass=es grün also dass es halt quasi alles aus feuer besteht. (1.5)	2/3: and that the fire well yes, that it green eh that it all consists of fire so to speak. (1.5)	2/3: continues the elaboration of 2/2, only starts on "green" ("that it green uh"), moves back to the "fire"; indicates literal understanding

Eva refers to drawing a mental image. She elaborates on a hill consisting of fire and where one can walk along. It first seems that she also imagines green fire, but she quickly moves on from "green" to "it all consists of fire", omitting the verb: "that it [is] green". Possibly, she draws on a rather supernatural scenario where fire is walkable. When she deals with the verse in the third phase of the think aloud (then underlined) she starts off but stops to read it a second time. Then she states that she hadn't quite understood the verse before (Table 8).

This indicates that she identifies the metaphorical tension in "green fire every shrub", but is at a loss, when it comes to generating a metaphorical meaning, which is in line with her quick move from "green" to "that it all consists of fire" in the first phase of the think aloud. While Mara refers to her own reading process as successful ("maybe I was right"), Eva refers to the repeated experience of not understanding and the option to imagine a story starting from the poem, thus coping creatively with the challenge. The German reflexive verb "sich ausdenken" (translated as to imagine [a story]) refers to an autonomous process, starting from the reading, but possibly moving away from it. The evaluation "funny" refers to enjoying the story-making process. Eva presents it as a way of coping.

With the third poem, *Trauriger Tag*, Eva reaches an advanced understanding. Again, it is interesting to compare the first and the third phase of the think aloud: She first develops the picture of a lonely person and does not refer to specific features of the text explicitly: When dealing with the verses "I spit my street empty/And sit myself down amongst honest seagulls" she says: "Here I imagine that the adult, well, that he feels lonely and that he thinks nobody wants to have anything to do with him and he more and more withdraws." Eva thus elaborates upon the mood and the imagined situation of the figure.

Table 8. Example from the sequential analysis of GYM_E_6_6_f: Eva deals with "green fire every shrub" for the third time

original transcript	units of meaning	operations
also ich find <<vorlesend>grünes feuer jeder strauch->	9/1: well i think <<reading>green fire every shrub->	9/1: starts some reflection, stops, reads again
den satz, den hab ich ja schon vorher nicht so ganz verstanden;	9/2: this sentence i didn't quite understand in the first place;	9/2: Monitoring: Describes non-understanding of the verse and explicitly refers to the fact that this non-understanding already existed before (2/3).
aber ich find, dass er halt lustig klingt	9/3: but i think it sounds funny	9/3: Evaluation of the verse as sounding "funny"
und dass man sich eigentlich beim ganzen gedicht weil da quasi eine geschichte zu ausdenkt. denken kann- wenn man halt so einen vers, eine zeile liest.	9/4: and that with the whole poem one imagines a story somehow. can imagine- when reading a verse, a line.	9/4: Describes the possibility of imagining a "story" to accompany the poem when reading verse by verse (perhaps a reference to the procedure of thinking aloud); possibly following the statements on the creation of an "image in her head" (3/1, 6/1, 6/2).

When she tackles the verse on the honest seagulls again – the metaphor being underlined – she refers to the metaphorical tension by marking the difference to the way she would imagine seagulls (Table 9).

Here, Eva does not claim to be amused but speaks smilingly, thus responding to the challenge affectively. Her hypothesis is that the seagulls can be replaced by "somebody". This somebody can be good company for the lonely person. Hence, she can integrate the meaning into the reading of the poem she has established so far. While her first reading of the verse did not refer to the metaphor she now tentatively offers a metaphorical reading. However, she does not develop the analogy between the seagull and "somebody", thus the (complex) metaphorical link between "seagull" and "honest" remains undeveloped.

Table 9. Example from the sequential analysis of GYM_E_6_6_f: Eva deals with "honest seagulls" for the third time

original transcript	units of meaning	operations
ähm, ja ich- möwen, ich weiß nich, ich stell mir möwen halt nich <<:-)>sehr ehrlich vor.>	17/1: uh, yes i- seagulls, i don't know, i don't think of seagulls as <<:-)>particularly honest.>	17/1: Confusion: Articulates a difference from subjective imagination ("I don't think of seagulls as <<:-)>very honestly.>"), which obviously amuses her (she speaks smilingly).
aber (1.0) ich weiß nich vielleicht sind- fühlt=er sich, nich mehr so allein wenn (1.0) jemand ehrliches <<blätternd und leise>dort is.>	17/2: but (1.0) i don't know perhaps they are- he=feels no longer so lonely when (1.0) somebody honest <<turning the page and with a low voice>is there.>	17/2: Elaborative inference on the level of metaphorical understanding: tentatively ("but (1.0) I don't know perhaps") forms hypothesis for the extension of the established reading: adds the aspect of "honest people", which she presents in a reserved (low voice) way.

In contrast to Eva, Mara develops analogies between honesty and the seagulls and comes up with a metaphorical meaning where the seagulls remain seagulls (Table 10).

It is noticeable that Mara, whose protocol is 14 minutes longer than Eva's, elaborates more extensively on the two verses keeping close touch with the verbal material of the poem. She rereads both verses. Her elaborations are linguistically elaborate and uninhibited as can be seen by the differentiated verbal material she has at hand ("ledge of a house", "loyal", but also "shit"). Mara develops a scenery that fits the rainy day in the city and the angriness of the poetic speaker. She connects honesty with loyalty and can transfer this to the seagulls: They will do what they usually do and remain true to themselves. As the transcription indicates she is mostly speaking smilingly, thus amused by the poem and by what it initiates with her. Finally, she confirms her reading: "this is what I could imagine". In contrast to her, Eva seems to remain insecure: speaking with a low voice and more tentatively at the end of this part.

Finally, as both students manage to develop a metaphorical reading of *Trauriger Tag* on a global level, it is revealing to compare the way they assign meaning to the speaker who presents himself as a "tiger": Eva brings up the idea that the poem is about a child at the very beginning, when dealing with the title "Sad Day". When she thinks aloud on the first verse "I am a tiger in the rain" she carries on in this direction but does not refer explicitly to the child being presented as a tiger: "this sounds, well, I believe this is going to be a very sad poem", she says smilingly. "uhm, yes, the child is perhaps very sad because it feels locked out" (GYM_E_6_6_f_75). When she later

comes to a point that it will be rather a grown-up-person she states: "not a child, an adult" (GYM_E_6_6_f_83) but does not develop this shift further.

Table 10. Example from the sequential analysis of GYM_A_6_1_f: Mara deals with "honest seagulls"

original transcript	units of meaning	operations
aha.	11/1: aha.	11/1: Expresses a realisation
also: ich fauche mir die straßen leer vorstellen.> (1.5)	11/2: well: i spit my street empty	11/2: rereading of the first part of the verse
kann ich mir vorstellen dass er dann irgendwie zu na bank geht, wo er sich hinsetzen will da sitzen aber schon ganz viele weil da irgendwie da drunter irgendwie was is, also ne unt- ja: so_n vorsprung von nem haus wo_m wo_s dann eben nich nass wird, öhm: und dass er die dann irgendwie be-schimpft damit sie weggehen damit <<:-)> er sich da hinsetzen kann,>	11/3: i can imagine that he goes to a bench, where he wants to sit but there are many others already because below this there is something uh some ledge of a house where you don't get wet, uhm: and that he somehow insults them so they go away <<:-)>so that he can sit down there,>	11/3: Elaborative inference on the described situation
und setzt sich unter ehrliche möwen.	11/4: and he sits himself under honest seagulls.	11/4: Rereading of the second part of the verse
ehrlich is ja immer auch sowas wie loyal,	11/5: honest is always something like loyal ye,	11/5: Elaborative inference: Explores the semantic aspect of the word "honest" ("something like loyal")
und dann kann ich mir vorstellen dass eben die möwen ihn öh: vollkacken weil wenn sie ehrlich sind dann <<:-)>stehen sie ja zu dem was sie sind, und machen> auch das was sie machen und- ja.	11/6: and i can imagine that the seagulls shit on him because if they are honest then <<:-)>they stick to what they are> and do what they do and-yes.	11/6: Elaborative inference: transfers semantic aspect of "honest" (11/5, loyal) to seagulls and elaborates ("seagulls shit ono him", "stick to what they are")
<<:-)>das könnt ich mir darunter	11/7: <<:-)>this is what i could imagine.> (1.5)	11/:7 closes the sequence by confirming that this is what she can imagine or make of the verse

Mara, when reading the first verse, develops the situation of the "tiger", starting affectionately with an "oh" and taking time: "a tiger in the rain, he is perhaps

aggressive because he is in the rain and doesn't want to get even wetter but he is a tiger so he cannot go in anywhere but into a cave. And perhaps that he is sneaking (1.0). and that he looks somehow scary, and that he is mean and irritated and so on (2.5)" (GYM_A_6_1_f_149). As she moves on and learns about the "tiger" being in the Friedrichstraße she explicitly states: "in the meantime I do not think that it is really a tiger but [...] that it is again just a metaphor, that it is actually a human being so to speak" (GYM_A_6_1_f_151). Thus, Mara is explicitly monitoring her process of interpreting and relating it to the structure of the poem: "just a metaphor". Several times in the protocol she refers to "metaphor", "metaphorical" and "symbolic" features. She is also evaluating, e. g. in stating that she does not find the title particularly adequate: "mean day or something like that would be more fitting" (GYM_A_6_1_f_165) and compares this poem to other poems she knew so far. She states that the atmosphere was different from the kind of poems she had encountered up to then: "poems on the spring season and the like" (GYM_A_6_1_f_203).

From the analysis above we hold that the two students have a repertoire of strategies at their disposal that enable them to a different extent to master the challenge of poetic metaphor. Table 11 presents an overview of these strategies.

It is noteworthy that Mara's responses are often shaped by emotions and that she is investing a lot of time into imagining and making meaning, re-reading passages frequently. Besides, it is striking that she constantly monitors her reading process.

Table 11. Summary of reconstructed strategies on the examples of the cases of Mara and Eva

Strategies	Mara	Eva
initiated by an experience of tension: imagining	is aware of tensions and develops an integrating scenery	shows little awareness of the metaphorical tension and may not integrate it in her imaginative readings
initiated by an experience of tension: drawing on potential relations between vehicle and tenor, often tentatively	starts a productive process of meaning making and explicitly relates tenor and vehicle, uses verbal procedures to do so ("this means that..."), tentative mode: "could", "perhaps"	seldom relating tenor and vehicle explicitly tentative mode: "perhaps"
investing time into imagining and into the process of meaning making	takes time to develop an imaginative scenery and the analogies ("I can imagine that..."); repeatedly reads passages, talks a lot, pauses often	elaborates imaginative approaches, but less extensively; talks little, few pauses
monitoring the process of meaning making	observes and evaluates her process of meaning making	marks explicitly when she is developing "pictures", refers to problems in understanding

specifying and correcting a hypothesis about the meaning	revises when generating new ideas and when new information from text is to be integrated	no explicit revisions but smooth shift in interpretation
being emotionally involved and showing affective response	laughs often, refers to the atmosphere she is perceiving	shows emotional response less frequently
evaluating the effect/quality	articulates effects and evaluates	articulates effects ("very sad poem")

6. DISCUSSION

Revisiting our research questions our main findings can be summarised as follows.

The distribution of the levels of understanding shows that the difference between sixth-graders and ninth-graders is not large. Overall, many students from both grades show processes of literal understanding (levels A and B). In terms of global metaphorical understanding (levels C and D), however, the ninth-graders are more advanced than the sixth-graders.

The text-related distribution of the levels of understanding suggests a strong influence of text and its metaphors on students' understanding. The results for the respective poems vary: with *Feuerwoge jeder Hügel* the sixth-graders are stronger than the ninth-graders. *Zirkuskind* appears to be particularly challenging, while a metaphorical understanding of *Trauriger Tag* seems to be reached more easily.

We distinguished seven strategies of aesthetic reception applied by Mara and Eva, our two case students. Two of the strategies are connected to an experience of tension being explored. One shows that imagination plays a central role in the process of constructing metaphorical meaning. Other strategies relate to the importance of monitoring the processes of meaning making, the development of hypotheses about the meaning (including specifying and correcting them) and the occurrence of affective responses to and evaluations of the effect and quality of a poem.

6.1 Levels of understanding

An analysis of the distribution of the levels clearly shows that for the students in our sample understanding poetic metaphor with the three poems was challenging. With both the sixth- and the ninth-graders the group who achieves global metaphorical understanding (level C) and global metaphorical understanding that includes analogical interpretation (level D) is always smaller than the groups who do not achieve metaphorical understanding (level A) or only on local level (B). Students of the higher academic track generally perform better. Given that reading poetry is seldom practised outside school, especially with the ninth-graders of our sample, we assume that the results show some influence of literature teaching. Encounters with metaphor outside school, e. g. with songs students may be listening to, probably do not lead to similar practices of tackling the textual features. It is particularly striking

that the difference between the sixth-graders and the ninth-graders must be considered moderate – despite the fact that in the curriculum dealing with metaphor becomes more important with the older students. This is in line with Peskin's results in the think aloud study referred to above (Peskin 2010). Whether the different forms of schooling show different results needs to be explored further, also with regard to the distribution of the descriptive codes, namely codes like monitoring (MON), poetological beliefs (POET) and evaluations (EVA).

6.2 Influence of text and metaphor

Results of our study indicate that the textual factor has an impact on the students' performance. In *Feuerwoge* literal understanding (level A) is most prominent whereas analogical metaphor interpretation (level D) is least prominent. Thus, the metaphorical aspect of this poem seems challenging even on local level. Thus, it is astonishing that the sixth graders do slightly better than the ninth graders. However, it can be hold that on a textual level it is easier to come to a metaphorical meaning with *Feuerwoge jeder Hügel* than with *Zirkuskind*: tenor – the hilly landscape in the heat – and vehicle – the metaphorical field around fire and danger – stand side by side, the tenor need not be constructed, but can be drawn from the text. It can be assumed that learners consider one of the two concepts more dominant and focus on it. This does not explain why ninth-graders miss out on this aspect slightly more often, but may indicate that the challenge is more manageable if one focusses on the (given) tenor-domain.

With respect to the relationship between tenor and vehicle, *Zirkuskind* can be considered as more difficult since the tenor needs to be constructed: "I am a circus child" may well not ask for this, since it alludes to the plausible situation of a circus child speaking. The imagery around the dream makes room for a fantasy world that may form the entrance to very imaginative, though not metaphorical readings shaped by associative elaborations. Such a reading may be particularly close to the younger students who may still conceive of themselves as children. If "circus child" is not understood metaphorically, a global metaphorical meaning will not be constructed. And indeed, with *Zirkuskind* the number of students who reach global metaphorical understanding is smaller than with the first poem, but the ninth graders are considerably stronger than the sixth graders.

We also assume that the difficulty of the poem *Zirkuskind* can be related to the complex communicative situation the text is putting into scene: the circus child seems to be elaborating on her own thoughts and later addresses the reader. Our data suggest that younger students often do not distinguish between pragmatic and literary communication – i.e. distinguish between author and speaker and grasp that the speaker is put into place by the author –, but take it that a child is speaking or even writing, an assumption that Eva shares: "it sounds as if a child has written it". However, if students have acquired insight into the specifics of literary communication they may understand the text more easily. Then it would be more in their

reach that the circus child is part of a scenario that is staged for some specific effect or purpose which may serve as an entry point for more advanced interpretations (see Pieper & Wieser, 2018).

Generally, students did best with *Trauriger Tag*. The poem also starts with "I am", but as the speaker presents himself as a tiger the metaphorical clue is stronger: The situation of a tiger strolling Berlin is generally more striking and suggests the interpretation of a human being rather early. Students in the German school system are familiar with fables which might help with assigning a metaphorical meaning, too. It is particularly remarkable that the sixth-graders often engaged in developing surprising readings and seldom seemed at a loss. The cultural context of the Berlin-poem – notwithstanding the political context – could also have been a hindrance in approaching the poem. As could be noticed with the sequential analysis with our two cases the poem apparently also has some appeal for students: Mara and Eva are responding affectively and amused.

Could the text-related results be based on a sequential effect? Although it is plausible that students might develop the idea that metaphorical meanings need to be constructed within the experiment, the fact that the second poem appeared to be more difficult than the third one with regard to global metaphorical under-standing indicates that the textual factor is probably stronger.

6.3 Strategies of dealing with metaphors

As could be seen with the two cases we presented from the sequential analysis this procedure can provide further insights. There are some hints particularly with Eva that paying attention to the development of meaning making within the think aloud situation is enlightening: compared to her first think aloud on *Feuerwoge jeder Hügel,* the more focussed phase of her third think aloud (when some metaphorical terms were underlined) showed the difficulty Eva experienced with "green fire every shrub" more clearly. While she had gone over it when first tackling the verse she would then say that she hadn't understood it at the beginning either. However, with the "honest seagull" in *Trauriger Tag* she seemed to benefit from the more defined encounter with the underlined words and got further than before. This hints at the potential of providing focus and room for repetition with learners. A systematic approach to the process of meaning making over the different phases of our think-alouds via further analysis of the codings in all the protocols could help develop the picture.

The particularly strong sixth-grader Mara makes effective use of a repertoire of strategies that prove valuable when dealing with the challenge of poetic metaphor and poetry. Although Eva does not get quite as far, her case is also promising since she shows some awareness of metaphorical tensions and did benefit from focus.

Both learners give evidence that they appreciated the poem *Trauriger Tag* particularly. Mara often shows affective response when dealing with the poems and their metaphors. From the analysis presented above it seems likely that her strong

performance is backed by an appreciation of the experience she is facing when tackling the poems. She also refers to what she expects from poetry and brings in some knowledge about the genre. Besides she evaluates both her experience and the poems, e. g. when suggesting an alternative title for *Trauriger Tag*. We assume that this ensemble of informed attitudes feeds the aesthetic reading mode she shows when repeatedly going over the respective parts of the poems, investing time and referring to her imagination while making meaning. She thus shows the personally shaped response Rosenblatt is referring to when describing the aesthetic stance in reading (Rosenblatt, 1994).

It will be worthwhile to look more extensively into the way students verbalise their understanding of metaphor: We pointed out that a tentative mode is often present with the students' elaborations on metaphor which is in line with previous research (Stark, 2017). Particularly with Mara, we find verbal procedures that allow for relating vehicle to tenor: "this means that...". Both students explicitly point to their imagination: "I imagine that...", "I have a picture in my head". The imaginative elaborations prove fruitful for analogical metaphorical interpretation particularly for Mara. This will be investigated more thoroughly in the future. Along with the strategies reconstructed above this linguistic repertoire seems particularly enlightening with regard to the development of teaching tools.

Although our study shows that for most students who were dealing with the poems poetic metaphor was a challenge, we assume that it also gives inspiration for teaching. The repertoire the stronger students bring in seems open for intervention: it is possible in the literature lesson to make room for focussed attention to poetic metaphor and support students' awareness of metaphorical tension rather than going over it quickly. Besides, it seems worthwhile to bring the process of analogical metaphorical interpretation to the attention of the students in order to help them generating meaning from complex literary features (see Peskin & Wells-Jopling, 2012). It is particularly encouraging that students in our study show a certain enjoyment of dealing with the poems in the think aloud condition. Making room for an emotional appreciation of poetry and poetic metaphor in the literature classroom is certainly very important – if not a prerequisite for the development of an aesthetic reading mode. We assume that the openness we found particularly with the younger students should also be an inspiration for teaching. Attending to the originality and playfulness of students' understandings may well help broadening the notion of interpretation in the literature classroom in a way that is beneficial also for students' literary development far beyond formal schooling.

6.4 Limitations of the study

The design of the study of course has limitations: As we focussed on metaphor in the context of poetry the results cannot easily be transferred to metaphor in the context of other genres. The strategies we identified and the aesthetic reading mode we observed are also linked to reading poetry. For other literary genres both notions

need to be explored further. To gain further insights into literary development with poetic metaphor it would be particularly enlightening to study students from primary and upper secondary as well, or the same students over several stages of their school career – which is challenging for researchers on a practical level.

The coding system can be considered as an important result of our study in itself and can inform future research. However, ensuring intercoder reliability proved a difficult task. To some extent, we share the experience of Steen who considerably reduced his original system (1994). The fact that we allowed for applying more than one code to an utterance increased the risk that a coder would miss out on a code. As Table 3 shows, with some students and their protocols it was more difficult than with others to achieve intercoder-agreement. Both coders reported that it was sometimes hard to assess what the particular student's understanding was like. This problem may be particularly strong with learners in the lower grades who are not yet introduced very much to practices of interpretation so that their wording may not fit the coders' expectations to the same extent as with more mature students, e. g. cues for metaphor interpretation like "this could mean that…" were less prominent. Thus, it became more difficult to determine the border between merely associative elaborations and elaborations that gravitated towards metaphorical understanding. It is also noticeable that the intercoder reliability was low for the protocols of students of middle schools where literature traditionally does not play the same role as in the higher academic track (Klieme et al., 2006). The students thus would have less routine in expressing their understanding of a complex feature such as metaphor – and the coders may have more difficulties in tracing what they aim at saying.

The relation between the present study and the teaching of metaphor is not yet well developed. One next step will be to re-examine the results of the students' study in light of the teachers' study in our project. Based on problem-centred interviews, beliefs of the teachers on literary development, aims with literature teaching and approaches to poetic metaphor are reconstructed (Lessing-Sattari, 2018). In relating the two studies to each other we hope to develop a stronger basis for informing literature teaching and for designing interventions.

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APPENDIX

Feuerwoge jeder Hügel by Georg Britting

a[1]		**Feuerwoge jeder Hügel**		**Fire wave every hill**
b	1	<u>Feuerwoge jeder Hügel</u>,	1	Fire wave every hill,
	2	Grünes Feuer jeder Strauch,	2	Green fire every shrub,
c	3	Rührt der Wind die Flammenflügel,	3	When the wind moves the flames' wings,
	4	Wölkt der Staub wie goldner Rauch.	4	Dust clouds like golden smoke.
d	5	Wie die Gräser züngelnd brennen!	5	How the grasses flickeringly burn!
e	6	<u>Schreiend kocht die Weizensaat</u>.	6	Screaming, the wheat seed boils.
f	7	Feuerköpfige Blumen rennen	7	Fire-headed flowers run
	8	Knisternd übern Wiesenpfad.	8	Crackling over meadow paths.
g	9	<u>Blüten schwelen an den Zweigen</u>.	9	Flowers smoulder on the branches.
	10	Rüttle dran! Die Funken steigen	10	Jiggle them! The sparks are rising
	11	Wirbelnd in den blauen Raum –	11	Swirling into the blue space –
	12	Feuerwerk ein jeder Baum!	12	Fireworks every tree!

Translated by Bianca Strutz

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1 The letters indicate the parts that were shown in the first phase of thinking aloud. The text was growing within the experiment, so part b was added to a and so on.

Zirkuskind by Rose Ausländer

a		**Zirkuskind**		**Circus Child**
b	1	Ich bin ein Zirkuskind	1	I am a circus child
c	2	spiele mit Einfällen	2	Play with thoughts
	3	Bälle auf – ab	3	Like balls up – down
d	4	Ich geh auf dem Seil	4	I walk the tightrope
	5	über die Arena	5	Over the arena
	6	der Erde	6	Of the earth
e	7	reite auf einem Flügelpferd	7	Ride a winged horse
	8	über ein Mohnfeld	8	Over a poppy field
	9	wo der Traum	9	Where the dream
	10	wächst	10	Grows
f	11	Werfe dir Traumbälle zu	11	Throw you balls of dream
g	12	Fang sie auf	12	Catch them

Translated by Charlotte Methuen

Trauriger Tag by Sarah Kirsch

Trauriger Tag

a

b 1 <u>Ich bin ein Tiger im Regen</u>
c 2 Wasser scheitelt mir das Fell
   3 Tropfen tropfen in die Augen

d 4 Ich schlurfe langsam, schleudre die Pfoten
   5 Die Friedrichstraße entlang
e 6 Und bin im Regen abgebrannt

f 7 Ich hau mich durch Autos bei Rot
   8 Geh ins Café um Magenbitter
   9 Freß die Kapelle und schaukle fort

g 10 <u>Ich brülle am Alex den Regen scharf</u>
h 11 Das Hochhaus wird naß, verliert seinen Gürtel
i 12 (ich knurre: man tut was man kann)

j 13 Aber es regnet den siebten Tag
   14 Da bin ich bös bis in die Wimpern

k 15 Ich fauche mir die Straßen leer
   16 <u>Und setz mich unter ehrliche Möwen</u>

l 17 Die sehen alle nach links in die Spree

m 18 Und wenn ich gewaltiger Tiger heule
   19 Verstehn sie: ich meine es müßte hier
   20 Noch andere Tiger geben

Sad Day

1 I am a tiger in the rain
2 Water parts my fur
3 Drops drip into my eyes

4 I shuffle slowly, slide my paws
5 Along the Friedrichstrasse
6 And in the rain I'm burnt away

7 I fight my way through the cars when the light's red
8 Go into the café for a tonic
9 Guzzle the quartet and swing away

10 On Alex I yell the rain harsh
11 The towerblock gets wet, loses its belt
12 (I growl: you do what you can)

13 But it rains a seventh day
14 Now I am angry up to my eyebrows

15 I spit my street empty
16 And sit myself down amongst honest seagulls

17 They all look left at the Spree

18 And when I powerful tiger howl
19 They understand: I reckon there should be
20 More tigers here as well

Translated by Charlotte Methuen