Peskin, J. (1998). Constructing meaning when reading poetry: An Expert-Novice study. *Cognition and Instruction*, 16 (3), 235-263.

Running Head: READING POETRY

Constructing meaning when reading poetry: An expert-novice study

Joan Peskin
University of Toronto

This research was supported by a National Academy of Education, Spencer Fellowship. I would like to express special appreciation to Carl Bereiter and David Olson for helpful suggestions and critical comments. And I wish to thank the students at the University of Toronto and at Branksome Hall for their eager participation. Correspondence concerning this article should be sent to Joan Peskin, OISE/ University of Toronto, Institute of Child Study, 45 Walmer Road, Toronto, Ontario, M5R 2X2.

Abstract

Research in cognitive science has focused on expert performance in various domains, but there has been no expert-novice study on how meaning is constructed when reading poetry. In the present study "experts" were eight Ph.D. English candidates and "novices" were eight undergraduates or advanced high school students. Participants thought aloud as they attempted to make sense of two period poems. The protocol analysis, framed by four research questions, resulted in four broad findings: As in studies of expertise in other domains, for the experts, knowledge is an important component of poetic communication. Novices did, however, have well developed expectations for understanding the category of poetry as discourse. The experts employed productive interpretive strategies in making the poems coherent. The difficulty novices had in making sense of the texts, diminished their appreciation of the poems.

Constructing meaning when reading poetry:

An expert-novice study

Poetry communicates universal human truths. It is an instrument to make us see life and live it more intensely. But all too often poetry is received in a hostile spirit. For poetry, by its very nature, is often difficult to comprehend.

Recent research in cognitive science has focused on expert and novice representations and processing of texts (e.g. Dorfman, 1996; Johnston & Afflerbach, 1985, Graves & Frederikson, 1991; Scardamalia & Bereiter, 1991). But while numerous studies have examined the comprehension of prose, even with the new emphasis on empirical studies of literature there has still been little research on making explicit what expert and novice readers do when interpreting a poem. This is the focus of the present study.

There are important elements differentiating prose and poetry. In prose, ideas are connected by putting words in an established order. It tends to be written in an expansive way conforming to the combinative rules. Poetry, on the other hand, tends to compress, and in doing so, it inclines towards the comparisons and the condensation of figurative language. By emphasizing image formation it often disregards syntax, the connectives and the linear order of language. It seems, then, that the construction of meaning when reading poetry must make far greater demands on the inferential process.

The often-intractable language of poetry is one reason for the reticence in studying the comprehension of poetic texts. Another reason is that poetry appreciation may be seen as subjective, idiosyncratic and open-ended. In literary theory in the last few decades particularly, the location of the meaning has moved from within the text to the meaning-making activity of the reader. In reaction to New Criticism's assumption that there is an identifiable and objective meaning in the text, there has been an equally biased overemphasis on feeling, on the search for childhood memories, and other personal associations and themes (Rosenblatt, 1989, p. 47).

Taken to an extreme, an assumption that poetry reading is personal and natural would blur any distinction between an experienced or inexperienced reader. If a text could be interpreted in infinite ways there would be a 'debilitating relativism' (Fish, p. 317). We would not be able to talk about "the set of critical differences...between individuals who display more and less ability" in this particular domain (Chi, Glaser & Farr, p. xxi). Indeed, previous work on poetry reading has almost always been confined

to the study of various readers' processes as they read poetry, with no comparison of more or less informed readers (Dias, 1986, 1987; Harker, 1994; Hoffstaedter, 1987; Kintgen, 1983, 1989; Shimron, 1980; Silkey & Purves, 1973; Viehoff, 1986)

But text reading generates both personal as well as consensual meaning, and while no two responses will be exactly alike, a large number of readers may share a response (Purves, 1989). Fish's (1980) concept of interpretive communities allows for both personal response and stability of interpretation in that different readers with a background of common assumptions will see the text through the same filter; and recent studies have provided support for this stability of interpretation among homogenous communities (Dorfman, 1996; Martindale & Dailey, 1995). Also proposing a system of publicly shared expectations or rules, Culler (1976) explains shared interpretation by means of a system of reading conventions held in common by the poet and the readers of the poem. And Eco (1990) reconciles poetry as subjective response and objective meaning by emphasizing the role of the text, asserting that many "modern theories are unable to recognize that symbols are paradigmatically open to infinite meanings but syntagmatically, that is textually, open only to the indefinite, but by no means infinite, interpretations allowed by the context" (p. 21).

While Eco talks in general terms of contextual demands, it is likely that some poems are more constrained by textual pressure than others. Indeed, in pilot studies for the present research, while a modern, abstract poem generated very diverse meanings, each of which satisfied the reader, in a metaphysical poem containing an elaborate metaphor or conceit (for instance, John Donne compares himself and his wife to a geometrical compass with one fixed foot in the centre and the other circling around it), the number of possible interpretations which appeared to give the reader any feeling of satisfaction, seemed to be severely constrained by the text. This is not to say that individual readers did not construct intensely personal meanings as they read such poems. However, as one student verbalized, "all the pieces of the text will not fall together" if there is not the understanding of the conceit, the deliberately strained union of normally disparate elements. It therefore seemed productive to choose poems at the textually-constrained end of the continuum as the first step in examining expert-novice differences between experienced and less experienced readers of poetry.

The study took the form of an expert-novice comparison, a procedure currently proving fruitful in cognitive research. Studies on expertise look at what experts know and what strategies they use that novices do not know and do not use. In this way, any systematic changes in the patterns of interpretation and the operations underlying the reading of poetic texts can be examined. An expert refers to a person with special skills and knowledge acquired through experience, rather than inherent talent (Ericsson & Charness, 1994). In the present study, "expert" and "novice" are relative terms in that the novice may indeed be fairly experienced in reading poetic texts, but is less

experienced than the expert.

In studies of expertise in various domains the most obvious advantage that experts share is domain knowledge. Not only do they have a vast body of knowledge but it is highly structured and organized in memory. These deep structures of knowledge, or schemata, allow the expert to see large and meaningful patterns in problem situations. When given a problem, experts typically construct a mental representation which both defines and constrains the task, and they then rapidly solve the problem (Bereiter & Scardamalia, 1993; Chi, Glaser & Farr, 1988; Eriksson & Smith, 1991; Sternberg & Horvath, 1995).

The present study attempted to address four issues. The first research question related to whether, in a subjective and idiosyncratic area such as poetry reading, experts differ from novices in terms of their deep structure of knowledge in a manner similar to the study of expertise in other domains. In van Dijk and Kintsch's (1983) general theory of reading, two mental models are constructed during comprehension of a text: The model of the textbase, which is the mental representation of the propositional relations in that specific text, and the situation model, which is the cognitive representation of that area of domain knowledge which is relevant for the particular text. The situation model provides the knowledge for constructing a model of the textbase, hence research on non literary prose comprehension identifies differences between experts and novices in the knowledge-rich situation model (Scardamalia & Bereiter, 1991). The interest in the present study was whether this model also plays a dominant role in interpreting poetry. The operational definition of knowledge was drawn from studies on readers by Voss and colleagues (eg. Spilich, Vesonder, Chiesi & Voss, 1979; Voss, Greene, Post, & Penner, 1984) who found that informed readers have domain related patterns of organized information that they use to create a framework for easy process and recall of details and to anticipate what the text will say. Hence, to answer the first research question, protocols were examined for allusions to a body of organized information, evidence of a contextual framework, as well as verbalized anticipation of what is to come.

In examining how experts and novices make sense as they read poetry, there is a need to create an empirical link between the study of expertise and literary theory. The literary theorist, Jonathan Culler has proposed a structuralist model of poetic communication which is useful in providing hypotheses regarding the cognitive processes of making a poem coherent. Culler (1976) states that reading poetry is not a natural activity but is charged with artifice, that is, animated by a special set of expectations or conventions which the reader has assimilated and which are also part of the implicit knowledge of the author. The study of one poem facilitates the reading of the next and readers must have considerable experience in these conventions. For Culler (1976, p. 115), the primary expectations are the "rule of significance: read the

poem as expressing a significant attitude to some problem concerning man and/ or his relation to the universe;" the "convention of thematic unity" whereby "all the parts of the poem are related to create a unified, coherent whole;" and the "conventions of metaphorical coherence" which will be operationally defined in this study, as an expectation that "the basis of poetic expression is the metaphor" (Frye, 1978, p. 91). The second research aim was to test Culler's hypotheses. Do the novices show evidence of having assimilated Culler's primary conventions or expectations, that is, will they show evidence of a schematic structure for understanding the category of poetry as discourse in general?

The third question related to whether one may identify any interpretive operations or strategies as being productive in making a poem coherent. Bereiter and Bird (1985) and Johnston and Afflerbach (1985) identified strategies used by skilled readers in coping with comprehension difficulties in the reading of prose. Such strategies included pausing and formulating higher order summaries, backtracking when meaning breaks down, and so on. These and other strategies will be examined in terms of whether they are conducive to making sense of poetry.

And the fourth research question concerned whether, if novices are having greater difficulty constructing meaning in poetry, this will diminish their appreciation of the poems.

Method

Participants

There were 16 participants in all. The eight "Experts" were Ph.D. candidates in the English department at the University of Toronto, and the eight comparative "Novices" were either undergraduates in their first two years of English studies who had taken one course in "Reading poetry," or high school students in their last two years of an advanced private school with intensive poetry instruction. Two other experts were eliminated as they were familiar with one of the poems.

Materials

From the results of the pilot testing, two poems were chosen based on the following criteria: First, because they were fairly unknown poems, unlikely to have been read by many of the experts; secondly, they were difficult enough so that the expert's comprehension was not automatic and thus inaccessible to conscious articulation; thirdly, because this was a first step in assessing whether an expert-novice study of poetry could be productive and would parallel the findings of expert-novice studies in more knowledge-rich and less subjective domains, the poems were text constrained in that they involved an extended metaphor or conceit, and came from two important schools of poetry. One was a metaphysical poem, "On a drop of dew" by Andrew Marvell. The other was an Elizabethan love sonnet, "Lyke as a huntsman" by Edmund Spenser. Previous studies on text comprehension have been criticized for lack

of ecological validity in that they used artificially simplified texts (Kreuz & Roberts, 1993). In the present study, the poems, one fairly long, and one short, were presented in their entirety.

Procedure

Subjects were tested individually. They were given a short poem for practice in thinking aloud, with the following instructions: “I’d like you to think aloud as you try and make sense of each of the poems. Say everything that you are thinking. It’s just as if you are turning up the volume on your associations, inferences or any minor thoughts as they flit through your mind. Don’t censor anything.” They were then provided with each of the two target poems with no author’s name visible, presented individually on a sheet of paper in counterbalanced order. A pencil was provided and their verbalizations were tape recorded.

As advocated by Ericsson and Simon, 1991, probes were non specific prods such as “What does this poem suggest to you?” and, at moments of silence, reminders to think aloud. After it was clear that the participants had exhausted their responses, they were asked, “What is your overall sense of the poem?” Students were given as much time as they wanted, and the length of time that they spent on each poem was recorded.

Analysis

The protocols of the experts and novices were analyzed using the four research questions as a framework. This involved identifying the elements which were relevant to each of the research questions. For the first, second and fourth questions, predetermined categories of elements were imposed on the data and the fit was observed. In the third question, as will be discussed later, the protocols were examined fairly intuitively so that some of the elements were derived from the data. A coding scheme was developed and relative frequencies of salient events and strategies were obtained. Inter-rater reliabilities were established by an independent judge on a 37.5% subset of the protocols with 87% agreement obtained.

Results and Discussion

While quantitative results from both poems will be given below, in the interests of simplicity, illustrative examples will be restricted to the Metaphysical poem, “On a drop of dew” (presented in Appendix A). And as the poem may be difficult to grasp on a first reading, an interpretation of the sustained metaphor will be provided (an interpretation common to all the experts, but to only two of the novices in the study), despite the risk of this being poetically incorrect: In the poem, Marvell compares a drop of dew in a flower to the soul in the human body. In the first part of the poem he describes the mournful drop of dew, restless on the flower as it waits to be evaporated and can thereby return to the skies. The second half introduces the soul which, in the same way, is unhappy in the body and longs to return to heaven.

Research question 1. Structure of Knowledge

It was obvious from the protocols that, as in the study of expertise in other domains, the content and organization of knowledge played the major role in differentiating the experts from the novices.

[Insert Table 1 here]

As can be seen in Table 1, the experts had a rich deposit of schemata which enabled them fairly early to allude to other literary texts, to place the poem in a general context or category constrained by certain expectations pertinent to the genre of poem, and then to anticipate the content.

1. Allusions to other literary works

While only one novice alluded to another literary text and only on one of the poems, the experts seem to have an initial problem representation which effectively uses cues such as other works of literature. Expert One tries to understand the significance of the drop of dew:

I'm not sure of the meaning of it. He's putting the whole universe in a small thing. There's another poem about a flea, putting a large significance in a very simple image.

Similarly Expert Five thinks aloud:

(The drop of dew) reminds me of a poem by Blake (in) which he says something like 'to see the world in a grain of sand'.

And Expert Seven comments:

The dew shines *Like its own Tear*. Okay, the dew is reflecting the flower. I remember Donne's poem about the lover's tears reflecting, I think, the world.

Expert Seven's allusion to Donne helps her to categorize the poem and anticipate the content as described in the following two operations.

2. Contextualization

While not one novice was able to categorize "On a drop of dew" as a metaphysical poem, for the experts there was fairly rapid pattern recognition. All eight of the experts categorized both of the poems early in their reading. Expert Seven thought aloud:

So we have a perfect paradox, and I'm using "paradox" because I think this is a metaphysical poem, between the dewdrop and the flower.

And Expert Two says:

(In) the very first line, *See how the Orient Dew*, ..*Orient* is positioning this poem for me as a Renaissance seventeenth century poem, I think. That's a word that often comes up meaning something precious.

The experts were able to place the poem in a general context constrained by certain conventions pertinent to the genre of poem.

3. Anticipation

There is explicit anticipation of what is to come. For instance, Expert Two's categorization of the poem guides her responses to the text:

...what's going to happen later. It may become expanded and become a metaphor for the soul or something, or the world itself.

And Expert Six explicitly states her expectation:

It's a rhetorical turn and I bet the rest of the poem is going to be about describing the soul in the same language as the Orient dew.

The experts were rapidly able to construct a rich situation model (van Dijk & Kintsch, 1983), to relate their knowledge to the particular text, and to anticipate what was to come. The novices, on the other hand, did not have the organization of relevant schemata to allow effective processing. Most of the novices failed to grasp the extended metaphor in both poems and, as will be seen later, could then not find satisfaction in making the poems coherent.

Even for the two novices who felt that they had finally made sense of the poem, without the help of an organizing schema in memory it was a cumbersome and frustrating process. As an example, after reading the poem through, Novice One thinks aloud with little context to help her:

On a Drop of Dew. All this on a drop of dew. Let's see. (Reads lines 1-3) *See how the Orient Dew,/ Shed from the Bosom of the Morn/ Into the blowing roses..* Blowing? Blowing? Why are roses blowing? Blowing wind maybe. (Reads lines 4-8) *Yet careless of its Mansion new,/ For the clear Region where Ôt was born,/ Round in its self incloses,/ And in its little Globes Extent,/ Frames as it can its native Element.* Oh boy. (Reads these lines again) Okay. *For the clear Region where Ôt was born.* Born as in born or as in carried? *For the clear Region where Ôt was born,/ Round in its self incloses,/ And in its little Globes Extent.* Globes. Why capital g? *Frames as it can its native Element,/ How it the purple flow'r does slight.* Purple flower? Purple flower? Let's start again. (Reads from line 1 to 14) Let's take this one line at a time. (Begins again at line 1) *See how the Orient dew,* Orient dew. *On a Drop of Dew.* (Rereads lines 2 to 5) *For the clear Region.* Oh, it could be the sky. (Rereads lines 6 to 9) *Round in its self incloses,/ And in its little Globes Extent,/ Frames as it can its native Element,/ How it the purple flow'r does slight.* Why all of a sudden the purple flower does slight? I don't understand. Why not just continue with this globe of dew? Okay, let's go to the next part. Let it sink into our brain. (This protocol is continued in Appendix B.)

Expert Six, on the other hand, has a rich stock of schemata to frame the problem. Like Novice One she reads the poem through and then begins with lines 1 to 3. But here the similarities end:

Okay, the words *Orient*, *Dew*, *Bosom*, are all capitalized which is a kind of

archaic capitalization. It could be Emily Dickinson. It's at least nineteenth century. But I have the feeling that it's (a) late Renaissance or eighteenth century poem investigating a drop of dew. It looks like it could be one of the metaphysical poets. They took a remarkably small subject and made it absolutely pregnant with meaning in strange ways. It's on a drop of dew which is a remarkably small subject for a poem and it doesn't look, as far as I can see, as I'm skimming down the poem, um, it looks, I'm seeing words like *Manna* (line 37) so it's going to have a religious meaning, which would work with Donne and the metaphysical poets, George Herbert and Henry Vaughn. They were very interested in making religion personal and important, in poetry as meditation. (This protocol is continued in Appendix C.)

So Expert Six uses her knowledge to categorize the poem into genre and period. As she later expressed it:

I now have a portable context. I'm seeing an imaginary transparency which has Donne's name at the bottom with notes in the margin.

While the poem was actually by Donne's contemporary, she had a frame of reference, a structured and integrated representation that systematically cued her knowledge.

Novice One, on the other hand, noticed, for example, the capitalizations, and questioned, "why capital g?" but did not have the necessary knowledge from which to draw.

In most domains, such as chess and physics, the experts' greater knowledge results in the problem being recognized as a familiar kind, and there is rapid task solution. However, in the present study, similar to studies on expertise in writing (Scardamalia and Bereiter, 1991) and in the interpretation of historical texts (Wineburg, 1991b; in press), the experts spent much longer on each poem than the novices. Reading "On a Drop of Dew," novices spent an average of 19.75 minutes (range 8 to 33 minutes) and their protocols were an average of 1101.5 words (range 450 to 2200 words). Experts spent an average of 26.5 minutes (range 15 to 52 minutes) and their protocols were an average of 1719 words (range 966 to 3738 words). The experts quickly made sense of the poem, but that was only the starting point for them, for poetry is not a finite problem, but an open-ended task. They then proceeded to thoroughly mine their knowledge resources, to provide a deeper, richer exploration of the poetic significance, and of how the poet has effected meaning, and where the form echoes the content, and whether the conventions were adhered to or subverted.

The situation models of the novices, on the other hand, were limited. Five of the novices demonstrated early closure on at least one poem, not re-attempting alternate readings, with three of them expressing the need for outside help. The two novices who did make sense of the poem, acted as novices do in other domains,

deliberately constructing a representation of the task in a slow, step by step manner but not exploring the poem in any depth after they felt they had some grasp of what it meant. (An example of this can be seen in the protocol in Appendix B). This is similar to the findings of a study on expertise in interpreting historical documents (Rouet, Favart, Britt & Perfetti, 1997) where the novices were consumed by the task of building up a representation of the subject matter, whereas the experts could focus on higher level interpretations.

In attempting to construct a representation from knowledge that was limited in both content and organization, novices reading poetic texts show a further similarity to those reading historical texts, in the phenomenon of “presentism” (Wineburg, in press). Presentism takes the form of a default psychological propensity to select a context from one’s “contemporary social world.” In the current study this was particularly evident in the poem “Lyke as a huntsman,” in which Spenser compares the pursuit of a lover to a huntsman pursuing a deer in the forest. Five of the novices, missing the terms of the comparison, tried to assimilate the sense of the poem to their current life themes, such as “cruelty to animals,” or “judging a person not by looks but what they’re really like,” or trying to be “laidback.” In reading comprehension, words and phrases trigger spreading activation, and it is the structure of knowledge as well as higher interpretive processes (to be discussed later) which must constrain this automatic processing.

Research question 2. Conventions for understanding poetry as discourse

The results from the first research question showed that the novices lacked the knowledge of the particular conventions integral to the different periods of poetry. The second area of investigation looked at the novices’ expectations for the category of poetry as discourse in general. In Table 2 it is clear that the theoretical conventions or expectations hypothesized by Culler (1976) guided novice readings of both the poems in this study.

[Insert Table 2 here]

1. Rule of significance

This is the expectation that the writer is attempting to say something significant. This convention leads the reader to “attempt to read any brief descriptive lyric as a moment of epiphany,” a process of finding ways to grant a poem “significance and importance” (Culler, 1976, p. 175). For instance, Novice Four thinks aloud:

I’m not sure if the poet is writing this to, point out to the reader or perhaps to her or himself the importance of dew but, to make us realize the importance of everything in our lives, and how the smallest little thing that we take for granted should be considered, and we should take some time to, excuse the expression, stop and smell the roses.

There is an anticipation that the poet is intending to make a point, even if the point

hypothesized is ultimately unsatisfying to the novice.

2. *Thematic unity*

A second expectation hypothesized by Culler (1976) is that this point will function as a central unifying element to which all the puzzle pieces should fit. One “should prefer those (explanations) which best succeed in relating items to one another rather than offer separate and unrelated explanations” (p. 170). Novice Two, for instance, comments:

I don't know, some of the phrases don't, I'm sure they, like, fit together, but I can't see how they fit together.

And Novice Seven thinks aloud:

I can get many streams of ideas but I don't know how to tie them together. What is he telling me?

And later when Novice Seven begins to make the poem coherent:

It seems to be funnelling, like pinning each thing on to the previous thing, feeling a little more secure about what I have established. Each new thing I am taking and fitting in. I have some core, some parts fitting, I can tack on.

The novices clearly verbalize their expectation that a poem is supposed to cohere, and that their task is to discover a semantic level at which the propositions can be related to each other in order to create a unified whole.

3. *Metaphorical significance*

As the extended metaphors in this study were difficult for the novices, they were not always able to make them coherent, but most of the novices recognized the importance of metaphor in poetry, and searched for and/ or observed and attempted to make sense of the symbolic content of the poems. Novice Three, for example, comments:

It seems to me to equate dew with goodness and innocence and purity and part of the skies and part of the heavens.

She is attempting to unravel the terms of comparison, but she does not perceive the role of the soul as one of the terms and she later expresses dissatisfaction with her reading.

And Novice Seven thinks aloud:

The poem seems to be not really filled with metaphors and similes but pretty straightforward, when you first look at it.

While Novice Seven missed the extended simile, her comment clearly demonstrates the expectation that metaphor is a vehicle of poetic expression.

With regard to the experts, Chi et al. (1988) note that expertise is characterized by a fluid, automatic process, frequently inaccessible to conscious reflection. It is only when comprehension breaks down that consciousness is triggered (Johnston & Afflerbach, 1985; Wineburg, 1991a). In the present research, after examining expert

protocols from the pilot studies as well as the final study, it was decided that coding the experts' think-alouds for knowledge of Culler's conventions would not be productive. Although the experts were quick to ascertain the significant and important point being made in the poem, conscious anticipation that the poet was attempting to say something important, seemed too instinctive for explicit verbalization. Similarly, the experts' success at constructing thematic unity and metaphorical coherence was a clear indication of their understanding of poetry as discourse, but, unlike the novices, verbalizations regarding these conventions were minimal.

Research question 3. Interpretive operations or strategies

While in the previous research question the protocols were analyzed within the theoretical framework of Culler's literary criticism, in a domain as abstruse, idiosyncratic and unexplored as poetry, some of the more interesting data cannot be accounted for in terms of current theories of text processing. As Bereiter and Bird (1985), Flower and Hayes (1985), and Johnston and Afflerbach (1995) have all noted in their studies of skilled readers or writers, it may be less productive to systematically classify verbal reports, than to intuitively examine, catalogue and illustrate elements that facilitate success.

Protocols were examined for those operations which appeared to be useful in making sense of the poems. The list of elements was pared down according to the criteria that the operation differentiated the experts from the novices, and appeared in at least three expert or three novice protocols on *both* of the poems. While an operation may have been valuable in making sense of one of the two texts, the aim was to attempt to delineate more general operations. Elements rejected for pertaining to only one of the poems were the use of personification and movement as cues to meaning.

In the initial list, elements that were identified by previous researchers as integral to the comprehension of prose were also examined in making sense of poetry. However, in prose comprehension there is the expectation of clarity and understanding, whereas, because of the compressed nature of poetry, obscurity of meaning is anticipated. This may account for the lack of frequent evidence of many elements identified by previous researchers in prose comprehension. Examples of such omissions were "Reread previously comprehended part," "Pause to formulate higher-order summaries," "Paraphrase with inserted referent" and "Infer macroproposition" (Bereiter & Bird, 1985; Johnston & Afflerbach, 1985; Wineburg, 1991a).

From the elements in the initial coding list, the following general operations appeared to facilitate the experts' construction of meaning (See Table 3).

[Insert Table 3 here]

1. Structure as cue

The experts showed greater evidence of using cues in the structure of the poems. For instance, Expert Two ponders aloud:

The *Sun* ends the first part, *Till the warm Sun pitty it's Pain*, and ends the poem itself, *Into the glories of th'Almighty Sun*. Not that this tells me anything at the moment yet. I'm just looking for patterns.

A few of the novices also consciously focused on the endings of each of the poems, for instance, Novice Six:

I can't quite grasp what the entire meaning is. I'm looking at the last four lines because I know that in most poetry they're usually pretty important.

However, the experts, but none of the novices, also showed evidence of integrating structural elements with the poem's meaning in more subtle ways, focusing on, for instance, the relationship between the last line of each section (as in the example from the expert above); the break-up into grammatical units; how the arrangement by stanza corresponds to the sense; the division into lines and stanzas, and the resonance between structure and content as in a grouping of very short lines or a particularly long or circular sentence as in the following example from the protocol of Expert Two:

...and then at the end of the sentence the skies *exhale it back again*.. So the whole sentence isn't closed. It's circular. It starts at the sky and goes back to the sky. So the whole structure of the sentence and those thoughts are circular, like the dewdrop.

2. Binary Oppositions

There was the recognition by the experts that poets often use binary oppositions as important thematic devices. The experts displayed an effective strategy of looking for the meaning of the poem at the locus of the contradictions, juxtapositions or dialectic. Expert Seven comments:

One of the things that comes right away is the definite sense of polarity, of inside, outside, where elements are first established as something distinct and then at some point dissolve into each other.

Novice Eight, on the other hand, reading the same lines, observes the binary oppositions but rejects them as too confusing:

So you've got sort of an equation, or you've got a scale there, but it doesn't give me any sense of clarity. The one word seems to negate the other somehow, and it just jumbles everything for me. I don't like lines like these. They just jumble things.

Not aware of the significance of the binary oppositions in constructing meaning in literary texts, this novice then ignores these lines.

3. Word-play and language as cue to meaning

After reading the last line, *Into the Glories of th'Almighty Sun*, Expert Five comments:

The word, *Sun*, is probably a play on son, like Jesus, and it gets Christian overtones.

Compare this to Novice Five who does not recognize the pun:

Into the Glories of th'Almighty Sun. So it evaporates into the air when the sun comes out. (She rereads the line) So I don't know. That seems to have a happy connotation rather than the dew just going away, but I don't really know. I guess at the beginning it was just talking about when it's morning and then it gets into the day and the dew goes into the sun.

She misses the religious overtones and the whole extended comparison of the dew to the human soul.

4. *Rhythm and rhyme scheme cue to meaning*

The experts effectively used rhythm and rhyme as cues in their search for meaning: As Expert Three thinks aloud:

..gg..hh..ii.. So we see that, okay, wherever he's actually closing an argument he gives us a rhyming couplet to sort of slam the door shut so that we get the idea.

Only two of the novices even looked at the rhyme scheme, and that was only on one of the poems.

5. *Scanning for patterns*

Some of the experts used an effective technique of scanning the page for words that would help them find patterns of meaning or would enable them to contextualize and categorize the poem. As Expert Five says:

I'm scanning up and down looking for words that sort of pop off the page. *Manna* [line 37] is a word that pops off the page. *Orient* [line 1]. *Coy* [line 27]. Is there a pattern? (And she circles these words)

And Expert Six, in the long extract above says:

...as I'm skimming down the poem, um, it looks, I'm seeing words like *Manna* (line 37) so it's going to have a religious meaning...

In this way, the words in the text, that is, bottom up semantic information, result in the text being assigned to a category, where "assumptions about the canonical structure of the discourse, expectations, are generated from the top down about the plausible or possible global semantic content of subsequent episodes in the discourse" (van Dijk & Kintsch, 1983, p. 237). The novices on the other hand, did not have the easy access to such knowledge schemata to make use of this strategy.

6. *Pencil Representation*

Olson and Biolsi (1991) note that most expert behaviours make use of external aids, such as drawings or notes. In the present study, five of the experts, but none of the novices, made use of the pencil available to highlight words they wished to return to, or highlight patterns of structural elements, rhyme and rhythm (See Appendix A). It must

be noted that, while participants were provided with a pencil, they were not given specific instructions to use it. Novices may also not have made use of a pencil representation because these period poems were difficult: the novices did not appear to have an organizing schema in memory to enable them to either mentally or physically mark words or phrases which would situate the poem for them. Their energies were directed, with limited results, at merely constructing meaning, rather than in a richer exploration of how the poet has effected this meaning. It is possible that these novices would make use of visual representations when reading easier poems.

7. Title as Cue

While the above operations were evident in the protocols of the skilled, but not the unskilled readers, interestingly there was one strategy guiding meaning that was evident in the novice, but not the expert, protocols. This was the consideration of the title of the poem. Giving interpretive weight to the title was probably so automatic for the experts, that only one expert was sufficiently conscious of it to make an explicit reference.

In the example below, Novice Two struggled as she tried to incorrectly interpret the poem as being about a flower, having read the words *blowing roses* in line 3:

So its just this little flower. Even Ôthough its small it still feels the glory of this huge sun. It's just a minor flower but it has feelings of wonderment. (She glances at the title.) Oh no! It's *On a Drop of Dew*. That's what it's on.

A title is a structural signal that facilitates comprehension (van Dijk & Kintsch, 1983). In the above extract, it is clear that the title jolts Novice Two into recognizing her misinterpretation, and her revised representation has the drop of dew as the subject of the poem.

The above operations were those that facilitated the construction of meaning, and also differentiated the skilled from the unskilled readers. There were other very general comprehension strategies which appeared to facilitate understanding but were frequent in the protocols of both the novice and expert readers. These were: read the poem through, reread the poem systematically line by line, re-read more slowly, attend closely to the text, and paraphrase in simple terms.

Then there were other elements that appeared far more frequently in the novice protocols than those of the experts but did not, in these particular poems, appear to aid comprehension. The frequency of these elements reflected the greater difficulty of the novices in understanding abstruse poetry. For instance, the novices more frequently stated *that* they didn't understand, as well as specifically *what* they didn't understand. Novice Six ponders:

I don't understand the difference between the sun, the eternal day and the

dew. Somehow I'm not understanding what these represent, and...how the dew is being compared to those things.

This element can be seen frequently in the long extracts from the protocol of Novice One in Research Question 1 and Appendix B, for instance:

Into the blowing roses.. Blowing? Blowing? Why are roses blowing?
Blowing wind maybe.

The novices also more frequently backtracked, rereading from the beginning of a confusing segment. For example, Novice Six thinks aloud:

I'm going to go back again. (She rereads the same lines.) I'm just keeping reading it till something sticks out.

And the novices, but not the experts, set text aside and pressed on in the hope of later resolution. Novice Three reads:

Till the warm Sun pitty it's Pain,/And to the Skies exhale it back again. It goes back. I get a little bit lost. (She reads the next three line) I'm going to carry on reading down.

Hence when meaning broke down, novices expressed their lack of understanding and either reread the confusing segment or did the opposite, that is, set the lines aside and read on in the hope that the confusion would be resolved in later lines. While the experts did not frequently verbalize a lack of clarity, there was a section in "On a Drop of Dew" that was most obscure (the short lines, 27 - 36) and one may have expected that, when reading these particular lines, the experts would behave as the novices do. On the contrary, it seemed that at precisely these moments of difficulty, the experts' higher-level comprehension strategies were most in evidence. There was a focus on the binary oppositions, word play and language, shape and structure and rhythm as cues. Expert Two comments,

It's a series of short lines, and again I think the word choices are demonstrating something here. *Dark beneath, but bright above:/Here disdaining, there in Love,* This section seems to be structured in that there's here and there's there, there's the definite idea of above and below.....I get the feeling of this back and forth movement, words like "wound" "turns away" "round again" "here" "there". The active words, "moving" "upwards" "upwards bend." That section there is reinforcing the idea of movement.

And Expert Four thinks aloud:

....shorter lines. They look kind of punchy, an epigrammatic effect. The tempo of the poem is sped up in a kind of interesting fashion as if the poet is trying to carry forward very quickly the ideas he's trying to express.

Expert Six (as can be seen in Appendix C) interprets the obscurity as deliberate:

It's becoming mysterious, I guess, in the religious sense of mystery.

Okay, what was the subject? (She rereads these lines) This sounds like a riddle. It sounds like a nursery rhyme. It's a passage which is more pleased with language and with creating a mystery than it is with making itself clearly understood.

Compare this to Novice Five reading the same lines,

In how coy ... in how shy ... a Figure wound/Every way it turns away:/So the World excluding round, I don't know what the "world excluding round" means. *Yet receiving in the Day.* It means that the day is coming. *Dark beneath, but bright above:* Dark on the earth and bright in the sky. I don't know. *Here disdaining, there in Love,* I have no idea what love has to do with it. Maybe that's the whole point of it. I don't know. *How loose and easie hence to go:* Okay so maybe they're saying that maybe love is easy to go. It comes and goes. I don't know.

As distinct from the novices, it seems that when the experts cannot make clear sense of a passage, they move from trying to construct a representation of what the poem is saying to how the poet is saying it. As Expert Five comments as he reads these lines:

I'm swerving away from what the poem means and onto how the poem is meaning it.

There are two dimensions to expertise: First, specific domain experience which results in rapid activation of declarative knowledge (Ericsson & Smith, 1991; Wineburg, in press); This is illustrated in Research question 1, by the experts' extensive knowledge of period poetry. Secondly, (as illustrated in Research question 3), there is knowledge of the strategies involved in the general discipline which comes from training in the methods of the discipline (Rouet, Favart, Britt & Perfetti, 1997). At those times when there is not the automatic firing and spreading activation resulting from domain knowledge, but rather obscurity of meaning and confusion, the experts draw on their experience with the discipline's general strategies and interpretive operations. The novices, on the other hand, lacked both the declarative knowledge as well as the generalized knowledge of the methods of the discipline. When meaning broke down, most of the novices had access only to very general reading strategies experienced in the comprehension of prose.

Research question 4. Reader Satisfaction

Svensson (1987) noted that when approaching a "poem, which seems to be platitudinous or dealing with banalities, the reader reacts by asking himself if this is really the entire message...The text must refer to something over and beyond itself, that is, represent symbolic objects" (p. 479). This relates to two of Culler's conventions, first, the expectation that the poem is saying something significant about the human condition, and second that there will be metaphorical coherence. If the novices have

these expectations, but they are unfulfilled, the hypothesis in the present study was that there would be a sense of dissatisfaction.

Furthermore, the literary critic, Richards (1929) suggested that understanding the “plain sense” of a poem was a prerequisite for appreciating the poetic effects. One would therefore expect that the experts would express greater appreciation not only of the poem as a whole but of specific effects and imagery.

[Insert Table 4 here]

1. *Poem as a whole is pleasing*

As can be seen in Table 4, the experts were more likely to express appreciation of the poem. For instance, Expert One thinks aloud:

I like this poem. It’s saying the same thing basically over and over again, but always making it more intriguing. It’s just a wonderful exercise in using language.

And Expert Three comments:

The poem is incredibly beautiful...The circle imagery is reflecting the rhyme-scheme which reflects the name of the poem which is about the round perfection of God. It’s all so beautifully interconnected it makes me shiver.

2. *Specific image is pleasing or interesting*

The experts made far more spontaneous comments reflecting enjoyment of a specific image. Expert One reads:

Moving but on a point below,/ It all about does upwards bend. A very lovely image. You get the idea of all the lines tending upward from the point at which the spear rests on the surface.

And Expert Three reads:

Like its own Tear. Very moving, very simple. It sort of doesn’t intrude but it startles one a bit. It makes clear the mournfulness of the tone.

3. *Interpretive dissatisfaction*

The novices, on the other hand, very frequently expressed frustration. Novice Two says:

I don’t get it. I don’t know, like I feel that I’m missing some hidden things and if I knew them then I’d be able to, you know.

And Novice Five comments:

If I understood it I could go on and on Ôcos I always do that but I really don’t get it.

General Discussion

Frye asserts that, “(e)veryone who has seriously studied literature knows that the mental process involved is as coherent and progressive as the study of science. A precisely similar training of the mind takes place, and a similar sense of the unity of the

subject is built up” (1978, p. 10). And Culler comments that while Frye’s assertion may seem overstated, that is only because the processes which are so explicit in the teaching of science are implicit in the teaching of literary texts. The “study of one poem or novel facilitates the study of the next: one gains not only points of comparison but a sense of how to read” (Culler, 1976, p. 121).

The present study has demonstrated that in period poetry at the very least, knowledge is an important component of poetic communication, not only in the construction of meaning, but in the resultant pleasure experienced when reading a poem. In differentiating the experts from the novices in these poems, more salient than the operations and strategies that they used, was the rich structure of knowledge or schemata that the experts had acquired. Because many of the elements within the poems had been frequently experienced by the experts, multilevel schemata enabled them to recognize large and meaningful patterns, and determined the quality of the internal representation of the poem. In van Dijk and Kintsch’s (1983) model of text comprehension, different genres are associated with sets of probable or possible topics, and literary conventions function as organizers of relevant expectations. The experts in the present study seemed to have separate schemata for particular genres, forms or chronological groupings, and a rich structure of expectations guided them in making sense of the text. These schemata alerted the readers to what was likely to be important, both in terms of thematic content as well poetic form. The novices, on the other hand, did not possess a stock of schemata adequate to assimilate the text; their attempt to organize and interrelate the propositions in the poem did not then provide coherence, and the readers expressed their frustration when the poems could not be made sensible.

While the novices did not have familiarity with the conventions specific to the particular form or school or period of poetry, it was quite clear that they had internalized a general poetry schema, that is, the expectations for poetry as discourse. As Culler had predicted, they clearly anticipated that the poet was intending to express a significant attitude or make a point; that this point would function as a central unifying element to which all the propositions would relate; and that metaphor is important in poetic expression. These “expectations about poetry and ways of reading guide the interpretive process and impose severe limitations on the set of acceptable or plausible readings” (Culler, p. 27). So while the novices’ knowledge of the canonical structure of poetry as discourse enabled them to vocally anticipate what they needed to do, their frustration reflected their sense of shortcoming.

The expectations about poetry remind one of the schemata of which Gombrich (1961) writes in the production and appreciation in the visual arts. Gombrich, in demystifying the creative process of artists, writes of the “canon”, the mass of schemata in the form of geometric relationships which the painter must know in order to draw a plausible figure. It appears that the tool kit of the poet is also stocked with canonical

forms and themes, and like the artist, the poet often works according to Gombrich's "rhythm of schema and correction". The artist knows and constructs a schema before he can modify and mold it to the needs of the particular portrayal. The poet is writing by creating a distinctive instantiation of some core schema, and the reader's understanding may depend on having and retrieving this schema so that what the poet did with it can be appreciated. This relationship between reader and writer is echoed in the writings of Culler (1976) and Fish (1980) in which writers make use of the conventions in their writings, and the intended reader uses them to understand the text. Culler talks of a "contract between reader and writer" whereby "expectations about the forms of literary organization, implicit models of literary structures, practice in forming and testing hypotheses about literary works...guide(s) one in the perception and construction of relevant patterns" (p. 95). And Fish writes that the stability of interpretation among different readers is because interpretive communities are made up of those who "share interpretive strategies not for reading but for writing texts" (p. 14).

With regard to studies on expertise in general, Chi, Glaser and Far (1988) noted that the findings on expert characteristics across the domains that have been studied, are robust. The present study has extended these findings to the interpretation of poetry. The experienced readers of period poetry searched for and found meaningful patterns which demonstrated an extensive and deeply organized knowledge base. They rapidly formed a representation of the task that systematically cued their expectations and associations (Ericsson & Charness, 1994). As Sternberg and Horvath (1995) note in their study on expert teachers, the experts not only performed better than the novices but did so seemingly with less effort.

However, while the experts rapidly made sense of the poems, their protocols differed from those in most other studies on expertise in that they were longer than those of the novices. For the experts, finding a meaningful pattern was only the starting point from which to launch a higher level analysis. Wineburg (1991a; 1991b; in press) similarly found that protocols on novices reading historical texts were shorter and less elaborate than those of the expert historians. High level comprehension involves extensive interpretive strategies. As Wineburg states of one expert, "In some respects her expertise lay not in what she knew, but in what she was able to do when she did not know" (1991b, p. 84). Wineburg identifies heuristics or "syntactic knowledge" conducive to historical thinking in the same way as the interpretive strategies identified in the present study, may be seen as conducive to sense-making when reading difficult poetry. Strategies such as examining structure as a source of meaning, searching for meaning at the locus of binary oppositions, using wordplay, language, rhythm and rhyme as cues, are ways of thinking that enable sophisticated interpretation of poetic texts. While reading comprehension research has focused on general strategies of comprehension, such as rereading from the beginning of confusing

segments, paraphrasing, summarizing, backtracking, pressing on in the hope of later resolution (Johnston & Afflerbach, 1985; Bereiter & Bird, 1985), it has failed to examine higher level interpretive processes particular to specific texts. The present study begins to address these gaps within the domain of poetic literature.

One question for further investigation is whether students with even less experience in poetry reading than the relative “novices” in the present study, demonstrate Culler’s three basic expectations relevant to poetry as discourse. High school students at public schools have frequently been exposed only to the genre of realistic poetry, and a pilot study suggests that these students may not have the expectation that symbols and metaphors play a role in poetic expression. It might prove useful to compare students at those high schools where the poetry curriculum is limited, to the comparative novices in the present study. The notion of “expert” and “novice” is relative rather than static (Bereiter & Scardamalia, 1993). Indeed, all the comparative novices in the present study had taken at least one intensive course in reading poetry and might be categorized as comparative experts in another study in which they were also provided with less obscure poetry. Poetry differs from non literary prose in that the poet or author manipulates language and structural elements to achieve literary effects. But because the novices in the current study had so much difficulty just in making some sense of the poems, one was unable to determine their appreciation of the poetic significance in general. With less abstruse poems, we can explore changes in their strategies and operations, knowledge structure and poetic appreciation and one can attempt to examine the relationship between making sense of a poem and the appreciation of it. In this way the acquisition of expert performance could be empirically studied.

Another area for further research is whether poetry interpretation may differ from other expert studies in terms of the length of time needed to acquire the requisite expertise. Ericsson & Charness (1994) characterize expert performance as incremental increases in knowledge that result from the extended effects of experience over a period of a decade. However, it seems likely that if close readers of the present study were now presented with a metaphysical poem, they would make fair sense of the meaning, if not how the poet effected the meaning. Expertise in the cultural forms of literature is so tied to our experience with language and communication and to our general education, that the duration of training required may differ from the study of expertise in other domains.

In summary, the results from the interpretation of two period poems showed the following. First, that more experienced readers of poetry differed from less experienced readers in terms of their deep structure of knowledge in a manner similar to the study of expertise in other domains. Secondly, that the novices did, however, have well developed expectations for understanding the category of poetry as discourse in

general. Thirdly, that the experts employed productive interpretive strategies (such as using structure, rhythm, word play and rhyme scheme as cues, scanning to contextualize, looking for meaning at the locus of binary oppositions, and making use of visual representations to highlight structural elements), while the novices used these strategies minimally. And finally that the difficulty novices had in making the poems coherent, diminished their appreciation of the poems.

References

- Bereiter, C., & Bird, M. (1985). Use of thinking aloud in identification and teaching of reading comprehension strategies. Cognition and Instruction, 2(2), 131-156.
- Bereiter, C., & Scardamalia, M. (1993). Surpassing ourselves: An inquiry into the nature and implications of expertise. Chicago: Open Court.
- Chi, M. T., Glaser, R., & Farr, M. J. (1988). The nature of expertise. Hillsdale, NJ: Erlbaum.
- Culler, J. (1976). Structuralist Poetics: Structuralism, Linguistics and the Study of Literature. N.Y.: Cornell University Press.
- Dias, P. (1986). Researching response to poetry - Part 2: What happens when they read a poem. English Quarterly, 19, 9-21.
- Dias, P. (1987). Making sense of poetry: Patterns in the process. Ottawa: Canadian Council of Teachers of English.
- Dorfman, M. (1996). Evaluating the interpretive community: Evidence from expert and novice readers. Poetics, 23, 453-470.
- Eco, U. (1990). The Limits of Interpretation. Indianapolis: Indiana University Press.
- Ericsson, K.A., & Charness, N. (1994). Expert performance: Its structure and acquisition. American Psychologist, 49(8), 725-747.
- Ericsson, K.A., & Simon, H. (1991). Protocol analysis: Verbal reports as data. Cambridge, Mass: MIT Press.
- Ericsson, K.A. & Smith, J. (1991). Prospects and limits of the empirical study of expertise: an introduction. In K.A. Ericsson and J. Smith, (Eds.), Toward a general theory of expertise. Cambridge: Cambridge University Press.
- Fish, S. (1980). Is there a text in this class? London: Harvard University Press.
- Flower, L.S. & Hayes, J.R. (1985). The cognition of discovery: Defining a rhetorical problem. College Composition and Communication, 31, 21-32.
- Frye, N. (1978). Anatomy of Criticism. N.J: Princeton University Press.
- Gombrich, E. H. (1961). Art and illusion: A study in the psychology of pictorial representation. Kingsport, Tennessee: Kingsport Press.
- Graves, B., & Frederikson, C.H. (1991). Literary expertise in the description of a fictional narrative. Poetics, 20, 1-26.
- Harker, W.J. (1994). "Plain sense" and "poetic significance": Tenth-grade readers reading two poems. Poetics, 22, 199-218.
- Hoffstaedter, P. (1987). Poetic text processing and its empirical investigation. Poetics, 16, 75-91.
- Johnston, P. & Afflerbach, P. (1985). The process of constructing main ideas from text. Cognition and Instruction, 2, 207-232.
- Kintgen, E.R. (1983). The perception of poetry. Bloomington: Indiana University Press.

Kintgen, E.R. (1989). Studying the perception of poetry. In C.R. Cooper (Ed.), Researching response to literature and the teaching of literature. (pp. 129-150).

Kreuz, R.J., & Roberts, R.M. (1993). The empirical study of figurative language in literature. Poetics, 22, 151-169.

Martindale, C., & Dailey, A. (1995). I.A. Richards revisited: Do people agree in their interpretations of literature? Poetics, 23, 299-314.

Olson, J.R., & Biolsi, K.J. (1991). Techniques for representing expert knowledge. In K.A. Ericsson and J. Smith, (Eds.), Toward a general theory of expertise. Cambridge: Cambridge University Press.

Purves, A.C. (1989). That sunny dome: Those caves of ice. In C.R. Cooper (Ed.), Researching response to literature and the teaching of literature. (pp. 54-69). New Jersey: Ablex Publishers.

Richards, I.A., (1929). Practical criticism. New York: Harcourt, Brace.

Rosenblatt, L. M. (1978). The reader, the text, the poem. Carbondale, IL: Southern Illinois University Press.

Rosenblatt, L.M. (1989). The transactional theory of the literary work: implications for research. In C.R. Cooper (Ed.), Researching response to literature and the teaching of literature. (pp. 32-53). New Jersey: Ablex Publishers.

Rouet, J., Favart, M., Britt, M.A., & Perfetti, C.A. (1997). Studying and using multiple documents in history: Effects of discipline expertise. Cognition and Instruction, 15(1), 85-106.

Scardamalia, M., & Bereiter, C. (1991). Literate expertise. In K. A. Ericsson and J. Smith (Eds.), Toward a general theory of expertise. New York: Cambridge University Press.

Shimron, J. (1980). Psychological processes behind the comprehension of a poetic text. Instructional Science, 9, 43-66.

Silkey, S., & Purves, A.C. (1973). What happens when we read a poem. Journal of Aesthetic Education, 7, 63-72.

Spilich, G.J., Vesonder, G.T., Chiesi, H.L., & Voss, J.F. (1979). Text processing of domain-related information for individuals with high and low domain knowledge. Journal of Verbal Learning and Verbal Behavior, 18, 275-290.

Sternberg, R.J. and Horvath, J.A. (1995). A prototype view of expert teaching, Educational Researcher, 24, 9-17.

Svensson, C. (1987). The construction of poetic meaning, Poetics, 16, 471-503.

van Dijk, T.A., & Kintsch, W. (1983). Strategies of Discourse Comprehension, N.Y: Academic Press.

Viehoff, R. (1986). How to construct a literary poem? Poetics, 15, 287-306.

Voss, J.F., Greene, T.R., Post, T.A., & Penner, B.C. (1984). Problem solving skill in the social sciences. In G.H. Bower (Ed.), The psychology of learning and motivation,

(Vol. 18). New York: Academic Press.

Whitney, P., Budd, D., Bramucci, R.S., & Crane, R.S. (1995). On babies, bath water, and schemata: A reconsideration of top-down processes in comprehension. Discourse Processes, 20, 135-166.

Wineburg, S. (1991a). On the reading of historical texts: Notes on the breach between school and academy. American Educational Research Journal, 28, 495-519.

Wineburg, S. (1991b). Historical problem solving: A study of the cognitive processes used in the evaluation of documentary and pictorial evidence. Journal of Educational Psychology, 83, 73-87.

Wineburg, S. (in press). Reading Abraham Lincoln: An Expert/ Expert Study in the Interpretation of Historical Texts. Cognitive Science.

Appendix A

“On a Drop of Dew” by Andrew Marvell: An example of the highlighted words and structural elements made by an expert

Appendix B
Continuation of the protocol of Novice One

I'm trying to figure it out. *Restless it rouses and unsecure,/ Trembling lest it grow impure:/ Till the warm Sun pitty it's Pain,/ And to the Skies exhale it back again.* Let's take this one line at a time. *Restless it rouses and unsecure,* It's restless and insecure because of that. *Trembling lest it grow impure:* It's afraid of growing impure. *Till the warm Sun pitty it's Pain,* Okay, well its pitying its pain. *And to the Skies exhale it back again.* Oh no, I'm sunken. Okay, let's go to the next part. (After 18 more protocol lines in which much frustration is expressed, she rereads lines 4 to 20):

So the Soul, that Drop, that Ray.. So the soul, that Drop that Ray/ Of the clear Fountain of Eternal Day. I don't know what's going on with this soul. *On a Drop of Dew.* (Rereads lines 4 - 13) Okay. *How it the purple flow'r does slight.* Okay, so it is the dewdrop is slighting the purple flower. Okay. It's a little bit clear. *Scarce touching where it lyes.* Okay, so its gently lying upon this flower. *But gazing back upon the Skies.* Its looking back upon the skies. *Shines with a mournful Light.* Light, now this is a mournful light? Light is supposed to be happy. This one isn't. That's strange. *Like its own Tear.* So the dewdrop is at once a dewdrop that looks like a tear, and its own tear. *Ôcos it's mournful.* Mournful light. Light isn't mournful, at least it isn't to me. *Like its own Tear,/ Because so long divided from the Sphear.* The atmosphere. *Trembling lest it grow impure:* Okay, so this is how he's connecting it to the soul. *Till the warm Sun pitty it's Pain,/ And to the Skies exhale it back again./ So the Soul, that Drop, that Ray.* Okay, so is the soul that drop? The dew? *On a Drop of Dew. So the Soul, that Drop, that Ray.* So the soul. Does that mean also the soul? Or does it mean so the soul which is that drop? *So the Soul, that Drop, that Ray/ Of the clear Fountain of Eternal Day,/ Could it within the humane flow'r be seen,/ Remembring still its former height.* Okay, so the soul inside of the body, *the humane flow'r be seen,* is remembering its former height because maybe the flesh defiled it.

Shuns the sweet leaves and blossoms green;/ And, recollecting its own Light/ Does, in its pure and circling thoughts, express/ The greater Heaven in an Heaven less. Okay, so the soul in the body expresses the purity that it had from heaven which it doesn't have in a heaven less, which is here, heaven less. *So the Soul, that Drop, that Ray/ Of the clear Fountain of Eternal Day,/ Could it within the humane flow'r be seen,/ Remembring still its former height.* Okay, so the soul inside of the body, *the humane flow'r be seen.* Okay. *Remembring still its former height.* It's remembering still its

dignity, I guess. *Shuns the sweet leaves and blossoms green;* What does that mean? *And, recollecting its own Light.* Remembering its own light. *Shuns the sweet leaves and blossoms green;/ And, recollecting its own Light,/ Does, in its pure and circling thoughts, express/ The greater Heaven in an Heaven less.* Okay, it expresses its pure and circling thoughts.

So the Soul, that Drop, that Ray. I don't know what's going on with this soul. Drop of Dew. *So the soul.* Not sure if this is comparing it, *So the soul* as in: as the soul or like the soul, or *So the soul, that Drop that Ray.* *So the soul*, like a drop of dew, its doing the same thing. It's within itself, within the body. Okay, its remembering its former height, and it, too, wants to go back to where it came from: *Into the Glories of th'Almighty Sun.*

Remembring still its former height,/ Shuns the sweet leaves and blossoms green; Okay, it doesn't like to be on this earth. It wants to go back to where it came from. *And, recollecting its own Light,/ Does, in its pure and circling thoughts, express/ The greater Heaven in an Heaven less.* Okay, this poem, I think, seems to think that souls are made in heaven, a bunch of souls, and God just puts them into your body.

I think it's just talking about the soul like a dewdrop, a comparison with the dewdrop. It wants to go back into the atmosphere. *So the soul*, that's in the body, shuns everything around it and wants to return back to where it came from.

Appendix C
Continuation of the protocol of Expert Six

I'm going to read more here. (Reads lines 1 to 6). Okay, this is a drop of dew on a rose in a the field in morning. Its *Orient Dew*. I assume because it's precious as an Orient gem. The Orient is the place where three kings came with gold presents. The Orient is a place of mystery and riches and wealth.

After 16 more protocol lines she reads from line 15:

Trembling lest it grow impure:/ Till the warm Sun pitty it's Pain,/ And to the Skies exhale it back again. Okay, this is the water cycle, the dew coming onto the flower and the warm sun exhales it back again to the sky. It's an interesting word, *exhale*. We'd probably use evaporate. Exhale is breathing which is a much more organic sounding word. It sounds like the sun is a body breathing on the rose. Okay, *So the Soul, that Drop, that Ray/ Of the clear Fountain of Eternal Day,/ Could it within the humane flow'r be seen,/ Remembring still its former height,/ Shuns the sweet leaves and blossoms green;/ And, recollecting its own Light,* Okay, so this is an emblem poem, that is, taking an object in the natural world and making it an emblem of abstract or spiritual significance. The drop of dew is an emblem of the human soul. We've established an image of dew and now we're talking about, *So the soul*. In the same way, the soul. It's a rhetorical turn and I bet the rest of the poem is going to be about describing the soul in the same language as the Orient dew. And it does sound as if it's one of those metaphysical poets, one of those churchman poets who would have learnt rhetorical structures to set up a structure of an emblem in their sermon telling a parable. The mournful drop of dew. *Trembling lest it grow impure,* and waiting for *the warm Sun pitty it's Pain,/ And to the Skies exhale it back again.* And the churchman, the context of his sermon, elaborating the analogy with the human soul. So its clicking into place.

(After 7 protocol lines)

Where was I? (line 21) *Could it within the humane flow'r be seen,/ "it" is the soul, Shuns the sweet leaves and blossoms green;/ And, recollecting its own Light,/ Does, in its pure and circling thoughts, express/ The greater Heaven in an Heaven less.* Okay, the words *pure and circling thoughts*, in some ways this is a pure and circling poem. I bet if I went back through the language it kind of implies a circular motion. And the rhetorical structure, we're doing water cycles which are circles, and we're doing emblems which are circles. We're going through the same story of the drop of dew again with the human soul so there are many circles and that seems to be a gesture to the structure of the lines: *in its pure and circling thoughts,* that's a nice line. *Does, in its pure and circling thoughts, express/ The greater Heaven in an*

Heaven less. That's a very Shakespearian kind of language. *The greater Heaven in an Heaven less.* The paradox. The fact that it's a greater heaven and a lesser heaven. That's a way of saying things that Shakespeare would have liked.

In how coy a Figure wound,/ Every way it turns away:/ So the World excluding round,/ Yet receiving in the Day./ Dark beneath, but bright above:/ Here disdain, there in Love,/ How loose and easie hence to go:/ How girt and ready to ascend./ Moving but on a point below,/ It all about does upwards bend. Okay this is more circled than circles of the...it's becoming more and more obscure. It's becoming mysterious, I guess, in the religious sense of mystery. Okay, what was the subject? (She rereads these lines) This sounds like a riddle. It sounds like a nursery rhyme. It's a passage which is more pleased with language and with creating a mystery than it is with making itself clearly understood.

Such did the Manna's sacred Dew destil;/ White, and intire, though congeal'd and chill./ Congeal'd on Earth: but does, dissolving, run/ Into the Glories of th'Almighty Sun. Okay, we're bringing a different allusion into dew. The *Manna* is a biblical allusion. It was food that fell from heaven if I remember the picture in my "Child's garden of bible stories." It's food that God sent from heaven to feed the wandering Israelites in the desert. So it comes from heaven like dew. Dew is sacred because it is a gift from God and the soul is sacred. *White, and intire, though congeal'd and chill.* The word *Congeal'd* is kind of a disgusting word now and I imagine it was kind of a disgusting word then. And *Congeal'd* means, I think, congealed into a human body, which *does, dissolving, run/ Into the Glories of th'Almighty Sun.* Okay, well the *Sun* is obviously the son of God and that's the pun there. It's a poem about seeing an emblem of human mystery. I guess (it is) along the religious idea of the world being a book where you can read sermons in stones and you can interpret everything in the world as being part of God's revelation to mankind.