CROSS-CULTURAL COMMUNICATION
Vol. **6**, No. **3**, **2010**, pp. 83-96

ISSN 1712-8358
www.cscanada.net
www.cscanada.org

'Below the Level of the Visible':

The Mathematics of Space in Jane Smiley's *A Thousand Acres*

«SOUS LE NIVEAU DES VISIBLES»:

LES MATHEMATIQUES DE L'ESPACE DANS *MILLE ACRES* DE JANE SMILEY

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Abstract: This paper examines Jane Smiley's presentation of space within a distinctive scientific discourse. It argues that mathematics and other sciences are recruited in *A Thousand Acres* in a manner that turns literary language into a scientific analysis of the land and the people and by which ekphrasis poses as a distinctive therapeutic mechanism of recall since, after all, the whole narrative is presented as an act of remembering a past along with a specific space. The study also underlines how Smiley questions the validity of science, mainly mathematics. Nonetheless, it concludes that by recruiting the sciences within her ekphrastic style, Smiley underscores that cognitive ekphrastic literature is the domain where the contested sciences and humanities might be allied, and where the sciences might overcome their abstractness and numbness and the humanities achieve a rational background.
Keywords: Jane Smiley; *A Thousand Acres*; Scientific Literature; Ekphrasis; Spatial Literature; American novel

Resumé: Ce document examine la présentation de l'espace de Jane Smiley dans un discours scientifique distinctif. Il fait valoir que les mathématiques et d'autres sciences ont été utilisées dans *Mille Acres* d'une manière qui transforme la langue littéraire en analyse scientifique de terre et de peuple , par laquelle l'ekphrasis se pose comme un mécanisme thérapeutique distinctif de rappel, puisque après tout, tout le récit est présenté comme un acte de souvenir d'un passé avec un espace spécifique. L'étude souligne également comment Smiley questionne sur la validité de la science, surtout des mathématiques. Néanmoins, il conclut que, en utilisant les sciences dans un style ekphrastique, Smiley souligne que la littérature cognitive ekphrastique est le domaine où les sciences contestées et les sciences humaines pouvaient devenir des alliés, et que les sciences pourraient surmonter leurs abstractions et l'engourdissement et les sciences humaines pourraient obtenir un fond rationnelle.
Mots-clés: Jane Smiley, *Mille Acres*, littérature scientifique, ekphrasis, aménagement littérature spatiale, roman américain.

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> The body repeats the landscape. They are the source of each other and create each other. We are marked by the seasonal body of earth, by the terrible migrations of people, *by the swift turn of a century, verging on change never before experienced on this greening planet*. (Emphasis added)[2]

The superficial significance of these lines has so far been the main preoccupation for Smiley's critics who mostly emphasize the symbolic relation between female body and land (Schiff 1998a; Keppel; Strehle; Kellman; Carden; Fuller).[3] In Smiley's borrowed lines, changes in nature are closely allied to social and biological transformation; time (seasonal) and space (landscape), along with the human body and social interaction are to be indivisibly perceived to account for psychological and social phenomenon. Here lies a significant aspect overlooked in critical reception of Smiley's style: the observational scientific attitude which targets the relation between the world of nature, the individual, and the consequent reflections of that on personal, social, and/or communal interaction. Smiley underscores the change in time, the verge into a new age with phenomena never experienced before and which consequently need be accounted for in a new manner, implicitly suggesting the inadequacy of current science or scientific findings and attitudes to provide the necessary explanation. She might also be seeking an alliance between the sciences and social sciences.

Right from the very beginning, in the mathematical title (thousand acres), Smiley challenges readers and critics with her numbers, diameters, dimensions, limits and, above all, a distinctive perception of space, overloaded with a sense that transcends the superficial idea of the width and breadth of a farm. Going further than all others in performing the rewriting of precursors, by her widely acknowledged revision of Shakespeare (Schiff 1998a, 1992; Keppel; Strehle; Kellman; Carden; Fuller; Carlson; Duffy), a writer like Smiley can not be taken at face value nor in simplified terms, and her statements and words are to be read deeper than they have superficially been.[4] Her 'thousand acres' is not a simple phrase about the spatial size of a ranch. It is much more *mathematical* than that. And reading further into the novel of muddled and implicit equations and laboratory experiments, one finds more of the sciences: mathematics, physics, biology, chemistry, geology, geography, topography, and ecology. The scientific discourse is dominant in the novel. Smiley seems to assume the role of the scientist who analyses what the usual individual thinks familiar:

> I was always aware, I think, of the water in the soil, the way it travels from particle to particle, molecules adhering, clustering, evaporating, heating, cooling, freezing, rising upward to the surface and fogging the cool air or sinking downward, dissolving this nutrient and that, quick in everything it does, endlessly working and flowing, a river sometimes, a lake sometimes… but the sea is still beneath our feet, and we walk on it. (16)

She needs the qualities of water, with which she identifies herself, to be able to perform her journey to the underground. But what appears as a scientific venture hides underneath a psychological allegory,

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[2]. This is the epigraph in *A Thousand Acres*. Smiley borrows these lines from Meridel Le Sueur's autobiographical essay "The Ancient People and the Newly Come." *A Thousand Acres* is Smiley's seventh book of fiction, winner of Pulitzer Prize of 1992 and National Book Critics Circle Award. Reviewers and the Pulitzer Prize committee highly appreciated the novel's parallels with and departures from Shakespeare's text (Strehle 212). Further references to the novel will be cited parenthetically.

[3]. Annette Colodny argued that American literature has traceable pervasive tropes that compare the landscape in the American vision of exploration and investment of landscape with female body. In fact, these gendered perceptions have been the center of a great deal of feminist research (see, for example, Colodny 1975; Colodny 1984; Baym; Kirby; Fink 1986; Fink 1992).

* Received on May 15, 2010; accepted on July 25, 2010

[4]. It has been argued that much of twentieth-century literature revises the past, an attitude called the 'mythical method', which highlights twentieth-century writers' rewritings of earlier literature, tales, and myths, as in the case of Yeats, Lawrence, Faulkner, Mann, Anne Sexton, John Updike, and many others (Schiff 1998, 367); and such *zeitgeist* has been the concern of numerous research (White, Zipes, Vickery, Gresset and Polk, O'Donnell and Davis, Morgan, Greiner, Schiff 1992, Schiff 1998b).

particularly that water imagery has been widely acknowledged as an archetypal reference to the unconscious (Grimal; Jung; Natoli; Wright). Her scientific wandering is replete with an individual investigation of personal and communal significance:

> Tile 'drew' the water, warmed the soil, and made it easy to work… as I got older, 'tile' became long snakes of plastic tubing), but for years, I imagined a floor beneath the topsoil, checkered aqua and yellow like the floor in the girls' bathroom at the elementary school, a hard shiny floor you could not sink beneath, better than a trust fund, more reliable than crop insurance, a farmer's best patrimony. (15)

This is a scientific way of looking at things which then shifts to a subjective (feminist) interpretation, coupling the sciences and social sciences, emphasizing the significant relation between the two. Such is a lesson in geography or agriculture, an in depth analysis of a natural phenomena in connection with social behavior.[5]

Aided with a scientific vision, Smiley seeks entrance inside the human body while accompanying food:

> Mary turned pink, but smiled bravely. 'people don't know it's not what you eat, but the order you eat it in that counts'
> 'Counts for what?'
> 'Digestibility, efficient use of nutrients, toxin shedding'
> 'you are not fat.'
> Indeed he wasn't. He said, 'Actually, I don't even think about fat any more. I was obsessed with that for years, but that's very low-level body awareness.' (30)

Thinking about fat and calories is actually a symptom of the problem, not a way to find a solution:

> 'what is the solution?'
> 'my main effort now is to be a ware of toxins and try to shed them as regularly as possible. I urinate twelve or twenty times a day, now. I sweat freely. I keep a careful eye on my bowel movements.' He said this utterly without embarrassment. 'Knowing that organizes everything. For example, when I used to think about exercise as aerobic conditioning or muscle strengthening, I found it very difficult to motivate myself to do it. Now I think of it as a way to move fluids, to cleanse cells and bathe them afresh, and I *want* to exercise. If I don't exercise, I can feel myself getting a little crazy from the toxins in my brain.'
> I said, 'How so?'
> 'oh, you know. Negative thoughts. Worries about things at the bank. Failure of hope. That kind of thing. I used to have that all the time. I can spot someone in the toxic overload stage a mile away.' (30)

This discussion of nutrition and food comes within a scientific discourse. However, this not only is a lesson on the science of nutrition and body shaping, but also an attempt to account for psychological states, within logical terminology and methodology, underscoring hence how vision changes by constant questioning (why and how).

Consequently, the sciences Smiley recruits are assigned a humane vocation to supersede their numb abstractness, as she investigates aspects of human life in their light. She is giving "Another lesson in that life-long course of study about the tricks of appearance" (59). Such a revelation is illuminating if one can see beyond its tricky appearance. 'Lesson' and 'study' are emblematic of education and science; 'appearance', whether of a person or a scene, represents the visual, descriptive and hence ekphrastic; 'life-long' suggests the continuities and discontinuities in the sciences and methodologies of reading nature and life, announcing a new method. Altogether, Smiley might be offering a genuine analytical presentation of the world around her, an analysis that transcends appearance to essence, the ultimate goal being the understanding of life at large. As seen in the epigraph, she studies the relation between man and

[5]. John Walter highlighted Smiley's environmental and farming awareness which might be added to her scientific vision; see also Bakerman.

earth, a reading based on observational and analytical methods, the two brining a distinctively descriptive style, where the earth is read as a human, now having a body ('body of earth') and, as outlined later, a face. Such a technique is essentially related to ekphrasis whereby reading and writing the visual and reading the consequently scriptural/sculptural written version render distinct pictorial literature in which the disclosed is brought live, to be experienced first hand and its comprehension be thus facilitated. That is, Smiley's novel adopts characteristic reading/writing notions.

To recruit help in this regard, one may refer to Walter Benjamin's differentiation between 'reading' and 'copying' a text. He emphasized what he called "the power of the road", while distinguishing the "one who is walking along it [the road] from when one is flying over it by airplane," which he brought as an analogy for the difference between reading a text and copying it: "the power of a text is different when it is read from when it is copied out" (Benjamin 50). In fact, Benjamin's distinctions pertain to two types of vision, central in descriptive writing. He argues that the airplane passenger's knowledge of the road is lacking compared to that of the one who walks it; the airplane passenger can only see from above how the road moves through the landscape, while the one who walks it on foot "learns of the power it commands… Only the copied text thus commands the soul of him *who is copied with it*, whereas the mere reader never discovers the new aspects of his inner self that are opened by the text" (emphasis added, Benjamin 50). Interestingly, Benjamin alludes to the walker's ability to (re-)live the experience ('who is copied with it'). For him, 'copying' is a distinctive type of reading which involves a sense of re-writing the text; that is, reliving what it writes. Writing a scene in the manner of re-living the experience of it entails that reading a skillfully written ekphrastic text may render similar results to a vigilant reader.

Thus, this paper examines Smiley's presentation of space within a distinctive scientific discourse. It argues that mathematics and other sciences are all recruited in the novel in a manner that turns literary language into a scientific analysis of the land and the people. The study investigates how Smiley questions the validity of science, mainly mathematics, as she produces a cognitive type of ekphrasis where the book of Nature is turned into a book of knowledge. That is, this paper traces Smiley's presentation of space as field of a humane usage of the sciences, highlighting the cognitive essence of literary pictorialism as a distinctive mechanism of memory since, after all, the whole narrative is presented as an act of remembering a past along with a specific space. That past is ekphrastically recalled live.

Smiley constantly links memory to science and mathematics, remembrance featuring in light of numbers, rendering hence a fragmented recall:

> But even though I felt her presence, I also felt the habitual fruitlessness of thinking about her. Her images, partly memories of her, partly memories of photos I had seen of her, yielded no new answers to old mysteries. For a moment I toyed with a magic solution – that Rose, in herself, in her reincarnation of our mother, would speak, or act out, the answers. All I had to do was be mindful of the relationship between them (mindful in secret, in a way no one else could be mindful), and gather up the answers, glean the apparently harvested field of overlooked bits… I could become her biographer, be drawn in her life. (100-101)

This is a scientific methodology of gathering observations from different sources ('partly memories of her, partly memories of photos…'). Having failed to yield the sought explanation ('no new answers to old mysteries'), the scientist, released from tricky appearances, then pays particular attention to other observations ignored in earlier accounts ('harvested field of overlooked bits') before acquiring the key data by which he/she can offer a rationalization, having been granted entrance into the muddled ('be drawn into her life'). The suggestion of fragments that are partly/partly recalled/harvested implicitly hints at a mathematical approach of gathering a number of those bits and pieces. (The significant reference to photos is to be examined in due course).

Remembering her father raping her, a crime repeated several times, Ginny can recall only one memory of it: "One thing Daddy took from me when he came into my room at night was the memory of my body. I have only one memory of my teenaged body" (302). She reinstates this: "But I never remembered penetration or pain, or even his hands on my body, and I never sorted out how many times there were. I remember my strategy, which had been desperate limp inertia" (302-3). For her, it is not a

matter of how many times it happened but rather the fact that it actually happened; she has trouble with numbers but still finds it sufficient to recall one of those numerous cases; this might be related to a major attribute of mathematics according to those who questioned its value, arguing that the number one is mathematics' main achievement and all other numbers are mere repetitions of the number *one*.[6] The novel seems to emphasize conservative points regarding the relevance of mathematics, which is perhaps related to mathematics having performed, or been trapped by, the tricks of appearance. In order to forget those many times when she was sexually exploited by her father: "I looked away from it, and made myself concentrate on some math problems to put myself to sleep" (302). Along with her aforementioned strategy of physical indolence or apathy, she resorts to mathematics as a distraction from the main issue, a cathartic procedure based on distancing the painful experience from the mind, whereby the magnitude of mathematics is narrowed down. The novel's recourse to mathematics might hence be considered an equal act of distraction from the pain of the details it narrates, narration itself being cathartic. As Lisa Suhair Majaj asserted, psychological discharge can be achieved through fiction whereby "fear could be narrated and through narration transformed" (48). Mathematical narration turns out to be a tricky presentation of appearance away from painful experience, a description rather than analysis, or even a superficial analysis of the external away from the intrinsic psychological depth. Rather than an in-depth reckoning of psychological significance, mathematics is an escapist strategy serving as an act of superficially compartmentalizing the oppressor or oppressing memory: "what I remembered of Daddy did not get into full figure, but always remained fragments of sound and smell and presence" (303). Nonetheless, the fragments are interlinked by association: "Let us say that each vanished person left me something, and that I feel my inheritance when I am reminded of one of them" (398). Here is another possible connection with mathematics being an *intuition* where the recurrent phenomena is no more than a repetition of the first which constitutes the nodal point of remembrance and which at the same time alleviates the pain by transferring the repeated experience to 'non-perceptual' state.[7]

This significant first and primary occurrence ends up explaining the whole pattern, providing a resolution to the main question, a matter stated in the last words of the novel:

> And when I remember that world, I remember my dead young self, who left me something, too, which is her canning jar of poisoned sausage and the ability it confers, of remembering what you can't imagine. I can't say that I forgive my father, but now I can imagine what he probably chose never to remember – the goad of an unthinkable urge, pricking him, pressing him, wrapping him in an impenetrable fog of self that must have seemed, when he wandered around the house late at night after working and drinking, like the very darkness. *This is the gleaming obsidian shard I safeguard above all the others*. (emphasis added, 399)

Thus, one main point of reference provides the key to resolution. This is a mathematical parallel; the figuring out of an undetermined variable (width, breadth, size) constitutes a major step in resolving a mathematical equation, an attitude that Smiley follows elsewhere in the novel, as will be shown later. Above all, it is evident that she couples mathematics and memory, and therefore some explanation of the relation between reality and mathematics becomes essential.

Numbers are creations of the human mind to give order to ourselves and the world around us but this

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[6]. In addition to undermining mathematics as a science the overall achievements of which are no more than repetitions or manifestations of the number one, some also cite the illogic of the concept of 'infinity' which undermines mathematics validity because it does not change whether a number is added to it or subtracted from it. In this context, mathematics appears as reasoning about idealizations which, to use Aristotle's discourse, pertains to the logic of mathematics, principles used to demonstrate theorems, and definitions (which do not suppose the defined actually exist); that is, ideal conception of infinity rather than potential infinity (Korner 73; see also Bunch; Hatcher).

[7]. Here one may refer to intuitionists like L. Brouwer who assigned the subject matter of mathematics to be intuited non-perceptual objects and constructions arguing that mathematics begins with a languageless activity of the mind which moves on from one thing to another but keeps a memory of the first as the empty form of a common substratum of all such moves. That is, mathematics is reasoning about abstracts (Brouwer).

is not a matter of consensus for philosophers and mathematicians. Plato, for instance, believed in the eternal and precise Forms or Ideas that are independent of perception, including numbers and related geometrical objects such as circles, lines, and points which are consequently mathematical objects that are instances of ideal Forms corresponding to reason rather than the senses, an ideal association of mathematics with ultimate truth. For him, the ideal forms such as One and Two are more important than such formations as 'one chair' and 'two chairs', these last being specific instances of ideal forms. On the other hand, Aristotle disagreed and argued that Forms are not remote entities but are rather inherent in the objects of the real world, particularly that he differentiated between mathematical logic, which works on the theoretical level regardless of the real existence of that which is theorized, and mathematical hypotheses, which presuppose the existence of that which is examined (Korner). Aristotle, in fact, paved the way for applied mathematics which, in case of such construction as 'two chairs', simultaneously thought of ideal Form and empirical matter, different from Plato's distinction between pure Forms and their earthly copies. In this sense, Smiley might be seen at both ends; she presents mathematics as a mechanism for dealing with reality away from painful sensation and, on the other hand, 'thousand acres' perhaps represents Aristotle's and applied mathematics' connection between ideal Form and empirical matter.

Social constructivists, however, considered the significance of mathematics lie in its practice rather than its being an exercise in logic, as Plato thought of it (Barrow 274-76). Morris Kline, for example, argued that nature presents itself to man as an organic whole with concrete matters that should be united in any analysis to form a consistent and satisfactory synthesis of knowledge. In what has been labeled the 'Embodied Mind Theory', mathematics was considered an inherent bodily process (Lakoff and Núñez). Along with this understanding, Jungian psychoanalysis perceived numbers as archetypes, psychological symbols lurking in the (collective) unconscious. That is, Smiley's 'thousand acres' might be interpreted in the light of archetypal theory, to account for the link between the spatial and numerical, the land and the vastness represented by the number 'thousand' which, though suggests immensity, may also render fragmentation. In the end, Smiley's novel might be seen in the light of Aristotelian and applied mathematics, literature –and mathematics—being a creative intellectual manner of organizing and comprehending aspects of human life whereas Smiley's perception of memory within the novel is more of the platonic conception.

Nonetheless, there are a few sciences employed in the novel, raising a question about Smiley's overall recruitment of a scientific discourse. To the ancients, *scientia* meant knowledge and experience; that is, wisdom. Scientists are usually considered realists who distinguish between, on the one hand, the external world of reality, the whole cosmos including even man's body and, on the other, the individual's internal feelings and thoughts that should be understood and explained in relation to external reality in which they seek to find testimony to their findings (Richards; Matthews; Stuart Brown, John Fauvel and Ruth Finnegan). They work with laws of substance and laws of function, the latter matters of cause and effect, both being analytical and descriptive with a claim to a precision that is considered lacking in social sciences. Here lies a significant issue. Scientists form hypotheses, tentative theories, and formulate theories which are both subject to doubt and refutation. Scientific laws are statements about material states; descriptions based on employing human senses to gather and analyze observations and formulate a logical law, a precise formulation that may help further prediction, that which Aristotle called a generalization (Briggs and Peat). But such attempted induction is relatedly problematic. For instance, the sorting, testing, and reporting of observations might be done according to the scientist's purpose and individual measures of relevance (Richards, 11-2; Bunch 148-5; see also Matthews). Even when an established scientific theory governs the new scientific investigation, there is the risk of what Karl Popper called the 'falsifiability thesis', by which constant testing of theories is conducted to verify or refute those theories and hence there is a risk of falling under the pressure of a theory that is itself weak or refutable (2003, Chapter 1; see also Popper 1959 and Popper 1983). Foregrounded laws or generalizations are thus constraining and when surprising experiences take place, as Smiley's epigraph puts it straightforwardly, such generalizations may stand short of explaining what was never included in the initial observations that lead to the formulation of that generalized law; what if the world moves into a flux of surprising phenomena? Hence Thomas Kuhn and Paul Feyerabend asserted that despite its prestige and practical successes, science is a myth just like art, literature, and psychoanalysis, an assertion that is essential for the relativists who believe that every person has an

individual reality or concept of truth (Kuhn 1962 and 1977; Feyerabend; see also Hesse; Richards, 12-13, 198-201). In fact, science is not necessarily like art and literature, by which Kuhn and Feyerabend seem to inferiorize both domains. Despite the difference in the two fields, Smiley seems to share in this discussion where she perhaps attempts to overcome the contesting strain and, instead, creates a scientific literature which joins the two endeavors for the sake of understanding man and life in the never ending search for truth and understanding.

If Smiley is revising, remembering, and/or rewriting the past whether of the family or of art itself (of Shakespeare in particular), she is definitely performing a cognitive act which requires a scientific methodology that investigates the past (truth, model, law, theme, style) or places that past under thorough cognitive examination, giving it the time it needs to be re-viewed emotionally, intellectually, and intuitively as a space, before reaching a final (revised) or even a new version of it. The narrative recalls what happened within the space of this ranch over a specific period of time. While the mathematical spatial phrase of the title designates that space, it nonetheless stands short of telling what happened there. It merely suggests the physical context or spatial boarders of the action (to be) recalled and narrated. The title seems thus some sort of what Bettine Menke considered being like 'quotation marks', just like the frame of a picture, in both cases generating the after-life of the quoted or framed (qtd. in Haverkamp 275). However, within the quotation marks or the frame of the picture, the pages of the narrative do not present static actions and characters. To the contrary, characters are actively involved in action along with the sensual, emotional, and intellectual dimensions. Consequently, there needs to be an elaboration on the role of time in ekphrastic literature along with the latter's difference from photography.

To get back to Benjamin's aforementioned distinction between types of reading and hence of writing, Angela Cozea recognized how Benjamin distinguished two aspects of perspective, 'optical' and 'temporal', the latter, for Benjamin, "commands the subject's thinking process" (213). Hence, in pictorial scripts the temporal is significant for the mental comprehension of described space and 'time' is therefore essential in grasping 'space'; the more time is stretched, the better the understanding of the space it is taken to analyze and internalize. Stretched-time reinforces the observer's (writer's/reader's) ability to analyze the contemplated object and bring it from it is external position into the mind's laboratory. Susan Strehle argued that in *A Thousand Acres* "Place and time are as detailed and mundane as the goods in an Iowa farmhouse" which she considered an evidence that Smiley's "role and arena, both domestic, limit her observations and define the kind of realistic narrative she can produce: *A Thousand Acres* takes its place in the genre of domestic realism, written largely about and for women, often by women writers" (211; see also Holstad; Just; Rozga) Strehle relied on Steven Kellman's contestation that "This is a woman's novel not only in being written by a woman and narrated by a woman but in using traditional kitchen foil as a vocabulary of passion and power" (436). No one can deny the realistic details of Smiley's domestic style, distinctive of a female writer, but one can not accept this categorizing which ignores the distinctive nature of Smiley's writing. The descriptive aspect of the novel is marginalized as belonging to 'domestic realism' while it is to be related to skilful cognitive literary pictorialism. In addition, the connection between time and space, which is essential in ekphrasis, is overlooked in the previous passing reference. Besides, Strehle referred to the introductory passage in the novel as evidence of domestic realism, overlooking hence the mathematics of space and time permeating that passage.

The passage of time might be clarified by detailing the distinction between pictorial literature and photography. As Smiley puts it, "and this memory is the only photograph of some nameless and unknown children who *may have lived and may have died*, but at any rate have vanished into the *black well of time*" (emphasis added, 49). In underscoring the anonymity of the photographed, distancing them, and the inability to tell about their present conditions, Smiley's statement is grounded into a sound understanding of philosophical conceptions of photography in relation to ekphrastic literature. Examining the relation between memory, pictorial writing, and photography, Anselm Haverkamp stated that picture-taking is a "memory-storing activity" different from "mental images"; that is:

> the metaphor of 'images' as mentally stored visual representations – the metaphorics of actual pictures carried around in our heads – appear to be most truly illustrated by photographic pictures carried around in our pockets… At the same time the happy photographic sublation of memory

> in pictures reveals a destructive, negative dialectic more than it embodies the hoped-for synthesizing effects. (258-9)

Haverkamp relied on Roland Barthes's notion of the phenomenology of the (dead) picture as an allegory of the tomb, by which the memory inherent in the pictures becomes, rather than memory, an act of mourning, that which Barthes called "flat death" (Haverkamp 259). While the photograph generates nostalgia for a lost past and asserts its loss, the mental literary pictorial image enables the person to relive that which his/her mind recalls, revitalizing all senses and emotions. The photograph, according to Barthes, creates a paradoxical reality: "it establishes not a consciousness of the *being-there* of the thing (which any copy could provoke) but an awareness of its *having-been-there*"; that is, "an illogical conjunction between the *here-now* and the *there-then*" (1977, 44). Thus, (the remembered) space can never be freed from its temporal aspect. Such is that which Barthes considered 'contingency' as pertaining to a difference between the *operator* and *spectator* of the photograph, the emotionally detached, mechanical, and technical taking of the picture as opposed to the emotional attachment of the spectator seeing it, or even, having seen the actual scene photographed (1989, 4; 9). The opposition between the *here-now* and *there-then* brings together life and death; in the words of Barthes "Whether or not the subject (of a photographic picture) is already dead, every photograph *is* this catastrophe" (1989, 96). And Smiley clearly highlights this catastrophe.

Taking pictures is hence considered a *mummification of corpses* (Bazin 9; Burgin 84). On the other hand, mental images, characteristic of literary pictorialism, are superior to photography, for the latter keeps appearances, while the earlier invokes essences, in an almost science-like manner. If there is a difference between seeing a citation of a (dead) person, and hearing it on a tape recorder (photographic and phonographic) there is also a great deal of difference between a photograph and a pictorial piece of literature. The writer (poet) uses words to paint features and scenes, make music, and produce sound, smell, touch, taste and, even, execute related intuitive activities. It is the skill of both the writer and the reader upon which this storage of memory relies, and it is in the writer's ability to render into his painterly, sculptural, scriptural, malodorous, and phonographic work of words the appearances and essences of what he writes about, that a scientific approach lies, an approach that relocates the observed for reinvestigation and analysis. In addition, the pictorial poet/writer employs his aesthetic organization of the world into symbolizing landscapes to enhance his rational, intuitive, and cognitive approach to external and internal reality.[8]

Smiley's ekphrastic investigation of space heavily employs mathematics. Early in the novel, Smiley draws attention to mathematical significance in presenting space:

> At sixty miles per hour, you could pass our farm in a minute, on County Road 686, which ran due north into the T intersection at Cabot street Road… another country blacktop, except that five miles west it ran into and out of the town of Cabot… and ran for three miles along the curve of the Zebulon River… *the earth was unquestionably flat.* (emphasis added, 3)

It seems as if she is drawing a map. Nonetheless, the mapping process moves towards a confusing conclusion that the earth, contrary to scientists' discoveries, is flat. Here one may wander why Smiley reinstates this anomaly. The past tense of *was* perhaps carries an allusion to a distant past, Shakespeare's time, when the earth was unquestionably flat and when any one who argued otherwise would have gone through Galileo's catastrophic fate. Hence, it is risky, perhaps even fatal, to argue against accepted facts (beliefs) in a community and Smiley seems to be taking that risk, her attitude being fatal if critics fail to bring to life her distinctive vision, a vision that definitely targets a new way of reading nature with a fresher perception free of dominant scientific *truths*.

[8]. Commenting on spatial disorientation in poetry, Kathleen Dolan discussed how poets attempt to create/disclose in their poetry spaces for the mind, locations of transparency through which to see the visible and invisible, fulfilling a moment of revelation and speculation (245). That is, pictorial space is a domain created by the poet to think within, such a space becoming hence a field of investigation and analysis which, no matter how far prophetic, remains scientific, and which might be called a landscape of and for the mind. In fact, pictorial literature exposes the recipient to that which it discloses to experience it first hand.

What one reads in the aforementioned lines is some sort of a lesson into mathematics, perhaps a puzzle for school children to figure out spatial dimensions. In her mathematical equation, telling us indirectly about the width and breadth of the farm, she uses and follows mathematical and geometrical terminology and methodology of numbers, lengths, angles, and shapes. Knowing the size (1000 acres), the width and breadth need be figured out by using the remaining available details; multiplying the two should render the size and knowing one the other might be determined by dividing the overall size over the one. Further, the length of one is determined by the time (one minute) it takes to pass before the farm at a defined speed (sixty miles per hour). This emphasis on mathematical measurement of space recurs now and again in the novel; Smiley talks about the "immensity of the piece of land my father owned, six hundred forty acres" and she clarifies her initial choice of measurement methodology stating that "the car was the exact measure of six hundred forty acres compared to three hundred or five hundred… reduced from vastness to insignificance by our speed" (4; 5). Once again, she keeps recruiting mathematical terminology as she compares sizes and dimensions. What takes one minute is now presented as a very gigantic space which is 'reduced from vastness to insignificance by our speed', continuing hence the mathematician's perception, though perhaps with the aid a physicist who cares for the perceptions of, amongst many, size and shape under the effect of relations among envisioned objects.[9] This mathematician/physicist draws our attention to the time given to space, the significance of time regarding the perception of space, the thousand acres becoming insignificantly tiny in a speedy observation; but when time is stretched out, the minutest space becomes gigantic and significant as it takes hundreds of pages to tell what happened in/on that space. This might be a message about the narrative style running into the texture of the novel. Rather than a picture of a thousand-acres farm, Smiley's novel is a live presentation of what happened (sensed, thought, and felt) on that space, making the 'thousand acres' no more than the frame of that live picture. Unlike Benjamin's airplane passenger, Smiley walks the *road* and visualizes that experience ekphrastically.

There should be no doubt that ekphrasis is an issue in the novel. Following is how Smiley paints a picture of a river running across scenery:

> and ran for three miles along the curve of the Zebulon River, before the river turned south and the Scenic continued west into the park. The T intersection of CR 686 perched on a little rise, a rise nearly as imperceptible as the *bump in the center of an expensive plate*. From that bump, the earth was unquestionably flat, the sky unquestionably domed. (emphasis added, 3)

Scientific discourse is employed to describe osmosis, emphasizing the visual dimensions of the disclosed objects, again with physics at the background as was also in delineating the effect of size on the eye of beholder seeing a thing against the background of another or in relation to position and speed. Along with the mythical resonance of the name Zebulon, the natural scene here seems reminiscent of "Kubla Khan": "six hundred forty acres, a whole section, paid for, no encumbrances, as flat and fertile, black, friable, and *exposed as any piece of land on the face of the earth*" (emphasis added, 4). Notwithstanding the agricultural and economic dimensions, a discussion of which lies beyond the scope of this paper, it is noticeable that Smiley puts emphasis on exposure along with the notion of the face; a portraiture of earth as a person. Her tools being merely words denoting color, shape, size, angle, location, and position, Smiley's painting is to be read and imagined. To avoid imprecise visual comprehension, she provides the reader with directions on how to see "you could see… and if you raked your gaze from the silos to the house and barn, then back again…" (3). Shifting between past-tense narration and direct address to the reader, Smiley creates a live conversation that facilitates visualizing which, she tells her readers, requires their repeated exact observation to achieve a sound rather than seeming comprehension.

Visualizing is not optical; it transcends superficial appearance and, in what requires more time, moves underneath:

[9]. There are numerous examples of this in the novel. For example, the discussion of the father's size turns into physics: "Perhaps there is a distance that is the optimum distance for seeing one's father, farther than across the supper table or across the room, somewhere in the middle distance: he is dwarfed by trees or the sweep of a hill, but his features are still visible… when my father turned… his movement was slow and startled, a big movement of the whole body, reminding me how bulky he was – well over six feet and two hundred thirty pounds" (20-21).

> and it seemed to me when I was a child in school, learning about Columbus, that in spite of what my teacher said, ancient cultures might have been onto something. *No globe or map fully convinced me* that Zebulon Country was not the centre of the universe. Certainly, Zebulon Country, where the earth *was* flat, was one spot where a sphere (a seed, a rubber ball, a ballbearing) must come to perfect rest and once at rest must send a taproot into the ten-foot-thick topsoil. (emphasis added, 3)

The mentioning of Columbus ascertains Smiley's discovery mission which is, nonetheless, more concerned with essences going deeper than appearances. The deep might be that which critics considered an analogy between female body and land, both exploited by man. In fact, Smiley diagnoses how the American male's perception of land and female reflects his sense of property and ownership: "he is this place" (111); she also draws attention to how farmers "extrapolate quickly from farm to the farmer" and how the farmer "looks like his farm" since, after all, "what his farm looks like boils down to questions of character" (215). Besides, *A Thousand Acre*s's perception of land is replete with the American dream as it presents America as a "wide-open land of unlimited opportunity for the strong, ambitious, self-reliant individual to thrust *his* way to the top" (emphasis added, Slotkin 5). But it is definitely a critique of the American dream which, first, destroyed the family and individual happiness and which, secondly, is exclusively masculine and exploitive of the female. In other words: "Ginny traces the poisoned and silenced land and women to the American dream via her farmer ancestors' adherence to ideologies valorizing ownership and mandating ever increasing production, and thus to the dominant narratives of nation building accomplished through male creative violence" (Carden 192). Nonetheless, there might be here a critique of science which helped achieve industrial advances in America and shared in materializing the American dream. The fact that "No globe or map fully convinced me" underlines the revisionary spirit of the novel which includes and also transcends that analogy of female body and land. Smiley is definitely concerned about vision or, indeed, re-vision.

Smiley repeatedly instates that she is interested in different ways of seeing things, her concern being fresh vision and freedom from established perception and generalizations even those of science. This might be an essential feminist message for women to free themselves from a patriarchal society that has built its pillars on sexist foundations, part of which is the treatment of the female as a land. One may here refer to Adrienne Rich's main feminist ideal which centers around the female's 'politics of location', a reconsideration of the position of the female in male-dominated space, and an invention of a space of *her* own, a rewriting or deconstruction of patriarchal culture which she calls: "Re-vision – the act of looking back, of seeing with fresh eyes… it is for women more than a chapter of cultural history: it is an act of survival. Until we can understand the assumptions in which we have been drenched we cannot know ourselves" (Rich 1971, 35; see also Rich 1984). As Smiley puts it, "According to Daddy… It's a whole theoretical system" (11). She insists on doing her own research or even search for a valid explanation of life, a truth of her own. In this context, her undermining of mathematics is not necessarily an anti-mathematics attitude more than it is an attempt to practice a mathematics of her own. One major memory to be forgotten, a forgetting essential for the female's revisionist task, is that of the education and scientific findings of patriarchal culture: "there was no way to tell by looking that the land beneath my childish feet wasn't the primeval mold I read about at school" (15). Smiley here ignores all science's contributions since those primeval times to which she sends herself back, starting from the scratch with fresh eyes. She becomes the scientific observer looking into the invisible; a central statement of the novel thus: "The view along the Scenic, I thought, taught me a lesson about what is below the level of the visible" (9). She here definitely poses as a scientist whose imagination, seeing an apple falling from a tree, wanders for explanations beyond the habitual reaction of unscientific observers who "See? The wisdom of the plains. Pretend nothing happened. We always do." (23). Once again, she comes to assert the educational aspect of description which aims at offering a *lesson* rather than merely providing superficial visual presentation. Reacting against "Nothing the least unusual", Smiley is definitely putting the following words into the narrator's mouth: "I've thought over every moment… time and time again, sifting for pointers, signals, ways of knowing how to do things differently from the way they got done." (13). Making the earth flat, she tries to avoid circular fate where the end and the beginning are the same: "our life, our farm" (5); she wants to get elsewhere rather than come back to the dominant state, the exhaustive circular movement leading to nowhere. She seeks necessary *rest* by changing the axis of

movement, giving up the linear for the vertical, going down and deep to plant a root, a new style or vision, into the underlying layers of that earth.

One major goal of Smiley's downward journey is to give utterance to the silenced and buried. Topographically, she ventures into layers of discourse and land, moving from 'the ten-foot-thick topsoil', to the uncovering of earth and of man; Jess Clark, absent for thirteen years, "break through the surface of everything that hadn't been said about him over the years" (7). The novel dominantly emphasizes the notion of what has not been done or said. Mary Carden examined "The unsaid" along with the novel's tropes of the silent/silenced woman, in the light of French feminist criticism –as presented by Luce Irigary--that argues for a distinctive female language and writing style which may destabilize the masculine ruling discourse, the effect being reflected also on the land itself which becomes, like the silent/silenced woman, a "landscape of the unsaid" (187; 188). Both land and woman are silent about the rape men inflicted upon them. But a further interesting development of this analogy is Carden's discussion of its effect upon women's "repressed memory" (188). Once again, memory achieves a position of centrality amongst all serious issues in the novel. One might ask: if what happens is a release of *repressed memory*, how, why, and in what terms is the memory released? Cognitive pictorialism might be the answer. It is the means of skilful recall, by which the recalled is relived for the sake of exposure, analysis, and defeat; the voicing of that which pains much more as long as it remains silent, and which, to be revealed, must be rendered live again to achieve a real nature and a cathartic effect. Smiley hence gives a voice to both land and woman.

The ekphrasticaly recalled memory is given a female center in the novel, and is consequently deconstructive of the masculine center of the past, the one Ginny describes saying "he was the rule maker" (206). As Carden puts it: "Reconstruction of Ginny's female self necessitates a change in strategy, a resistant rearrangement of the fatherland, her place on it, her memories of it" (189). It is not a male who is retelling history, nor is it his paternal style of telling it; this is not daddy's (Shakespeare's) story of family and national history, nor is it his proud narrative style. A feminist ekphrast has taken the cognitive lead to relive the past, no matter how sour that is, and to investigate that which has been hidden in it. In Ginny's words: "a life where many things go unsaid…you don't have to remember things about yourself that are too bizarre to imagine. What was never given utterance eventually becomes too nebulous to recall" (330). Perhaps, forgetting becomes a strategy for dealing with excruciating memory, or that after recalling that memory alive, the rememberer defeats the agonizing recollection.

Hence, ekphrasis assumes a therapeutic quality. It is within this ekphrastic vision that Smiley joins the sciences and the humanities. That is, ekphrasis is a mechanism of grasping reality in a scientific way, employing man's overall senses and intuitive capacities to internalize and analyze the world around us and its connection with the individual's psyche. Above all, Smiley uses the sciences within her scientifically ekphrastic technique, underscoring hence that cognitive ekphrastic literature is the domain where the contested sciences and humanities might be allied, and where the sciences overcome their abstractness and numbness and the humanities achieve a rational background.

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