Ah, I see! Metaphorical Thinking and the Pleasure of Re-cognition

Abstract

Despite the explosion of research into metaphor for the past half century, many educators at academic institutions seem resistant to the idea of metaphoric thinking as a mode of sustained scholarly inquiry, as an educative responsibility, or as a form of student assessment. This simple piece takes a lightly metaphoric approach to reviewing recent ideas in philosophy, poetics, cognitive psychology, and fMRI brain imaging results that support the teaching of metaphor. From historic resistance to more recent acceptance, looking at the dangers of misuse and neglect, this paper considers the gestalt-shift of metaphor and discusses how to teach this form of thinking as a serious form of thinking in the classroom. The paper and its appendices list sample assignments to increase student facility in this style of irrational thinking.

What too are all poets and teachers but a species of Metaphorical Tailors?

—Carlyle

A Single Stone

A few Octobers ago I sat in a field above the town of Windsor, Nova Scotia, with eight junior-high students, for a poetry workshop. As no one had told me this was the wild class (too hyper, a staff member said later, to work outside), we sat for half an hour and passed around a palm-sized hunk of granite, making metaphors: the salt-and-pepper granite lump becoming iceberg, broken dish, tired face, crumpled-up newspaper. ‘What animal is this’? I asked on one round. ‘What if it was a day of the week?’ said another girl. ‘A noise?’ ‘A kind of silence?’—all of us racing to keep up with the orbiting stone, the children sharp, energized, focused, engaged, their quick communal ‘yeahs’ or grunts affirming the apt metaphors with no need to explain: they got it.
Passing around that same stone at university—in the context of the Dalhousie Integrated Science Program or English Department courses at the Mount—elicited similar responses: bursts of thought, quick physical affirmation in involuntary nods and grunts, sudden intakes of breath, faces bursting open in a grin, the same laughter, the same hard focus. But most metaphors created by the undergrads seemed no more original or complex than those of the 12- and 13-year-olds in Windsor. And the adults had more trouble letting go of literal language (‘the stone is rough’, they’d say) or obvious connection (‘the rock is like a mountain’). Exceptions came mainly from students with self-taught metaphoric practice outside the university (songwriters, poets, dancers, photographers); first-timers found the exercise fun but silly; ‘you can’t be serious’ said one woman, rolling her eyes in the tradition of Thomas Hobbes and Locke.

One possible adaptive advantage to human evolution⁠¹ and to many (some say all) significant leaps in human thought, metaphoric thinking is limited, often deliberately, in many university environments—certainly in traditional undergraduate core curriculum, where most students receive only accidental exposure to this style of thinking. We want them to be “original” (English 1), to offer new perspectives and surprising, apt connection, yet “A” papers are too often treated as if they fell from the heavens, gifted to us, as if we have no responsibility to teach that kind of thinking: the one we value most.

Programs that provoke metaphor’s far-flung apt connection are increasing, true: a handful of students choose double-majors in diverse areas or attempt self-created, mixed-discipline directed studies; a few students will win a spot in an interdisciplinary program such as the King’s Foundation Year. But for the rest, few or no courses devoted wholly to metaphor exist (compare that to reason and

---

¹ See for example White and Geshwind qtd. in Bowdle and Gentner.
logic), with occasional study possible in creative-writing courses (if available),
or fine arts electives (ditto), or film, if students make the effort. Even the
abundant metaphors encountered in English Lit classes tend to be treated non-
metaphorically, that is, via analytic assessment, explained in mainly literal,
expository prose as part of the dissection of a text. Some academics are openly
hostile to metaphoric modes of study: in 2005, while a photocopier spat out
sheets, a senior member of another department, waiting, asked what the pages
were for. “Poetry portfolio, creative-writing class.” He told me such a course
“shouldn’t be taught at university,” while my assignment slid off the rollers: a
30-page midterm requiring a dozen responses to essays in poetics, followed by a
speculative essay of the student’s and an extended series of poems (after weeks
de drafts) circling a central focus in classical structures, free verse,
phenomenological approaches, and translation/transposition. I took my sheets
and left, wishing I’d thrown him Ted Cohen’s question: “Is a [metaphor] less
important than a theorem even if it’s a good [metaphor] and a trivial theorem?”

Linné [Linnaeus...designated lichens as “rustici pauperrimi.” which might
well be translated as “the poor trash” of vegetation. (Schneider 6)

If ‘getting it’—that is, genuine understanding—is what we're after at university, if we speak in metaphorical phrases (‘I see what you mean’) and analogy (‘a
parenthetical phrase is a thought-pocket,’ ‘a benzene molecule looks like a
closed ring’) as we try to impart crucial ideas that others have discovered via
metaphor (Kekule’s famous snake-eating-its-tail daydream which gave him that
structure of benzene)—why is it that we rarely teach university students how to
think clearly and with precision in metaphor themselves?

They are found from the poles to the tropics, from the intertidal zones to the
peaks of mountains, and on every kind of surface from soil, rocks, and
tree bark to the back of living insects! (Brodo, Sharnoff, and Sharnoff 3)

2 What Susan Sontag once called “the revenge of the intellect upon art” (7).
3 “Is a joke less important than a theorem, even if it’s a good joke and a trivial
theorem?” (Cohen, “Cultivation” 6).
4 “It is an extremely important result that metaphorical teaching strategies often
lead to better and more memorable learning than do explicit strategies” (Petrie &
Oshlag 581).
This paper braids three strands, which may be read separately or concurrently. Thread 1 makes a case for teaching metaphoric thinking by offering ideas from philosophy, poetics, cognitive psychology, and brain imaging studies. Thread 2 (right-justified) drops pieces of Jan Zwicky’s *Wisdom & Metaphor* and *Lyric Philosophy* into the discussion, two central texts. Thread 3 (centred, italic) links lichen fragments drawn from botanical texts: this thread serves as a kind of metaphoric counterpoint to the other voices. After all, a metaphor, like lichen—that crusty, vomit-coloured growth you see on rocks and trees and old roofs—describes a relationship between two once-disparate things that, for a moment, share a space.

_A lichen is not a single entity, but a composite of a fungus and an organism capable of producing food by photosynthesis [usually green algae].* (Brodo, Sharnoff, and Sharnoff 3)

(Don’t sweat the lichen stuff; you can read it to see what, if any, connections arise, or pay closer attention, or skip it; same with the Zwicky bits: each thread works independently and collaboratively, reader’s choice. The lichen pieces make this paper itself a (rough) example of the kind of thinking it describes, offering a metaphoric reading experience, if you choose.) Notes provide marginal murmur and heckling from the back of the class; appendices hold ideas for course and class approaches. Here’s one: what does the lichen-metaphor link illuminate? Fail to? Where is the congruity meaningful and where does it break down? If the analogy, like Kekule’s coiled-snake-for-benzene, fails to fit _all_ areas, does that render any ideas the analogy provoked _false_?

I do find it curious that studies of both metaphor and lichen shared unprecedented resurgence in the mid-20th century, with key conferences in the 1970s assembling fragments from an explosion of scholarly debate; and not until 1981 did members of the International Association of Lichenology accept, finally, that lichen is “an association of a fungus and a photosynthetic symbiont resulting in a stable vegetative body having a specific structure” (qtd. in Brodo, Sharnoff, and Sharnoff 8). The metaphor crew has not yet agreed on definition, and increasing evidence of metaphor’s peculiar kind of thinking continues to be resisted.
This resistance has a long history.

*Throughout most of the last century the botanical establishment treated with contemptuous disbelief de Bary’s notion (1866) that lichens were dual organisms. Indeed, many refused to accept it right into the present century. Leading contemporary lichenologists...bitterly opposed the hypothesis. Crombie characterised it as ‘this sensational “Romance of Lichenology”, or the unnatural union between captive algal damsel and tyrant fungal master’ (Crombie 1874), while M.C. Cooke in 1879 asserted of the dual hypothesis that ‘even if endorsed by the nineteenth century it will certainly be forgotten in the twentieth.’ It was not forgotten and gradually became universally accepted. (Gilbert 16)*

**Irrational Thinking**

Jan Zwicky, *Lyric Philosophy*:

> We are like the black-frocked guardians in a 19th-century English novel: certain assertions strike us as vaguely disreputable—we hear passion lurking in the wings, ready to rush in and wreak havoc with our heroine’s hitherto faultless comportment. (L21)

Theophrastus (371-286 B.C.), a pupil of Aristotle, was perhaps the first writer who left any record of lichens. (Schneider 3)

“If there is a villain in the Western philosophical tradition, it is the Literal Meaning Theory. That theory has, for two millennia, defined meaningfulness, reason, and truth so as to exclude metaphor” (Lakoff and Turner 215). Aristotle has been held responsible for a range of conflicting opinion on the subject: that similarity between different things can assist understanding, and that metaphor is ornamentation inappropriate to argument. The latter idea has dominated our own era, reinforced by philosophers such as Hobbes who, in 1660, declares in Leviathan “Chapter V: Of Reason and Science” that metaphors are not to be used in the “seeking of truth” (115), being “senseless and ambiguous words…and reasoning upon them is wandering amongst innumerable absurdities; and their end, contention and sedition, or contempt” (116-17). In the so-called Age of Reason, Locke goes further:

> …all the artificial and figurative application of words…are for nothing else but to insinuate wrong ideas, move the passions, and thereby mislead the judgment, and so indeed are perfect cheats, and, therefore…they are certainly, in all discourses that pretend to inform or instruct, wholly to be avoided; and where truth and knowledge are concerned, cannot but be thought a great fault, either of the language or person that makes use of them. (qtd. in Cohen, “Cultivation” 2-3)
During this entire period, which extended over two thousand years, scarcely anything more was done...Scarce a ray of scientific light had as yet penetrated the Stygean darkness in which these highly interesting plants were enwrapped. (Schneider 8)

Meta Pherein—‘To Carry Across’

Jan Zwicky:

Metaphor is a species of understanding, a form of seeing-as: it has, we might say, flex. We see, simultaneously, similarities and dissimilarities. (Wisdom L4)

A quarter-century after the 1978 Chicago symposium on metaphor gathered key fragments from an explosion of cross-disciplinary discussion, my friend and colleague Dr. David Wilson still insists that metaphors are ornamental, effective in persuasion, a colourful figure of speech, and nothing more. Off to class he goes, under his arm Diana Hacker’s latest edition of A Canadian Writer’s Reference, university-issued bible of first-year students who’ll find therein that metaphor is “a figure of speech that compares two seemingly unlike things to reveal surprising similarities,” that in a simile the writer uses ‘like’ or ‘as’ to make the comparison while a metaphor does not, as “the comparison is implied” (143-144). In this 465-page book, students get this scant half page on metaphor and learn two guidelines: to keep figures of speech logically consistent (vs. ‘Let’s push this hot potato down the road’) and to avoid clichés, those too-familiar comparisons that lack surprise (‘We need to think outside the box’).

No mention here that metaphor might be a figure of thought, nor that some consider human language inherently metaphorical (‘I feel down’), nor of its dangers. Nothing on how to evaluate and construct metaphor, nothing on what makes a good metaphor work.

Perhaps Hacker was avoiding a mess of debate in linguistics, psychology, philosophy, and neuropsychiatry, whose literature tells us that a metaphor’s idea can be paraphrased in literal language (Davidson 43)—and that it cannot be paraphrased in literal language (Black 22, 33). That all ordinary language is rooted in metaphor (Lakoff and Turner xi)—and that ordinary language is not metaphorical because a dead comparison is not a functioning metaphor (Black

---

5 The same reference book has two chapters (sixteen pages) on constructing and evaluating “reasonable arguments” (2).
That metaphor ruins character, as we’ve heard from Locke—and that a capacity for metaphor is vital for the health of character and culture (Booth, “Ten” 174). That metaphor is strictly a linguistic feature (Dreistadt cited in Seitz; Davidson 31)—and that metaphor is conceptual, with language just the delivery vehicle (Lakoff and Turner 55, 138; Seitz). That a metaphor means only “what the words, in their most literal interpretation, mean, and nothing more” (Davidson 30)—and that literal modes are “insufficient to express our sense of the rich correspondences, interrelationships, and analogies of domains conventionally separated” (Black 33).…

At first there was a tendency to classify lichens as a distinct group of plants, later to consider them as mosses or as fungi. This doubt and uncertainty continued to grow until the close of the seventeenth century, when the confusion reached its height. They were not only classed as mosses and fungi, but also as algae, sponges, liverworts, etc....Sprengel and others were convinced that, under favourable circumstances, lichens were evolved from decaying substances, or the decomposition of water. (Schneider 7)

Here, today, I ask you to consider that metaphor

- is the result of thinking of something as something else, “a claim of the form ‘x is y’ where ‘x is not y’ is true” (Zwicky, *Wisdom* L5)—the stone is and is not a tired face—an association that includes simile and analogy
- can occur in word, image, gesture, sound
- refers only to an active, novel comparison (dead comparisons and clichés, absorbed into ordinary language, are no longer fully metaphoric)

(*many lichen fungi have been grown in culture in the laboratory where they are characterized by a slow growth rate, have little organized structure and do not produce fruit bodies; in other words, they fail to resemble a lichen. [Gilbert 29]*)

I believe that such a metaphor

- surprises or astonishes in the moment of making sense

---

6 “A good measure of our culture would be our capacity...to produce metaphoric visions” (Booth, “Ten” 174).

7 For (i) see, among others, Booth, “Rhetoric” 50-53; Bowdle and Gentner; Zwicky *Wisdom* L1; (ii) Seitz; Bowdle and Gentner; (iii) Black 25; Bowdle and Gentner; Mashal et al.
• is apt (strong, good) depending on both distance + congruity of the things compared (a wide distance and a close fit) \(^8\)—which is what gives, I think, that sense of surprise and making sense\(^9\)
• like a good joke, cannot be explained and its full meaning dissolves in literal explanation
• can “present in a distinctive and irreplaceable way, insight into ‘how things are’” (Black 21) or (not quite the same) “attempts to get at the shape of what-is” (Zwicky, *Wisdom* L9).

**Intimate Collaboration**

Jan Zwicky:

The metaphor tells two truths at once: “not two,” it says, while remembering “not one.” (L16)

Of particular relevance to university teaching is the way in which two parts of a metaphorical phrase work together (without fusion, without one being absorbed or destroyed by the other)

> The special biological relationship found in lichens is called symbiosis.  
> (Brodo, Sharnoff, and Sharnoff 3)

in a collaboration that admits its own failure to describe the world: something is *and is not* like something else; ‘like’—but *not exactly* the same; true *and not* true, thus it always invites other ways of seeing, the metaphor throwing out its metaphoric hands, pulling students out of their desks.\(^{10}\) Wallace Stevens’ “Thirteen Ways of Looking at a Blackbird” doesn’t, for example, attempt to be

---

\(^8\) Where strong fit occurs, “metaphorical language is processed as quickly and easily as literal language” (Ortony, “metaphor” 479; Blasko and Connine in Bowdle and Gentner); other studies have reported both slower and faster times.

\(^9\) According to Mednick, ‘the more mutually remote the elements of new combination, the more creative the process or solution’” (qtd. in Mashall et al).

\(^{10}\) Separate studies a decade apart both showed that “students become interested in learning difficult concepts that are presented through metaphor and analogy” (Petrie and Oshlag 602). Halifax student Eleanor Queripel, remarking on work for a first-year class, noted that the readings that most interested her, regardless of author or subject or difficulty, were those that chose a metaphorical approach.
the final word on blackbirds; instead the poem opens up ways of looking and the idea of perception itself, provoking students into producing 13 more ways of looking at blackbirds or tumour growth or granite: “Like an hourglass / sifting bits / of clay, and quartz, glitzy / sparks and specks on the seafloor, changing / still” (Drisdelle 33-37).

That metaphor, already a conversation between two or more things, invites further collaboration has tremendous practical implication for educators; those in other fields have been paying more direct attention. Henry Seiden uses metaphor in his clinical practice to provoke change in patient thinking and behaviour: “My patient and I are collaborators, having moved into the metaphorical space together.” In his practice, Seiden makes various metaphors for the patient to consider (perhaps as a prof might offer students an analogy), but this is spun around by cognitive therapists Richard Kopp and Michael Craw, who describe “constructive change [not previously seen] in ideas, behaviours, and relationships” in those cases where metaphors were created and developed solely by the patient, without therapist comment or interpretation. The authors of this study suggest that therapists “attend to their clients’ metaphoric speech and select a metaphor to explore” by asking open-ended questions—something we might try in the classroom: listen for any metaphors the students speak or gesture as they try to explain a concept, then pick one to explore, in class discussion or in a paper, to see if and where and how the metaphor fits. “Together,” says Seiden, “we’ve created a meaning we can point to.”

When the two partners come together, they form a lichen thallus [plant body.] (Gilbert 33)

Contributions to Geometry: Lichen
Think of yourself as an agreement: arms and legs in step, each cell holding up the walls of another. (A. Dickinson 12-14)

At Chicago’s 1978 symposium, Ted Cohen famously described this “achievement of intimacy” in the metaphoric act, where “maker and appreciator of a metaphor are drawn closer to one another,” arising from a desire “to initiate explicitly the cooperative act of comprehension” (“Cultivation” 6-7). Twenty years later he goes further, saying that metaphors “aim to induce intimacy” (“Feeling” 239; italics mine). In my own experience, in a Children’s Literature class the act of making and receiving metaphors transformed a gaggle of
strangers into a single, alert organism for a class poem “In Which the Student Studies Lewis Carroll’s Alice,” where “the moral of the story / shrinks alongside her. / Nonsense” (Zinck 5-7); any decent shared metaphor—even the chalk-as-Hitler-moustache experienced in the crude object-game played at the AAU conference—can result in “a sense of close community” (Cohen, “Cultivation” 7). Of course, metaphors can play dirty. Wayne Booth tells the story of a southern US court case where a lawyer, defending a large corporation against a small local firm, hears the smaller business present itself to the jury as a dangling catfish squirming in the grasp of the bigger company and about to be gutted. “At that moment, my friend reports, he knew he had lost the case” (“Rhetoric” 50): “The speaker has performed a task by yoking what the hearer had not yoked before, and the hearer simply cannot resist joining him; they thus perform an identical dance step, and the metaphor accomplishes at least part of its work even if the hearer then draws back and says, ‘I shouldn’t have allowed that!’” (“Rhetoric” 52).

**Dangerous Liaisons**

Simone Weil:

The mind is enslaved whenever it accepts connections which it has not itself established.

This sudden, seductive intimacy, like that of jokes, has consequences and we don’t have to look far: Bush’s Axis of Evil, the idea of ‘mixed blood’, the Great Chain of Being (affecting everything from what languages are taught in schools to insecticide to slavery to who gets the corner office), and the university as business corporation (one consequence of which was a letter informing me in 1999 that I was no longer teaching students but “servicing learners”—and what will be the consequence of that?)

Metaphors also fall into the hands of people who fail (or refuse) to recognize what they’re holding, who fail to see that x is and is not y and attempt fixed literal interpretation, as the 2005 Kansas City School Board did with a poetic creation story. As for ourselves, our own conventional metaphors—this supposed need to move forward, to explore our options, to accept the bottom line—“can be used so automatically and effortlessly, we find it hard to question them, if we can even notice them” (Lakoff and Turner 65). What is the cultural
consequence of a widespread failure to teach the difference between literal and metaphorical styles of thinking? Or of neglecting to discuss with students some criteria for evaluating metaphor (just as we routinely address logical fallacies) or failing to discuss the way in which unquestioned dead metaphorical concepts shape their thinking and their lives? Where do we teach students the intellectual value in making their own connections?

Surprise! Transgression and Recognition

“Tell all the Truth but tell it slant—/ Success in Circuit lies” (E. Dickinson 1-2)—A black umbrella popped open is a bat-flower, is a surprise on a stick. A metaphor is born of distance and unexpected fit: we experience this as surprise, an idea-image bursting through walls previously thought solid (in the first, domestic object = animal+plant; in the second, an abstract emotion perches atop a concrete object). 11 Dali’s languid timepiece draped over a branch. You could say that, as we drive down our habitual thought-road, metaphor pushes the button on the James-Bond-ejector seat and from our rather shocked chairs in the sky we have—for a moment, before we fall back to earth—a startling and much expanded view.

Ludwig Wittgenstein:
565. I think it could also be put this way: Astonishment is essential to a change of aspect. And astonishment is thinking. (qtd. in Zwicky, Wisdom 1R)

One way that metaphor might elicit the new understanding so vital to academic work is that it disregards conventional boundaries, breaking implicit and discipline-specific rules. When Rosemary Drisdelle, a laboratory technician in microbiology, wrote a sonnet on the life cycle of the intestinal roundworm Ascaris lumbricoides, she told me she felt as if she was doing something forbidden in representing the creature as an “infant in a bassinet / …curled in an alveolar eddy” (“Life Story” 4,14). Metaphor’s friends and foes concur: the act has been variously described as seditious (Hobbes again), “deviant” (Lakoff and Turner 124), “rule-violating,” (Black 23) “a category-mistake” (Seitz), a

11 Metaphors on loan from Dr. Graham Fraser.
“deformation of human categories” (McKay, *Vis* 31), “smuggler or trickster” (*Vis* 69-70), and a “linguistic short-circuit” (Zwicky, *Wisdom* L68).

*The still explosions on the rocks, the lichens, grow by spreading, grey, concentric shocks.* (Bishop 1-3)

*lichen: 2. “skin disease with reddish eruption… L. f. Gk. leikhēn [eruption, disruption]*

Charles Simic:

The ambition of each image and metaphor is to redescribe the world, or, more accurately, to blaspheme. Stevens knew that and Dickinson suspected it. That’s why they kept a low profile. (qtd. in Zwicky, *Wisdom* 46R)

But how is this transgression a gestalt shift?

Because to deal with anomaly you have to change: you must let go—however momentarily—of one way of looking in order to see the other.12

We can see this in Jastrow’s duck-rabbit, in the Necker cube, and in the linguistic equivalent of these images: H.D.’s “Oread”:

> Whirl up, sea—
>  
> Whirl your pointed pines,
>  
> Splash your great pines
>  
> On our rocks,
>  
> Hurl your green over us,
>  
> Cover us with your pools of fir. (1-6)

This unfinished business, this restless flickering-back-and-forth (forest imagined as sea? sea as forest?) occurs not only between the two things being compared in a metaphor, and between possible schemas (duck or rabbit) but also in disturbing

12 “Literal language requires only assimilation to existing frameworks of understanding….Accommodation of anomaly requires changes in the framework of understanding” which “secures the importance of metaphor in considering how radically new knowledge is acquired” (Petrie and Oshlag 587).
reverberations between ourselves and a supposedly passive or inferior subject: a metaphor looks back.

How the slash looks: not
ruin, abattoir, atrocity; not
harvest, regen, working
forest. How it looks. The way it
keeps on looking when we look away,
embarrassed. How it gawks,
with no nuance or subterfuge
or shadow. How it seems to see us now
as we see it. Not quick.
Not dead. (McKay, “Stumpage” 1-10)

In this mutual gaze, metaphoric thought brings ecological perspective to our teaching: “A style of knowing shapes the world technology has wrought,” speculates philosophy professor and poet Tim Lilburn; “the ghost of Descartes hovers over the waste dump, the clear cut. Is there another way to look at things, something more benign?” (8). What if we share our joke with the subject rather than at its expense, or take up Don McKay’s suggestion that we read the field guide to the creature? At Dalhousie and Mount Saint Vincent, I’ve seen the latter approach foster deep and long-term appreciation by the student for any subject—an appreciation where none, prior to the exercise, existed—from laboratory technician Drisdelle’s formal address to a parasitic worm to a four-woman interpretative dance of *Alice’s Adventures* to 25 students crammed in a campus bathroom as Dominique read her poem to the toilet-paper dispenser (a study in approaching what is other).

Finally: what does it mean for university teaching if metaphors not only help reveal a known concept to others in swift, participatory, gestalt-inducing ways but are perhaps essential? “Whether abstract concepts can be understood only metaphorically is...[a] highly controversial issue” (Bowdle and Gentner), with researchers “seriously investigating the claim that radically new knowledge requires the operation of metaphor” (Petrie and Oshlag 582).

*Lichens have been nicknamed “nature’s pioneers” because they have the ability to colonize bare rock and are often the first plant-like forms to become established on newly exposed surfaces. We know that certain lichen substances can chemically combine with rock...*
minerals, creating metal complexes that make the rock slightly more soluble, thus speeding the weathering process. ...the first stage of soil formation. (Brodo, Sharnoff, and Sharnoff 54)

In the past two years, one piece of that idea has amassed strong supporting evidence: some of the metaphoric phrases you’ve just read, the ones you ‘got,’ provoked distinct and visible change in your brain, including heightened collaboration of your right and left hemispheres.

**Re-cognition**

Jan Zwicky:

Non-metaphorical ways of speaking conduct meaning, in insulated carriers, to certain ends and purposes. Metaphors shave off the insulation and meaning arcs across the gap. (L68)

You may have noticed that your own experience of ‘getting’ a metaphor, like getting a joke, is physical; in groups, recall the small involuntary sounds that happened for the more surprising metaphors in the object-game we played here, or the small noises routine at public poetry readings when a good metaphor happens; in class, people gasp, grunt, shift, “mmmm”, “ohhh,” heads re-angle—playing a metaphoric game in a composition course, “I realized, after, that I’d been leaning forward,” said one student, “the whole time.”

A few years ago I wondered if something measurably different was going on in our brains at such moments, but fMRI imaging studies at that time showed minimal or no distinction between literal and figurative language processing—though I saw, to my horror, that the ‘metaphoric’ pairings tested in those studies were tired clichés (e.g. ‘cold–unfriendly’). I wasn’t the only one: in October 2005, four researchers in psychology, medicine, and cognitive brain mapping used fMRI to test novel metaphors—drawn mainly from poems—separately from what they termed “conventional metaphors” (clichés), literal language, and unrelated jumbles (Mashal et al.). Results confirmed increased brain activity unique to metaphor: when grasping novel metaphorical word-pairs (e.g.

14 ‘functional Magnetic Resonance Imaging’ (fMRI) shows parts of the brain activated by certain stimuli (language, sensations, etc.) by using an MRI machine to reveal areas of increased blood flow during that particular activity.
‘imagination caves’), your brain’s right hemisphere (RH) shows “significantly stronger activity” \(^ {15} \) than it does for ordinary literal language (‘walking shoes’) or for familiar clichés (‘iron fist’) (Mashal et al.). Results pointed to “selective RH involvement in the processing (and perhaps the generation of) novel… metaphoric mappings,” the “cooperation” of right and left hemispheres, and a special role for specific areas of the right hemisphere “in generating novel, unfamiliar connections between words” (Mashal et al.; see also Sotillo et al. and Bottini et al. qtd. in Mashal et al.)

In most lichens, the fungus envelops the algal or cyanobacterial cells with tiny branches of its hyphae, the tips slightly expanded and tightly pressed against the photobiont’s cell walls. The fungus apparently “recognizes” the right alga by virtue of certain proteins (lectin) on the cell wall. (Brodo, Sharnoff, and Sharnoff 6-7)

What does this mean for educators? Even before that 2005 study, research already suggested “the RH may be particularly adept at using mutually remote elements of new linguistic combinations, a process that may lead to the more creative process or solution (Dorfman, Shames, and Kilstrom in Mashal et al.) But the 2005 study tells us that the newness of a metaphor affects the kind of neurological activity that takes place: in other words, a good metaphor makes all the difference. And it means the late Max Black was right: dead metaphors are perhaps not metaphors at all, and the simple fact of comparing one thing to another is indeed an ill-fitting definition for metaphor, which may belong to another species of language altogether (jokes? irony?), leaving The Canadian Writer’s Reference section W5-f about as inaccurate as a 19th-century text on lichen.

New Lamps for Old

Jan Zwicky:

There is, however, no simple recipe for communicating gestalts; or, rather, there is only the roughest and readiest: point and hope. (L92)

\(^ {15} \) Specifically: in addition to usual left-hemisphere (language dominant) functions, fMRI results “revealed significantly stronger activity in right posterior superior temporal gyrus, right inferior frontal gyrus, and left middle frontal gyrus” (Mashal et al.)
Lichens have evolved several ingenious methods of vegetative reproduction...parts that break off are capable of growing into new plants. Rather than rely on chance fragmentation, many species produce special structures known as isidia...Once dispersed, they attach themselves to the substratum by producing establishment hyphae, then growth proceeds. (Gilbert 34-35)

In my own teaching, metaphoric approaches have worked no matter what the cultural background, academic experience, diagnosed learning disability, attitude, or subject under study: in metaphoric tasks, students think faster, work harder, care more, and tell me so both during and after the course in written evaluation. I attempt in each course to present a few ideas on metaphor and to have students make metaphors (alongside analysis) for assessment and assignment; we discuss the danger of clichés, particularly political implications and effect on thinking; and in essays, obvious clichés are treated as significant error (students become ruthless readers of each other and of me). I drop poem-bombs: passing out—no explanation—a poem on the subject we’re examining (e.g. excerpts from Stephanie Bolster’s White Stone: the Alice Poems for a section on Lewis Carroll’s Alice) and allow for at least one polyphonic project per course (multiple voices on the page, with arrangement, in place of explanation, carrying the idea). Interdisciplinary directed studies (one-on-one) have proved most fruitful as exercises in extended metaphoric thinking—a play on astronomer Henrietta Leavitt crossed with a 1970s suburban mother (Mathematics/Creative Writing; see Appendix C), for example, and a multivoiced essay on the siege of Fallujah and the limits of reason (International Development Studies/Creative Writing). Still this seems flimsy, hardly enough.

Even commoner than the formation of isidia is the production of powdery granules... mainly dispersed locally by rain water trickling over the thallus or by the action of invertebrates, or, more widely, by wind.... (Gilbert 35)

In sum, we can engage in metaphoric thinking to teach new ideas (help students grasp abstract concepts), to explore (discuss, debate, clarify) these concepts, and to assess student understanding (see Appendix A). We might question the aptness of a particular metaphor, or its consequences. Thinking back to your last class, how could you present that material via analogy (in words or image or music or gesture)? If you assessed student understanding by having them invent metaphors for a particular concept, would you require that they also explain their metaphors in literal language? Why?
Jan Zwicky, *Wisdom & Metaphor:*

…if the perception of such gestalts is the basis of human insight, there can be no rules or procedures whose application constitutes the practice of philosophy. (L117)

*Albert Henderson has researched the meaning behind the Latin names of a number of our lichens…*

<table>
<thead>
<tr>
<th>Latin Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absconditella celata</td>
<td>A tiny hidden secret</td>
</tr>
<tr>
<td>Candelariella aurella</td>
<td>A small candle holder, with minute yellow flame</td>
</tr>
<tr>
<td>Haematomma ventosum</td>
<td>With blood-red eyes and puffed up</td>
</tr>
<tr>
<td>Parmelia sulcata</td>
<td>A small, round, furrowed shield</td>
</tr>
<tr>
<td>Umbilicaria hyperborea</td>
<td>Springing from a navel and found at the back of the north wind</td>
</tr>
</tbody>
</table>

(Gilbert 32; Henderson qtd. in Gilbert 32)

*Lichenologist Trevor Goward has described lichens as ‘fungi that have discovered agriculture,’ and there is much truth to that.* (Brodo, Sharnoff, and Sharnoff 4)

‘Seeing-as’: seeing lichen—a kind of food-for-protection collaboration—as fungi that have discovered agriculture: “I remember reading that phrase in the lichen section of *Plants of Coastal British Columbia,*” writes poet Don McKay, “and being immediately engaged” (*Vis* 105-6). Engaging, surprising, active, intimate, connecting teacher and student and subject, facilitating understanding, sparking a particular kind of brain activity, demanding original thinking and (I speculate) rewarding us with pleasure in the process: metaphor is a student’s best and built-in overhead projector¹⁶, provoking genuine delight in the classroom, in the subject, and in the world beyond the self.

Jan Zwicky:

To ‘get it,’ to understand, is to experience meaning. It is to be able to go on. (L82)

¹⁶ Metaphor vs power point: “Arnheim (1969) argued that thinking may be largely imaginal and that visual, not verbal, thinking is perhaps the most important and central mode of thought” (Seitz 13); K. Pibram [in 1995] suggests “that metaphor functions as a transformer through which words are translated into images” (qtd. in Kopp and Craw).
Works Cited


Fraser, Graham. Personal interview. 11 Jan. 2007.


Zinck, Erin. “In Which the Student studies Lewis Carroll’s Alice.” Poem for ENGL 2205 course work, Mount Saint Vincent U. April 2006.


### Appendix A

**Thinking in Metaphor**

#### i. within existing courses

- create more assignments and examination in metaphoric thinking e.g. ‘Of the 3 analogies below, choose the one most apt for ______ and discuss’; ‘Could we call Catullus a Romantic?’; ‘Invent five metaphors for cell division’; ‘Is Frankenstein a retelling of Paradise Lost’? ‘Create a soundtrack for tumour growth.’
- treat clichés as an academic offense (thinking that is not one’s own); treat the thoughtless use of extinct metaphors (e.g. ‘take it to the next level’) as a serious intellectual problem. This would require students to translate unoriginal comparisons into clear, ordinary terms or to create their own metaphors. In doing so they’d begin to routinely attend to and question their metaphorical inheritance.

#### ii. as a course focus

- more course offerings in the formal study of metaphor, at both beginning and advanced levels e.g. Introduction to Metaphor, cross-listed for Phil/English/Education/Psychology
- discipline-specific courses on metaphoric thinking in a particular field (use/effect of metaphor in physics, or biology, or computer studies or history, e.g. Andreas Mussolf’s *Analogical Reasoning in Debates About Europe*)
- classes or units within a course devoted to metaphoric study, either to discipline-specific metaphors or to metaphor as a way of thinking (or both).
- as a means of organizing a course structure

#### iii. via credit-gathering programs at the undergraduate level

- inter-departmental approach for single units of study e.g. course-credit, directed study
- metaphoric-thinking courses as undergrad requirements, e.g. music, creative writing in any genre, dance, visual arts, film studies, drama, lyric philosophy
- instead of a dept.-bounded, major/minor approach, create individual programs from a wide range of credits in many departments but with a specific declared focus (e.g. translation, writing gender, early childhood, marine ecology)
- mandatory double majors in a traditional Arts and Science discipline (English/Biology; Music/Math)
iv. via interdisciplinary programs of study

- (undergrad) 1 year, e.g. FYP/King’s; DISP/Dalhousie
- (undergrad) 4 year CSP & EMS/King’s; History of Science/King’s; Cultural Studies/MSVU
- (graduate) interdisciplinary Master’s, PhD

v. via a movement within universities towards an inter- or non-departmental approach
Appendix B

Dalhousie ENGL1000: Introduction to Literature / Dr. G. Fraser 2005-06

Metaphoric Thinking Exercise [topics of study: the haiku, translation]

There are two parts to this assignment. Do both of them. Keep your answers brief and clear.

1. Provide a metaphor to describe a haiku. You can describe anything relevant about a haiku – its form, its subject matter, the way in which it communicates meaning, the reader’s experience of it, or any other property of the form that we discussed in class. Then provide a brief explication (an analysis) of that metaphor.

2. Provide a metaphor to describe either the task of a translator or the nature of a translated poem itself. Again, provide a brief explication of that metaphor.

Dr. Graham Fraser comments on the above assignment: “Some responses just covered a haiku’s structure or smallness: ‘a haiku is a 17-syllable sandwich’ was one that worked. Others managed to capture its compression—‘a haiku poem is like a bouillon cube’—or the experience of reading a haiku—‘a face hidden in leaves’—or how a haiku functions as a trigger, the way it requires the reader to see an image, and all of a sudden insight it provoked: ‘it’s like lifting the lid on a jack-in-the-box’. Because a haiku works much like metaphor, having students define haiku in metaphor makes sense: they have to think like a haiku in order to complete the assignment.”

Fraser reported the task of reading and grading these assignments as being more pleasurable for him than previous non-metaphorical assignments, with more frequent occurrence of originality from a wider range of students, giving himself new ideas on the subject. Despite initial uncertainty, he found the metaphorical responses gave a clearer indication of student comprehension of the topic under study than any previous form of assessment, with the task of evaluation (a mark out of 5) no more difficult than usual.

227
Appendix C

English/Math Directed Study (playwriting): The Phenomena of Transmission / 2007
Student: [name omitted] Supervising instructor: Clare Goulet, Dept. of English

In this interdisciplinary Directed Study, fourth-year Mathematics Honours student [name omitted] will research, write, and present (via reading) a play, The Phenomena of Transmission, integrating the life and scientific work of Henrietta Leavitt (1868-1921), a theatre piece that will also integrate Leavitt’s voice with that of an imagined 1970s female contemporary counterpart, the whole piece assembled from the few known facts and an imaginative revisioning, with attention to accuracy of scientific detail and to a lyric style in both presentation and language. As a project, this play will itself enact one of its own themes: “that ideas have a way extending their own lives, much to the surprise of us all”:

“My goal is to write a theatre piece depicting the silent influence that social standing has on the creative output of an individual. There are two main characters: a little-known historical astronomer and an imagined suburbanite. Henrietta Leavitt made the significant astronomical discovery of the Cepheid variable-luminosity relationship. Ms. Leavitt was unable to publish her brilliant work because, at that time, Harvard University did not allow women to publish. Her work was published (and credit taken) by her employer. . . . I plan to juxtapose Ms. Leavitt’s situation—a talented turn-of-the-century scientist, a woman, unmarried, university educated, and yet in no way in creative control of her discovery—with a pregnant, married woman in the early 1970s who is high-school educated, forced to leave her job due to pregnancy, alone at home, overwhelmed with the changes happening, for she has a growing realization that she has no control over this creative endeavour. . . . I will be using domestic activities such as knitting and cooking to illustrate the beliefs of the scientific method (specifically with regards to physics); I will consult with Dr. Tina Harriott to ensure that the play’s physics is accurate and will draw on my own experience regarding emotional reactions and responses to being pregnant.

The themes I plan to explore include intellectual and physical isolation, inner space/outer space disparity, the lure of insanity as a place to lay one’s burdens down, and the perceived loss of creative control—that ideas have a way extending their own lives, much to the
surprise of us all. I believe that Henrietta Leavitt’s name deserves more recognition. I believe that weaving together an emotional tapestry of words through juxtaposed voices can inspire audiences to question their own creative future: to cover an ancient sky with modern stories.”

[The Directed Study components require research and annotated bibliography of 20-25 readings in gender and science, plays of scientific biography and discovery, lyric writing by women on creative work/motherhood/mental health, and available text on Leavitt. Faculty readers/consultants: T. Harriott (Mathematics); R. Zuk (English)]