

CHATTERTON LECTURE ON POETRY

‘The glow-worm’s 96 per cent efficiency’:
Hugh MacDiarmid’s Poetry of Knowledge

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MACDIARMID THRIVED ON LEXICAL VERTIGO. So many of his most impressive effects depend on access to areas of unusual vocabulary, whether Scots or scientific — ‘yow-trumple’ or ‘lithogenesis’. If by ‘vernacular’ we mean the language ‘naturally spoken by the people of a particular country or district’ (*OED*), then MacDiarmid, whether in Scots or English, could certainly make use of the vernacular but he would not be confined to it for long. So often in the Scots lyrics his move into Scots is a deliberate swerve into linguistic oddity — ‘Reuch Heugh Haugh’, ‘byspale’, ‘datchie sesames’. In 1921, using such words as ‘pedantic’ and ‘obsolete’, MacDiarmid had attacked campaigners for the revival of Scots.¹ His adoption of that language in 1922 was a turning from the language of the Empire, globally spoken English, to the language of some sections of a tiny country; it was at least as much a movement towards the unpopular as it was a gesture of identification with his own people. Although many members of the early twentieth-century Scots poetry-reading audience might enjoy ‘The Bonnie Broukit Bairn’ or ‘Wheesht, Wheesht’, those same readers were likely to be alienated by ‘I’m fu’ o’ a stickit God’ or MacDiarmid’s claim that the Doric might be ‘no less . . . uncontrollable, and utterly at variance with conventional morality than was Joyce’s tremendous outpouring’ in

Read at Edinburgh 3 November 1994. © The British Academy 1995.

¹ See Alan Bold, *MacDiarmid, Christopher Murray Grieve: A Literary Biography* (London: John Murray, 1988), 116–17.

Ulysses.² When MacDiarmid wrote these words in 1923 *Ulysses* was a banned book which hardly anyone in Scotland had read. All of MacDiarmid's uses of and references to *The Waste Land* in *A Drunk Man Looks at the Thistle* were most unlikely to appeal to a popular Scottish audience at a time when a good number of readers still regarded *The Waste Land* as at best inscrutable, at worst a hoax. If MacDiarmid's entry to Scots produced a number of wonderful and (for some Scots readers at least) accessible lyrics, for most English-language readers this was a move into inaccessibility. Furthermore, in vocabulary terms what most attracted MacDiarmid were the words 'bound by desuetude' in the dictionary.³ It was out of what he had so recently called the 'pedantic' and the 'obsolete' that he wanted to make poetry. His singing school, his 'Gairmscoile', had a demanding entrance exam. The poem of that title, the early MacDiarmid lyric most full of enthusiasm for the move into Scots contains (like a good number of his other Scots poems) words incomprehensible save to a few. For in the 1920s, as today, most Scots did not read John Jamieson's four-volume *Etymological Dictionary of the Scottish Language*. Certainly no one else viewed those volumes in terms of *Ulysses*. MacDiarmid's doing so was an act of genius, but also an unpopular or even anti-popular act.

I am emphasising this point because it helps us to rid ourselves of any lingering illusion that MacDiarmid's move into Scots was a Kelmanesque gesture of popular identification while his move into scientific language was a contrasting elitist gesture. On the contrary, the motor for each of these moves is a similar linguistic strategy — a move away from the most publicly accessible standard English language into productive but remoter acoustic and lexical corners. MacDiarmid may have attempted to manipulate the mass media in order to make a splash, but in trying to link his work to that of such writers as Joyce and Eliot he was promoting himself as an unpopular, avant-garde artist. Writing to the *TLS* in 1927, replying to a review of *Sangschaw*, he speculates penetratingly if a little whimsically that he 'might be indulging in "creative linguistics" like the Russian Klebnikov or in forms of *skaz* or *zaumny*'.⁴ In 1927 this combination of deep-dictionaried Scots and Russian futurist poetics was likely to leave even most readers

² Hugh MacDiarmid, *Selected Prose*, ed. Alan Riach (Manchester: Carcanet, 1992), 20–1 ('A Theory of Scots Letters').

³ *Ibid.*, 20.

⁴ Alan Bold, ed., *The Letters of Hugh MacDiarmid* (London: Hamish Hamilton, 1984), 765 (*TLS*, [Montrose, September 1927]).

of the *TLS* as bamboozled as it would have left most of the folk in MacDiarmid's then home-town of Montrose.

MacDiarmid loved to outsmart readers, and his use of vocabulary is part of this. The experience of reading him is far less a convivial, sociable stroll in which reader accompanies writer than a car chase in which the reader has to steer for dear life in order to pursue the MacDiarmidian vehicle as it zig-zags, doubles back, and constantly exceeds the conventional verbal speed limit. Both excitement and exhaustion are produced by MacDiarmid's poetry at its best. This is as true of 'Gairmscoile', that early language manifesto, as it is of 'The Kind of Poetry I Want'. These works reach for a linguistic nerve that carries 'undeemis jargons', whether in the line 'Ablachs, and scrats, and dorbels o' a'kinds' or the line 'Prose account of the endophragmal system of the crayfish'.⁵ Such lines live because of their acoustic and referential strangeness. Each opens a road that is rarely taken, an unpopular and (for that very reason perhaps) exciting new direction.

It sometimes seems as if MacDiarmid had a crude, Romantic idea of genius—it had to be unpopular—and so he courted unpopularity, equating it with genius. Yet so many of the avant-garde figures whose work he discovered and praised with remarkable alacrity—Eliot, Stevens, Joyce to name only three non-Scots—have come to be seen as crucial voices in the poetic articulation of twentieth-century life, that one has to recognise that MacDiarmid combined acute taste with a desire to mark himself out as an oddity within his own society. Whatever judgement is passed on his wish to position himself as an avant-garde artist, it is clear not only that his interest in poetry and science is linguistically closer to his interest in Scots than most critics would seem to believe, but also that his interest in poetry and science is developing at the very same time as he turns to Scots.

1922, the year of MacDiarmid's first Scots experiments, is also the year of his English-language poem 'Science and Poetry' which begins

To me, as to Galileo, crying
 'Earth is a star, a star,'
 Many the Jesuits are
 And bitter their denying.

(*CP*, 1220)

⁵ Hugh MacDiarmid, *The Complete Poems*, 2 vols. (London: Martin Brian & O'Keeffe, 1978), 74, 1006. Hereafter references to this work are supplied in the text, using the abbreviation *CP*. MacDiarmid's *Complete Poems* are now available most conveniently as part of Carcanet's ongoing 'MacDiarmid 2000' series (Manchester, 1992–).

Here MacDiarmid's speaker aligns himself with the scientific avant-garde in the person of the heretic Galileo, figuring himself as both unpopular and right. Several of the lines in this poem point towards MacDiarmid's contemporary Scots lyrics — not least the line 'Earth is a star, a star', which sends us to 'The Innumerable Christ' with its 'Wha kens on whatna Bethlehems / Earth twinkles like a star the nicht' (*CP*, 32). But the language of 'Science and Poetry' is a rather outmoded English. MacDiarmid learned to figure modernity in poetry first through Scots, partly at least because it allowed and encouraged a linguistic adventurousness impossible in the conventional diction of his earlier English poems. This adventurousness centres round the decision to mine the dictionary in daring ways, but it extends from that in several directions, some of which are easy to miss. So, for instance, the word 'Bethlehems' in the lines just quoted is a very unusual verbal item: the Christmas story has usually and necessarily only one Bethlehem — to multiply it is daring perhaps to the point of blasphemy, which takes us to the heart of MacDiarmid's poem. Again, MacDiarmid's noisy use of onomatopoeia brings a modernist clash of register and expectation. We do not expect 'The Last Trump', in the poem of that title to go

Tootle-ootle-ootle-oo.

Tootle-oo.

(*CP*, 29)

but MacDiarmid relishes the weirdness of the effect, just as he enjoys the line 'Hee-Haw! Click-Clack! And Cock-a-doodle-doo!' (*CP*, 74). If we want, we can think of *The Waste Land's* 'Co co rico' or Khlebnikov's 'Gau! gau! gau!', but however we take these noises, it is evident that the freer palette of reconstructed language encourages other inventions and strange combinations.⁶ As several critics have pointed out, MacDiarmid recombines whole citation entries from Jamieson, stealing extended pieces of text, rather than just single vocabulary items. A development of such modernist *bricolage* will fuel his poetry of science also.

In one sense, as he knew, MacDiarmid's move into Scots and into Jamieson was a move away from the modern world in its metropolitan and technological manifestations. C. M. Grieve was thinking about this even as he published 'The Watergaw' in 1922, for in the same issue of

⁶ For an English translation of this noisy Khlebnikov poem see Edwin Morgan, *Sweeping out the Dark* (Manchester: Carcanet, 1994), 110.

The Scottish Chapbook he penned an editorial explaining that what MacDiarmid had to do was

to adapt an essentially rustic tongue to the very much more complex requirements of our urban civilization—to give it all the almost illimitable suggestionability it lacks (compared, say, with contemporary English or French), but *would have had if it had continued in general use in highly-cultured circles to the present day.*

That last reference to 'highly-cultured circles' again reveals the anti-popular strand in MacDiarmid's Scots, but more interesting is the problem that follows:

A modern consciousness cannot fully express itself in the Doric as it exists. Take a simple case. What is the Doric for motor-car? It is futile to say 'mottor caur'. The problem that faces a conscientious literary artist determined to express himself through the medium of the Doric is to determine what 'motor-car' would have been in the Doric had the Doric continued, or, rather, become an all-sufficient independent language. He must think himself back into the spirit of the Doric (that is to say, recover it in its entirety, with all the potentialities it once had, ridding it, for his purpose, of those innate disabilities and limitations which have brought it to its present pass)—and then, appropriately to the genius of the language, carry it forward with him, accumulating all the wealth of association and idiom which progressive desuetude has withheld from it until it is adequate to his present needs—the needs not of a ploughman but of a twentieth-century artist who is at once a Scotsman (as distinct from an Englishman or a Negro) and a 'good European' or 'Western World-Man' . . . ⁷

One could make several comments on this racially exclusive, mono-sexual passage, one of which is that it implies a need for an imaginative knowledge of Scots language and culture which formal education in MacDiarmid's day did not provide; but the simplest, most important point I want to make is that MacDiarmid sidesteps his initial question, 'What is the Doric for motor-car?' He continues to sidestep that question and his acknowledged need for scientific and technological words throughout most of his Scots poetry, but the awareness of the need for such vocabulary is there at the very start of his decision to write in Scots. Here again is support for the idea that MacDiarmid's later poetry of science emerges not in contradistinction to but *out* of his poetry in Scots. Both are powered by a lexical and lexicographical acquisitiveness which is bound up with a drive for ever greater

⁷ MacDiarmid, *Selected Prose* (see note 2 above), 10 ('Introducing, "Hugh MacDiarmid"').

knowledge of the sort that will provide ‘names for nameless things’ (CP, 74). In 1926, the year of publication of *A Drunk Man Looks at the Thistle*, MacDiarmid wrote that ‘The highest art at any time can only be appreciated by an infinitesimal minority of the people — if by any’ and that ‘The ideal observer of art at work would be one conscious of all human experience up to the given moment’.⁸ These two consecutive statements link an anti-popular stance to a drive for total knowledge, a combination present in *Annals of the Five Senses* and in *To Circumjack Cencrastus* with its assertion

*It’s no the purpose o’ poetry to sing
The beauty o’ the dirt frae which we spring
But to cairry us as faur as ever it can
‘Yont nature and the Common Man.*

Like some puir spook that’s no content in Heaven
(A figure that’s a variant o’ the fau’t)
But needs maun haunt Earth still; and swear I’ve made
My verses sic’ a Noah’s Ark — o’ troot,
Cormorants, ducklings, serpents, and losh kens what
I might please W. H. Hamilton yet
Wi a sang to a Hairy Oubit or Green Serene,
Secondary sex characters in *Asparagus Officinalis*,
Or buck-eye poisonin’ o’ the Honey Bee,
Or Fungicidal Dusts for the Control o’ Bunt,
To fill the gaps in *Holyrood*. (CP, 255)

Here, mocking the minor Scottish critic W. H. Hamilton and his safe anthology *Holyrood, a Garland of Modern Scots Poems*, MacDiarmid produces a jokey doggerely manifesto for his own later poetry. It will be a ‘Noah’s Ark’, taking in all comers, all strange shapes, all sizes. It will ‘fill the gaps in *Holyrood*’ by supplying material, tones, and effects that conventional poetry, not least conventional Scottish poetry, has not been able to include. It will do all this by heading in exactly the direction spelt out by the line ‘Secondary sex characters in *Asparagus Officinalis*’ — it will drive in the direction of scientific knowledge.

If MacDiarmid’s 1922 poem ‘Science and Poetry’ imaged the poet as Galileo-like beleaguered avant-garde scientist, and if other writings from the short, great Scots period of the mid-1920s also press towards a wish for a poetry of knowledge that will work *with* rather than against science, such desires were not unique in the period. I. A. Richards, whose work MacDiarmid was to read with interest, published a book

⁸ *Ibid.*, 39, (‘Art and the Unknown’).

called *Science and Poetry* in 1926. His writing in the 1920s attempted to move the reading of literature into a scientific framework through the development of certain kinds of academic reading habits and a close attention to problems of interpretation which led him to develop with C. K. Ogden that special language, 'Basic English', an attempt at formulating a world language, which eventually shares its name with the computer language 'Basic'.

Producing his own 'Vision of World Language' in *In Memoriam James Joyce*, MacDiarmid takes issue with 'Professor Richards and his colleagues', arguing that 'Basic English' because of its deliberate rootedness in the English language hardly accords with Richard's contention (as versified by MacDiarmid) that

'No one learning the world language
Must have any excuse
For even the least shadow of a feeling
That he is submitting to an alien influence
Or being brought under the power of other groups.'

For 'Professor Richards' to claim that Basic English is freed from any taint of cultural imperialism 'displays', argues MacDiarmid

The magnificent insularity
Which is the pride of the Anglo-Saxon mind. (CP, 789)

MacDiarmid goes on to argue that

— All dreams of 'imperialism' must be exorcised,
Including linguistic imperialism, which sums up all the rest.
The best policy would be to apply
The method of Basic, not to English,
But to the vast international vocabulary which already exists.

The result would be neutral enough:
For although purely 'Western'
It would not be associated with any political power.
This is where every man belongs
Who is truly a philosopher and a world citizen,
Not a chauvinist in 'orthological' clothing. (CP, 790)

The subtle, yet naive concern with linguistic imperialism here reminds us of MacDiarmid the poet in Scots. More than that, the passage continues his obsession with vocabulary. If the best early work relies on mining the national vocabulary of Jamieson, the extraordinary later work mines the most impressive 'vast international vocabulary' of the twentieth century, that is, scientific language from books and journals.

MacDiarmid's early work subverts Anglocentrism by turning to what most English speakers would regard as a minority 'dialect'; his later work outflanks Anglocentrism by turning towards international learning and scientific language. If Richards, interested from his youth in science and poetry, in what he called in a later paper quoted by MacDiarmid 'An Agreement between Literary Criticism and some of the Sciences' (CP, 794), — if Richards moved from a microscopic preoccupation with responses to words, phrases, and lyric poems to a preoccupation with world language that pointed in the direction of computing, then MacDiarmid's career took a similar course. For the Scottish poet, obsessed in the 1920s with the qualities of individual Scots words and their lyric combinations, moved in the next decade towards a bigger-scale poetry whose vocabulary can be just as striking, yet which is literature and language on the edge of the computational. Tracts of the later poetry seem like nothing so much as material turned out by a computer database, bibliographical printout, machine language that is far from 'Basic', yet does closely resemble the kinds of information today most commonly held in machine-readable form. The closeness of some aspects of MacDiarmid's late poetry to the textures and forms of the modern computer is one of that poetry's splendours.

Before pursuing that point, I would like to set MacDiarmid's later poetry, most of which was written in the 1930s, within a wider literary context. Implicit or explicit in much modernist poetry is the contestation of knowledge, in particular a tussle with the increasing power of universities and their curricula in the systematisation of knowledge and the control of its dissemination. So, for instance, the kinds of knowledge that underpin *The Waste Land* — knowledge of Sanskrit, Dante, idealist philosophy — are frequently the result of the Harvard elective system which let T. S. Eliot take courses in those subjects. Yet that poem's search for and lament over the lack of a meaningful unifying spirit in existence is also (among several other things) bound up with Eliot's deep opposition to the fragmented Harvard elective system. His prose writings on education, lamenting the lack of unifying religious principle behind modern secular education, reinforce the point. Eliot, most learned of twentieth-century poets, steers clear of any permanent position within institutional academia, not least because of his deep suspicion of the nature of the academia which had formed him. His work constitutes an argument with the modern educational system.

With Pound, this is clearer. Another university product, a one-time college professor, he attempts to re-site and recite his learning in *The*

Cantos where knowledge is intuitively structured through juxtaposition, not least juxtaposition with the incidents of his own life. In the 1930s Pound contests the ownership of and access to knowledge of setting up, in opposition to institutional academia his own 'Ezuversity'. Where the critic-poet Richards develops textbooks such as *Practical Criticism* out of his experience as a university teacher in Cambridge and elsewhere, the poet-critic Pound produces his *ABC of Reading* and other primers in opposition to the academisation of letters. His 'Ezuversity' issues no degrees, is personal and cranky, its very name a joke, but a joke clearly directed against the system of institutional academia. Such academia (particularly in the United States) has so absorbed Pound and modernist writing that it often chooses to ignore the hostility and anti-academic strategies within the work.⁹

As I've argued elsewhere, Auden too should be seen as both learning from and reacting against the modern university, and particularly its treatment of literature. He does this most clearly in *The Orators*, that 'English Study' which is in considerable measure an outsmarting of the examiners who had given the poet a third-class degree, and a liberating scuffle with the emerging Oxford discipline of 'English Studies'. *The Orators*, written by an avid reader of the work of I. A. Richards, tests Richards's methods to destruction, and asserts the right of the poet to be an insider-outsider in the educational system. Auden was a public schoolboy who, throughout his life and work, bore the imprint of that upbringing.¹⁰

MacDiarmid was quite otherwise. He liked to stress the autodidactic nature of his own education with its origins in the laundry-baskets of books he carried from Langholm Public Library. Access to knowledge was an issue crucial to him. He was no university product, and he disliked, probably envied the attention given to the public-school Auden, for whom, MacDiarmid maintained, he had 'no use' (*CP*, 1340). Yet there are moments in MacDiarmid's verse when we can hear him trying on Auden's poetic clothing, as in these lines from an Audenesquely-titled 1934 poem 'The Frontier: or The War with England',

⁹ Useful here is Gail McDonald, *Learning to be Modern: Pound, Eliot, and the American University* (Oxford: Clarendon Press, 1993), though McDonald's interpretation of the links between academia and modernist poetry is different from mine.

¹⁰ See Robert Crawford, 'Exam Poem', *Critical Survey*, vol. 6, no. 3 (1994), 304–11, on *The Orators* and academia.

' "Poet's intuition baffled by peats.
Nationalism whummed on Border moor.
Countries Indistinguishable in Dark.
Daily Record's Competition — Midnight Tour.

' "Scottish Party trains reid herrin' as guides.
Novelist suggests a phosphorescent line.
Where is it? Pictures. Prizes for Replies.
MacDiarmid denies he'd owre muckle wine." (CP, 1296)

In the early Thirties Auden and MacDiarmid are closer than we might think. *The Orators* is Auden's determined outsmarting of the educational system; *In Memoriam James Joyce* (largely written in that decade) can be read from a similar angle. MacDiarmid's hostility to the universities of his own country is manifest in a celebrated passage in *To Circumjack Cencrastus* (1930):

*Oor four Universities
Are Scots but in name;
They wadna be here
If ither folk did the same
—Paid heed tae a' lear
Exceptin their ain . . .* (CP, 203)

The argument there is primarily about Scotland's 'ain' tradition and learning — the sorts of tradition and learning so fundamental to MacDiarmid's Scots poetry are those which, historically, have been ignored or suppressed by the Scottish university system, not least through the history of the teaching of Rhetoric and Belles Lettres.¹¹ MacDiarmid's Scots lyrics are written against the Scottish educational system, even when, as in the *Scottish Educational Journal*, he makes use of part of its apparatus. His attacks on the universities as Anglicising place him in a distinguished line which includes not only the autodidact Burns but also the St Andrews student Robert Fergusson in his address 'To the Principal and Professors of the University of St Andrews, on their Superb Treat to Dr Samuel Johnson'. MacDiarmid continues his fight against the Anglocentric impetus of Scottish universities in such vitriolic pieces as his 'Ode for the 350th Anniversary of Edinburgh University' (1933) where as a 'poor aborigine' he inveighs against its 'careerists . . . toadies. / . . . distinguished lickspittles, / And Honours degree nobodies' (CP, 1286), and in the later 'Direadh II' where he attacks 'The Fascist barracks of our universities / The murder machine

¹¹ See Robert Crawford, *Devolving English Literature* (Oxford: Clarendon Press, 1992), Chap. 1.

of our whole educational system' with its 'black-coated workers' (*CP*, 1183). These attacks, however, are directed not just against the Scottish universities' failure to teach Scottish culture, but against the wider university control of knowledge. The poem against Edinburgh University attacks its various faculties, while 'Direadh II' complains about 'institutions of learning' which are 'designed / for the depotentization of free intelligence' (*CP*, 1183). Against this, MacDiarmid (like Pound) sets himself up as a one-man university,

I in myself a Cordoba, cultural centre of Europe,
 A university town where intellectual tolerance
 Scepticism and rationalism flourished when they
 Were unheard of throughout the rest of Europe,
 — A focal centre, where Persian, Babylonian,
 Egyptian, Grecian, Roman, Byzantine and Christian cultures
 Merged and fructified each other, the point where medicine and
 mathematics
 (Arabic numerals, the zero, the local value of numbers, algebra)
 Classical philosophy and jurisprudence and certain elements
 Of poetry and rhetoric entered and re-entered Europe. (*CP*, 1346)

Professor David Daiches once recalled in an interview that MacDiarmid had said to him, 'I'm more intelligent than you are, and I've read more books.' Daiches said to me incredulously, 'Well, what kind of poet says this to a literary critic?'¹² Ezra Pound, surely, was just such a poet. Eliot and Auden would never have said that to a literary critic, but their poetry often implies the statement. Like MacDiarmid, these poets are trying to out-professor the professors in an effort to keep poetry and knowledge free, or at least partially free, from the total control of academia. MacDiarmid's late poetry seems so academic, so crammed with kinds of knowledge precisely because it is concerned with refusing to institutional academia a monopoly on knowledge. On behalf of poetry and non-institutional thinking it is a superb act of liberation and imagination whose cultural importance is hard to underestimate.

What MacDiarmid does is to appropriate from institutional processes areas of scientific knowledge and vocabulary, making these available for poetic access, for aesthetic contemplation and use. Pound's poetry of knowledge had its roots in his training as a mediaevalist; it was essentially palaeographical, relying on the recovery and comparison of historical documents. MacDiarmid's philological

¹² David Daiches in 'Hugh MacDiarmid: A Disgrace to the Community' (transcript of 1992 BBC radio programme), *PN Review* 89 (1993), 20.

modernism was co-creation with the dictionary that was more daring than Pound's palaeography, because MacDiarmid liked, as in the beginning of 'On A Raised Beach' to put the dictionary in the driving seat. If in the early poetry the dictionary helps form the poem, then in the later the poem takes the form of the knowledge-base or dictionary:

Or even as, in the Shetland Islands where I lived,
 I know, in the old Norn language, the various names
 Applied to all the restless movements of the sea
 — *Di*, a wave; *Da mother di*, the undulations
 That roll landward even in calm weather;
Soal, swell occasioned by a breeze,
Trove, a short, cross, heavy sea,
Hak, broken water, *Burrik*, a sharp sea or 'tide lump',
Bod, a heavy wave breaking on the shore . . . (CP, 763–4)

This verse paragraph continues, beautifully presenting the dictionary as itself a poem, a minutely detailed encounter between linguistic differences. Language and the investigation of vocabulary continue to be at the heart of MacDiarmid's late poetry, as they are at the heart of his delight in Scots. But in seeking for 'A language, a poetry, in keeping with the new quantum mechanics' (CP, 782), MacDiarmid knows that it is necessary not least to recite and cavort with the vocabulary of science,

. . . delighting in 'hohlraum' oscillators,
 Veiled allelomorphic transitions such as liquid helium
 Exhibits around a certain low temperature,
 Simple numerical multiples of the Riemannian ζ function,
 Black-body radiation, direct observation
 In the case of crystal lattices . . . (CP, 802)

Such passages are important steps in the history of poetry not least because they bring in new vocabulary, expanding what poetry can say and deal with. Also they may yield more conventional pleasures, such as the internally alliterative 'Veiled allelomorphic transitions such as liquid helium', but more significantly they produce arresting new combinations of lyrical and scientific beauty, letting each be seen in terms of the other as MacDiarmid alerts us to

The endless joys of *Scripta Mathematica*,
 Recalling that when young ferns unfold in springtime
 They are seen as logarithmic spirals,
 When light is reflected under a teacup
 A catacaustic curve is spotted . . . (CP, 803)

Here a Romantic delight in organic nature is bonded to a modernist delight in science and technology. MacDiarmid, more than any other major mid-twentieth-century poet, sees the opportunity offered by science and its terminology to make new poetic shapes and renovate old ones. His early work in Scots destabilises Anglocentrism through deliberate ec-centricity, addressing itself to a minority audience. Yet the more time that passes, the more we sense that Scots reaching out to Caribbean nation language and postcolonial dialects, to the predicament of Irish and Australian writers, for instance. Just as it is becoming easier for postcolonial audiences to appreciate something of the drive behind MacDiarmid's use of Scots vocabulary in the 1920s, so, I predict, this move towards science and scientific vocabulary will become clearer to a twenty-first century audience to whom computing is second nature.

This is because MacDiarmid's late poetry anticipates and articulates for the first time in English the world of the computer with its databases and hypertext systems. That it does so is only partly accidental for MacDiarmid, with his acute intuition for the new, was attempting to attune himself to modes of knowledge which in Nietzschean/Davidsonian fashion transcended the humanly possible. It is this desire which gives rise to such passages as

We have of course studied thoroughly
 Alspach, English, and the others who have written
 On 'Psychological Response to Unknown Proper Names,'
 Downey on 'Individual Differences In Reaction to the Word-in-Itself,'
 Bullough on 'The Perceptive Problem
 In the Aesthetic Appreciation of Single Colours,'
 Myers on 'Individual Differences in Listening to Music,'
 And Eleanor Rowland on 'The Psychological Experiences
 Connected with Different Parts of Speech,' (CP, 805–6)

and so on for another couple of pages. This is MacDiarmid out-professoring the professors, setting up poetry's claims to knowledge in opposition to institutional academia's claims to the same. He catalogues information sources, not ships, because he knows that information, knowledge, is the key to power in the modern world, and because in listing the innumerably varied studies of linguistic nuances he is celebrating the nuancing of language itself. In his search for a kind of superman-poetry, MacDiarmid wants 'A poetry concerned with all that is needed / Of the sum of human knowledge and expression' (CP, 1004). He seeks to programme his poetry with all available information, knowledge, language, that it may speak of these things in terms of

one another. Language is seen as fundamental to thought and to knowledge, and the late poetry maintains MacDiarmid's obsession with linguistic variety—whether Leibnitz's 'universal language' or Patrick Geddes's 'thinking graphics' (*CP*, 801) or I. A. Richards's 'Basic English'.

This obsession with the subtleties of encoded information is something MacDiarmid shared with the pioneers of computing in the 1920s, 1930s, and later. One might point out that the perforated card technology used in many early computers derives directly from that of the Jacquard loom still used in factory weaving in MacDiarmid's day.¹³ When he admires the production of a 'seamless garment' out of a 'machine' in which 'Hundreds to the inch the threads lie', MacDiarmid is admiring a process which is closely involved with the early development of computing technology (*CP*, 311–3). Yet the way in which his later poetry represents a braiding or weaving of scientific and other kinds of knowledge is far in advance of the technology extant when MacDiarmid's late poetry was composed. Even when he glimpsed directly the future of computing, MacDiarmid did so contemptuously. He half-rhymes Norbert Wiener's term 'cybernetics' with 'electronic tricks' in one of the late poems (*CP*, 1062). Yet I suggest that the experience of reading MacDiarmid's late poetry of knowledge is often like surfing on the Internet or moving on impulse through a vast database or hypertext system. We are given aesthetic access to computational textures and the ever-reforming patterning of hypertext knowledge long before computers themselves reached such a level of sophistication, and before non-classified access was possible. The familiarity of the wordprocessor and the computer help us to make sense of and dispense with some of the questions of copyright and appropriation which have so dogged criticism of the late poetry, and see it instead as a prolonged paean to the knowledge base, to language and inquiry as the DNA of human thought. Our familiarity with computer systems (whether or not we actually use them) makes us readier to accept this poetry whose form seems in constant flux as it reconfigures repeatedly along new nodes of connection. MacDiarmid puts it explicitly in terms of weaving and the manipulation of papers:

¹³ Information about the early history of computing in this piece comes principally from F. Gareth Ashurst, *Pioneers of Computing* (London: Frederick Muller, 1983) and N. Metropolis, J. Howlett, and Gian-Carlo Rota, ed., *A History of Computing in the Twentieth Century* (New York: Academic Press, 1980).

At this moment when braidbinding as never before,
The creation of the seamless garment,
Is the poet's task?

(Even so we have seen a collection of papers
Seemingly multifarious nevertheless connected with a system . . .
(*CP*, 876)

For us, though, it is probably easier to understand the kind of poetry he wants in terms of a computing system whose underlying pattern may carry innumerable strands of information in a system which allows us to pass almost immediately from religious imagery to Hollywood moguls, from 'Kathakali dance-drama' to 'hedge-laying' in the way that MacDiarmid's late poetry does (*CP*, 1025). This is the way we move in the modern electronic information world. MacDiarmid's late poetry more than any other written in this century, enacts this cybernetic movement. Osip Mandelstam, in an acutely perceptive passage, set out his ideas about the movement of poetic imagery.

Dante's thinking in images, as is the case in all genuine poetry, exists with the aid of a peculiarity of poetic material which I propose to call its convertibility or transmutability. Only in accord with convention is the development of an image called its development. And indeed, just imagine an airplane (ignoring the technical impossibility) which in full flight constructs and launches another machine. Furthermore, in the same way, this flying machine, while fully absorbed in its own flight, still manages to assemble and launch yet a third machine. To make my proposed comparison more precise and helpful, I will add that the production and launching of these technically unthinkable new machines which are tossed off in mid-flight are not secondary or extraneous functions of the plane which is in motion, but rather comprise a most essential attribute and part of the flight itself, while assuring its feasibility and safety to no less a degree than its properly operating rudder or the regular functioning of its engine.¹⁴

This holds good for many, perhaps most poems, but it does not always hold good for MacDiarmid's poetry unless we say that in the latter a jumbo jet may emerge from a small private plane, and that the direction may change suddenly and vertiginously. Mandelstam makes use of the new technology of his day to explain his ideal of poetry. To explain the kind of poetry MacDiarmid wants and delivers, we need to turn to the new technology of the future. It is surely no accident that one of the first critics to come close to understanding MacDiarmid's late poetry was

¹⁴ Osip Mandelstam, 'Conversation about Dante' (translated by J. G. Harris), in Mandelstam's *Collected Critical Prose and Letters* (London: Collins Harvill, 1991), 414.

the Edwin Morgan who produced poems apparently written by computer and who continued MacDiarmid's fascination with linguistic encoding. MacDiarmid helped give to Morgan the professional academic space on which to stand as poet, and helped him use his knowledge for poetic rather than simply academic ends.¹⁵

MacDiarmid came to be a cyberpoet partly as a result of extreme isolation. The closest comparison is with the Thomas Carlyle who worked on *Sartor Resartus* at remote Craigenputtock, surrounded by reviews, journals, manuscripts, and built that sense of isolation and fragmentariness into his text as he developed, in opposition to conventional institutional wisdoms, the thought of his Professor Teufelsdröckh. So MacDiarmid, embattled on Shetland, relying on uncertain long-distance communications, attempted in opposition to institutional academia to produce his own literature of knowledge constructed out of a tessellation of articles, appropriations, original pieces, insights. Often the strain shows. As he admitted in a letter written from Shetland to Ezra Pound,

I am, of course, a fraud as you will see from my address. I still contrive by a species of magic to maintain an appearance of being au fait with all that is happening in welt-literatur . . . But it must become increasingly difficult for me to produce these occasional effects of omniscience.¹⁶

The later poetry, though, shows just how MacDiarmid redoubled his efforts in this direction, aspiring, and frequently pretending, to a God-like or machine-like omniscience. His 1922 poem 'Science and Poetry' had been dedicated to the Scottish scientist Sir Ronald Ross, some of whose undistinguished poems had been included in the second series of *Northern Numbers* and whose Nobel Prizewinning scientific work on malaria would have been of interest to Sergeant C. M. Grieve who had suffered from that disease in 1916. MacDiarmid was particularly attracted to Ross's statement that 'Science is the Differential calculus of the mind, Art the Integral Calculus; they may be beautiful when apart, but are greatest only when combined'. MacDiarmid quoted this as an epigraph to his poem 'Two Scottish Boys' (1950; *CP*, 1360), but he also quoted (or misquoted) it as the epigraph to his Thirties poem 'Poetry and Science' where it appears as verse:

¹⁵ See the essays on MacDiarmid in Edwin Morgan, *Crossing the Border: Essays on Scottish Literature* (Manchester: Carcanet, 1990).

¹⁶ *Letters* (see note 4 above), 845 (to Pound, 'Whalsay, Shetland Islands. 19/12/33').

*Science is the Differential Calculus of the mind,
 Art is the Integral Calculus; they may be
 Beautiful apart, but are great only when combined.* (CP, 630)

I point out this recurring reference to Ross in the context of science and poetry not only because it emphasises the continuing strength of MacDiarmid's wish to fuse poetry and science over several decades, but also because MacDiarmid's versifying of Ross's prose is indicative of the larger compositional method of the later work, constantly appropriating prose for poetry. It raises the question of the distinction between the two, and the question of whether MacDiarmid's later poetry matters simply as a magnificently impressive cultural phenomenon, or whether it also matters as achieved poetry.

I hope I have said enough to convince actual or potential readers of the cultural significance of this work. It is *the* twentieth-century poetry which most clearly anticipates the greatest revolutionary technological shift in our society — the development of the computer. Yet, as poetry, this may make it all the more rebarbative. MacDiarmid maintained that 'The rarity and value of scientific knowledge / Is little understood' (CP, 630) and he sought a poetry whose delight in this knowledge was likely to restrict its audience as much as his earlier choice of Scots would restrict the immediate audience for his poetry of the 1920s. This restricting of audience may have appealed to MacDiarmid, who so often seems to have not simply accepted but sought isolation. Or he may have been playing a long game, hoping that just as the collapse of Anglocentrism might lead to a larger audience for his Scots work so the increasing importance of science might extend the audience for his poetry of fact and knowledge. Whichever is the case, MacDiarmid's later poetry had, he knew, nineteenth-century roots, not just in John Davidson but also in Whitman, whom MacDiarmid quotes enthusiastically in 'The Kind of Poetry I Want':

'In the beauty of poems', as Whitman said,
 'Are henceforth the tuft and final applause of science
 . . . Facts showered over with light.' (CP, 1028)

Yet MacDiarmid's attention to science (including the science of language) is not least, like his attraction to the vocabulary of Scots, a movement towards the arcane. In his later poetry he tries constantly to upset ideas of the poetic. Does he do so to any purpose, and with any poetic success?

The answer to both those questions is surely 'Yes', though

MacDiarmid's success is uneven and often, even where gained, it teeters on the edge of failure. His success is audible frequently at the level of phrasing. In a phrase such as 'the glow-worm's 96 per cent efficiency' (*CP*, 1016) he combines statistical and mechanistic vocabulary with the conventional Romantic gleam, renovating both. Like the Scots poetry, the later poetry is full of delicious lexical items and combinations — whether invented, or simply spotted and grabbed by MacDiarmid:

A poetry full of *cynganedd*, and hair-trigger relationships . . . (*CP*, 1017)

The thin pliancy of Galician . . . (*CP*, 760)

A sturdy Norsk-Murdoch spinning-rod, a 4-inch Silex reel . . . (*CP*, 1008)

In such lines the new combinations of the modern world produce a mind-stretching, ear-bending music. As of old, MacDiarmid is captivated by lexical weirdness. After delivering the line

Shirokogoroff's *Psychomental Complex of the Tungus*

MacDiarmid comments in parenthesis,

(If that line is not great poetry in itself
Then I don't know what poetry is!) (*CP*, 793)

This, for many readers, must be the nub of the question. Clearly such a line would appeal to the poet who had rooted through dictionaries and found 'rumgunshoch' and 'angle-titch'. There are bound to be readers for whom MacDiarmid's work, especially the late work, exists only at the level of spectacular oddity, even if it is the oddity of writing a computer poem before the advent of modern computing. This late work can be criticised as phallogocentric, its sometimes electronic voice lacking in humour, humanity, and (often) rhythmical interest. It may be that in future science in poetry will tend to take the form of lyric bytes. Yet in claiming for poetry so much material, in refusing to surrender to academia the rights of the poet to traverse so many knowledge-terrains, MacDiarmid did poets who followed him an inestimable service. When Les Murray declares laughingly, 'I think a poet should know everything', or when Ciaran Carson writes the chunky, clotted lines of *First Language*, each poet in a different way pays tribute to MacDiarmid's vision and sound-world, particularly that of his late poetry.¹⁷ In Scotland his example surely encouraged the later, more

¹⁷ Les Murray (interview), *Verse Issue Five* (1986), 28.

ludic experiments of Edwin Morgan and the fascination with informational textures present in some of the work of younger writers. Doing what very few poets ever do, MacDiarmid challenged and burst the horizons of poetry in his era. He did so sometimes uncertainly and lumberingly, in ways which I still find easier to discuss in terms of science and knowledge than in conventional poetic terms, and in ways which do not lend themselves to the restricted space of anthologies. In acknowledging those difficulties I am paying the highest tribute to MacDiarmid's achievement in challenging and expanding notions of what poetry can do. His challenge does not make it imperative that younger writers follow him. It may indeed have provoked more hostile reaction than sympathetic reading. But its existence extends the possibility of what poetry can say, how it can be textured, and where it can go. Challenging the monopoly of institutional academia, it extends poetry in the direction of our century's deepest preoccupations with science and with knowledge. For that future writers will owe to the later poetry of Hugh MacDiarmid an exciting and fundamental debt.