Writing Science:
The Abstract is Poetry, the Paper is Prose

We campaign in Poetry. We govern in Prose
Governor Mario Cuomo, 1987 (1)

MONSIEUR JOURDAIN: Is there nothing other than prose
or poetry?
MAÎTRE DE PHILOSOPHIE: No, Monsieur: all that
isn’t prose is poetry; and all that isn’t poetry is prose.
MONSIEUR JOURDAIN: My God! So for more than forty
years I’ve been speaking prose without knowing it . . . I’m the
most grateful man in the world for your telling me that!
Moliere, Le Bourgeois Gentilhomme, 1670 (2)

There was nothing that Faust wouldn’t do
To rush out an abstract or two
He submitted his soul
But forgot the control
So the Devil declined his IQ

The FASEB Journal, 2008 (3)

POETRY IN THE ABSTRACT

Scientists, young and old, have been writing poetry
without knowing it ever since they composed their first
abstract. Whether submitted for a meeting, an Initial
Query (IQ), or as the summary of a full paper, abstracts
obey a formal structure as well defined as that of
metrical poetry. Not all poetry, however. By and large,
the abstract has more in common with short, funny
verse forms such as the quatrain or limerick, than with
nobler efforts such as the ballad or sonnet. The last line
of a good abstract packs the punch of a limerick, as in
this five-liner on Relativity:

There was a young lady named Bright
Who traveled much faster than light
She started one day
In the relative way
And returned on the previous night!

Anon., 1945 (4)

A full-length scientific paper is prosaic by design,
extends to several thousand words, and is filled chock-
a-block with tables, figure legends, and references. In
contrast, a good abstract is lean, taut, and jolts the
reader with the shock of the new—in fewer than 250
words. And, again like a limerick, the best are usually
quite irreverent. Look at any recent abstract on chor-
date evolution and/or natural selection, and, to para-
phrase Ira Gershwin, “It ain’t what you’re liable to read in the Bible . . .”

If the abstract is in your own field, you tend to shake your head in wonder, wishing that you’d made the discovery yourself—sometimes, of course, you already have. In either case, a good abstract should evoke an emotional as well as an intellectual response. The best of breed fit Robert Frost’s definition of poetry: “when an emotion has found its thought and the thought has found words (5).”

The abstract conveys the newest of science in a ritual format, a genre our colleagues at Science magazine have well described:

[The abstract] should start with some brief BACKGROUND information: a sentence giving a broad introduction to the field comprehensible to the general reader, and then a sentence of more detailed background specific to your study. This should be followed by the RESULTS, or if the paper is more methods/technique oriented an explanation of OBJECTIVES/METHODS and then the RESULTS. The final sentence should outline the main CONCLUSIONS of the study, in terms that will be comprehensible to all our readers (6).

These quadripartite rules for the abstract have their parallels in the verse pattern of the quatrain, the most familiar example of which is Ogden Nash’s “The Turtle (8):”

The turtle lives ’twixt plated decks
Which practically conceal its sex.
I think it clever of the turtle
In such a fix to be so fertile.

A good abstract—indeed, with Purpose, Procedures, Findings, and Conclusions set in quatrain form—is as fine as any devotee of Nash, or of natural history, could wish.

ABSTRACT EXPRESSIONISM

I’m going to suggest that the four-part, quatrain model of the scientific abstract or IQ has served its term. What’s been missing all these years was an important, fifth subsection: The CONTROLS, the obvious, the critical, the perfect CONTROLS! Time’s come to expand the microcosm of the abstract:

The cosmos according to Hubble
Expands like the soap of a bubble.
Let’s hope it’s not closed,
It would then be disposed.
To shrink to a point, and that’s trouble.

Harvard Physics Dept., 2007 (9)

I’ve spent the last couple of years closely reading over 4,000 abstracts, and the bulk of those shot down by one or another editor or referee, have failed either to construct, or to spell out, the controls for their PROCEDURES or FINDINGS. I’d argue that there can be no overt CONCLUSIONS to an abstract absent the CONTROLS. Making the fifth subsection mandatory would, I believe, not only strengthen the intellectual, but also the emotive power of the abstract as a form of poetry.

Adding a CONTROL requirement to the abstract would lead us to a short, five-member composition which would work like a limerick which has five lines in a metrical rhyming formula of abba. So, if we use the limerick as a model, we now have room to insert those critical CONTROLS.

THE SUBVERSIVE LIMERICK

But there’s another reason to turn to the limerick as our example. Ever since Galileo, we’ve learned that good science can be subversive: it gives us news we didn’t know, didn’t want to know, or didn’t want others to know. Often, the discoveries that scientists publish are like banana peels that trip the credulous: the world is round, man and monkey share a common ancestor, glucosamine is no good for arthritis. Science subverts belief.

The limerick is also subversive. The form was popularized by an eccentric, peripatetic Victorian versifier, Edward Lear (1812–1888). Lear’s poetical writings, ranging from “The Owl and the Pussycat” to his hundred or so limericks, have lately been reinterpreted as carrying far darker meanings than their witty, upbeat surface would suggest (10). Be that as it may, Lear became not only a celebrated literary gent, but also a professional landscape painter of the Grand Tour. His first paid jobs were as an illustrator for large folios of natural history, of which the plates in Sowerbys’ Tortoises, Terrapins and Turtles, (illustrated above) are perhaps the most powerful. His continuing interest in natural history led to his election as an Associate of the Linnaean Society. But the verses remain his chief legacy and the limericks he published in A Book of Nonsense in 1846 (11) had undertones as dark as any Jungian would wish:

There was an Old Man who supposed,
That the street door was partially closed;
But some very large rats,
Ate his coats and his hats,
While that futile old gentleman dozed.

There was an Old Person of Cromer,
Who stood on one leg to read Homer;
When he found he grew stiff,
He jumped over the cliff,
Which concluded that Person of Cromer.

1 The FASEB Journal, similarly, requests that the abstract contain: “the PURPOSE(S) of the study or investigation, basic PROCEDURES [selection of study subjects or laboratory animals; observational and analytic method(s)], main FINDINGS, and the principal CONCLUSIONS (7).”
After Lear, most limericks followed suit: they are generally composed of three metrical feet in the first, second, and fifth lines, with two metrical feet in the third and fourth, but deviations from the pattern can be diverting, as in:

There was a young man from Japan
Whose limericks never would scan
When they said it was so
He replied, “Yes, I know,
But I always try to get as many words into the last line as ever I possibly can.”

Anon., 1945 (4)

Read a few abstracts in this issue of our journal, or in any other for that matter, and you’ll recognize that the last lines of most abstracts seem to have been written by that young man from Japan. Whether unveiling a new knock-out mouse or dissecting a signaling cascade, today’s author has squeezed into the last line of the abstract as many “implications” for cancer, inflammation, development, aging, psoriasis, and human diversity “as ever I possibly can.” Of course, the most famous limericks are more suitable to locker rooms or frat parties than to the pages of a scholarly journal. Gershon Legman (1917–1999) published the largest collection of these since Edward Lear, collecting 1700 examples of the genre under the not entirely original title of The Limerick (12).

A self-styled leader of the sexual revolution of the 1960s, he insisted that the limerick was counter-cultural by nature:

The limerick packs laughs anatomical
In space that is quite economical,
But the good ones I’ve seen
So seldom are clean,
And the clean ones so seldom are comical.

Anon., 1970 (12)

As might be expected from one who had coined the slogan “Make Love, not War” (13) Legman ruled that the limerick worked best when it was either anticlerical or downright dirty. A favorite in this line:

A habit bizarre and unsavory
Held the Bishop of Cambridge in slavery
In spite of their howls
He deflowered young owls
Which he kept in an underground aviary

Anon., 1970 (12)

(A devout postdoc can replace “the Bishop of Cambridge” with “my thesis advisor.”)

More recently, poet John Ciardi and sci-fi polymath Isaac Asimov echoed the theme that the limerick is a mild but generally accepted form of transgressive verse (14). Among hundreds of limericks they collected, only one was neither off-color nor anticlerical. That limerick puts the “when does life begin?” issue to bed, as it were:

Said an ovum one night to a sperm
You’re a very attractive young germ
Come join me my sweet
Let our nuclei meet
And in nine months we’ll both come to term.

Anon. (14)

BEWARE THE SONNET

The abstracts we write contain evocative, memorable phrases as in: “The virus kills cells of lineage X,” or “The clone was obtained by nuclear transfer,” or “The gene remained silenced for three generations…” They scan, they’re allusive, and they meet the standards of poetic speech as “tropes” (15). They also support John Barr’s notion that “The difference between poetry and verse, then, is the difference between an explorer and a tour guide (16).” Our abstracts report the results of active exploration; we don’t consult them for a cut-rate hotel.

So if our abstracts are novel, well-crafted, and dripping with tropes, why pick the humble limerick as a poetic model rather than a more extensive form of poetic verse such as the sonnet. Isn’t that fourteen-line blueprint, the stuff of Spenser, Shakespeare, Milton, and Donne a better model?

I’d argue against the sonnet, later examples of which—as Hollander tells us—have declined into “explanations of myths or analytic meditations (15).” They ramble all over the place, throw in allusions to gods and goddesses, heroes and villains, flora and fauna of every persuasion and corner of the globe. They digress.

American poetry yields a good example of why scientists should beware the sonnet. Edgar Allen Poe, (1809–1849) whom J. R. Lowell rightly summed up as “Three fifths of him genius and two fifths sheer fudge (17),” wrote the fudgiest sonnet ever devoted to our metier. His “Sonnet to Science” (18) evokes two of his obsessions, the Vulture as avian Fury, and his distaste for the “dull reality” of rational thought:

Science! true daughter of Old Time thou art!
Who alterest all things with thy peering eyes.
Why preyest thou thus upon the poet’s heart,
Vulture, whose wings are dull realities?
How should he love thee? or how deem thee wise,
Who wouldst not leave him in his wandering
To seek for treasure in the jewelled skies,
Albeit he soared with an undaunted wing?
Hast thou not dragged Diana from her car?
And driven the Hamadryad from the wood
To seek a shelter in some happier star?
Hast thou not torn the Naiad from her flood,
The Elfin from the green grass, and from me
The summer dream beneath the tamarind tree?

Abstracts that rank low on anyone’s priority list adhere more closely to the sonnet than the limerick.
They carry all the baggage of the longer verse form, with its unexplained references and puzzling botany. The authors are not the daughters of Time, but of Abbreviation. Instead of Diana, they revere MEK and ERK, instead of dyads, they spy NFκB, they’re on the spoor not of the Hamadryad but of HOMA-IR. The Vulture is no threat, because PERK will save the day. And there are no CONTROLS. Stick to the limerick, you’ll do better.

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doi:10.1096/fj.08–0801ufm

REFERENCES

10. Mars-Jones, A. (November 11, 2001) Queerer and queerer. The Observer. p. 21

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