

Field Nocturnes 20
The Bendings of Beings, of Cilia

“Riverrun, past Eve and Adam’s, from
 swerve of shore to bend of bay”¹

My quotation from James Joyce expresses not only a continuity with the previous essay, which began with the same, but also a certain craziness of this entire enterprise. There is a clear continuity with Field Nocturne 19: we need to brood further on the Feynman diagram of molecules of water, and that brooding is to be extended to diagrams of molecules of a cilia, especially as they bend in their role of nano-transforming soundwaves.

We, certainly I, need to hang on to a sense of humour and to a sense of the littleness mentioned at the end of the previous essay. “How small it’s all! And me letting on to myself always. And tilting on all the time.”² I am tilting at you all the time, tilting towards tilting you, bending you, towards being. If a young girl from India can come to “Bend it Like Beckham” then perhaps you can come about to bend it like Lonergan? But there is no point in me “letting on to myself always” that I am communicating the bent meaning of Lonergan, the “loonely in me loneness” of him that he somehow let on to share. “The answer is easily reached” he types as he begins the last paragraph of that terrible chapter 5 of *Insight*. Well, after fifty years of reading the

¹James Joyce, *Finnegans Wake*, the beginning.

²The second last page of *Finnegans Wake*. This, you must know, is a very crazy book. Still, I would recommend a pause sometime, in this context of Field Nocturnes, with the page or so that ends that round-about book, beginning at the end of page 626. Perhaps you can think of you as in conversation, Jack and Jill of the end of the previous essay, colleagues in reaching for meaning and elderhood. “But you’re changing, acoolsha, you’re changing from me, I can feel. Or is it me? I’m getting mixed. Brightening up and tightening down “

answer, I still am reaching. So, yes, a sense of humour.³ At one stage I conjured up for this Field Nocturne the comic title, “What’s the Cilia Doing?”. Indeed.

What am I doing, what am I to do? The question has been with me through the summer, after I left off writing about the ear, heading for a reflection on the wonders of those little hairs in the ear called *cilia*. “The auditory receptors are called **hair cells** because each one has about 100 hairy-looking **stereocilia** (singular: styerocilium) extending from its top. The hair cells and stereocilia are shown in figure 11.11 as they appear when viewed with a scanning electron microscope. The critical event in the transduction of sound into a neural signal is the bending of these cilia.”⁴ It brought back to me my own elementary lectures on the bending of beams, but that was only a study of the statics of beams, and it involved only physics and chemistry. Here the problem is the dynamics of “little beams” and the beams are organic, their oscillations nanomic (to coin a word!). “The scales units are nanometers; recall that 1 nm equals 10^{-9} m. The graph [fig. 11.14a] shows that the receptor potential of the hair cell is saturated by the time the tips of the stereocilia have moved about 20 nm to the side; this is what an extremely loud sound may do. But the softest sound you can hear moves the stereocilia only 0.3 nm to each side. This is an astoundingly small distance - about the diameter of a large atom! Since each stereocilium is about 500 nm (or .5 μ m) in diameter, this soft sound only has to jiggle the stereocilia about one-thousand of their diameter in order to produce perceptible noise.”⁵

What was I to do about all this? I ventured into the dynamics of protein folding and found a huge zone of research and theory. The theory was dominated by a

³My basic reference here in to section 3.3 of chapter 18 of *Insight*, “Possible Functions of Satire and Humour”. I had a previous extended shot at humour about the Lonergan business in *Cantower 11*: “Lonergan: Interpretation and History”. Go there for a few laughs.

⁴**Neuroscience**, 360. Not the phrase “shown as they appear”: we need to get back to that in the latter part of this essay.

⁵*Ibid.*, 363.

modeling bent.⁶ Was I to tackle that disorientation? Apart from it being a task way beyond the energies of this old guy, there was the problem of building such a venture into this reflection on what is an undergraduate text. Such a building is indeed to come about, with the help of a comeabout community, even perhaps before the end of this 21st century. And I would note here, with humour and a twinkle in the eye, that this is a reading of our paragraph called study that you may not have noticed. First, you must notice that the paragraph is a compact sketch of a heuristic of the study of organisms. But the study in question is the ongoing genesis of advances in biology: it is not the study of an undergraduate course. The problem, then, is not directly the inadequacies of such texts as Neuroscience but of such searchings and their expression as ire found in front-line research reports. In the present case one may think of, or find through the internet, such works as “Protein folding in the cell: competing models of chaperonin function.”⁷ The problem, in fact, is the psychology, the heuristic orientation, the bent of present researchers in biology. The problem that I face, that I invite those interested in Lonergan to face, is the bending of these beings who misread the cilia.

These beings will not bend easily. My fundamental thesis is that they need the bending power of the cycling and recycling collaboration of their discipline among all other disciplines. I would be happy to be proven wrong: that would mean that the cycling process would come into effective operation a century earlier than I have been expecting. At all events, I would note that this paragraph here is part of the reading of the paragraph study. Briefly, the context for reading Insight effectively in this century is the context of this short-term pessimism and long-term optimism.

But back to my question, What am I to do about the study of cilia? What am I to

⁶Of course, you get the pun: the study of bending was bent. It need a fuller richer theoretic that builds on a heuristics of aggreformism. That heuristics is the topic of *Field Nocturne 20*.

⁷The authors are R.J.Ellis and F.U. Hartl, and it is the first source of many such articles listed on the internet. See *The FASEB Journal*, vol. 10, 1996. [*FASEB* stands for **The Federation of American Societies for Experimental Biology**]

do about helping you to read paragraph **study** and the text **Neuroscience**? Or at least helping you to glimpse the size of the task involved, so that you might encourage others to venture into the bending of being up from the longer bending of decline. I am reminded here of Lonergan's struggle to handle the mess of economics with a solution that involves a shocking generalization, "an integral transformation of the whole previous position."⁸ So, in the next sentence he remarks, "I do not think there is any need to flog a whole row of dead horses: a flick at a particularly nauseating one is enough; indeed a wink is as good as a nod. Still, one point does deserve attention, and it is this. A generalization will postulate a transformation not only of the old guard and its abuses but also of the reformers and their reform."⁹ I would have you lift that reflection of his into our present context.

I am interested most immediately in a transformation, a bending, of the reformers and their reform. I do not see that transformation occurring effectively except through the discomfiting implementation cyclic functional collaboration. A whole lot of dead horses are involved, and here I am flicking at a particularly nauseating one: a Lonerganism that is a counterpositional stand on blinking and nodding. That stand would hold that when you blink you cut off the real, and yet when you nod to the explanatory you also cut off the real. Opposed to this is the position of "the pure desire regarding the flow of empirical consciousness as the material for its operation."¹⁰ The pure desire, normatively, is charmed by explanation, a hidden presence that is an echo of the Word.

What, then, am I to do in this regard, regarding, guarding? I can continue to invite you to find that neuroskinwhat that would enable you to begin again. So I bend you back to the water molecule diagram and to the image of the cilia and that of the

⁸*For a New Political Economy*, 30.

⁹*Ibid.*

¹⁰*Insight*, 383[407].

amoeba, “appropriate images of the relevant chemical and physical processes.”¹¹ We stick here persistently with the question raised in the previous essay, the question of the wherenow of the image and what is “significant in different parts in the sense that some parts are significant for some departments of knowledge and other parts for other departments.”¹² In the following essay we have to move back up our paragraph to view once more with feeling the climb needed to grasp the complex of grasps “that grasp conjugate forms systematizing otherwise coincidental manifolds of chemical and physical processes.”¹³

So, back to our images of cell, cilia, amoeba, whatever. The water diagram suffices for the present: the images of living realities offer us a focus in *Field Nocturne 21*.

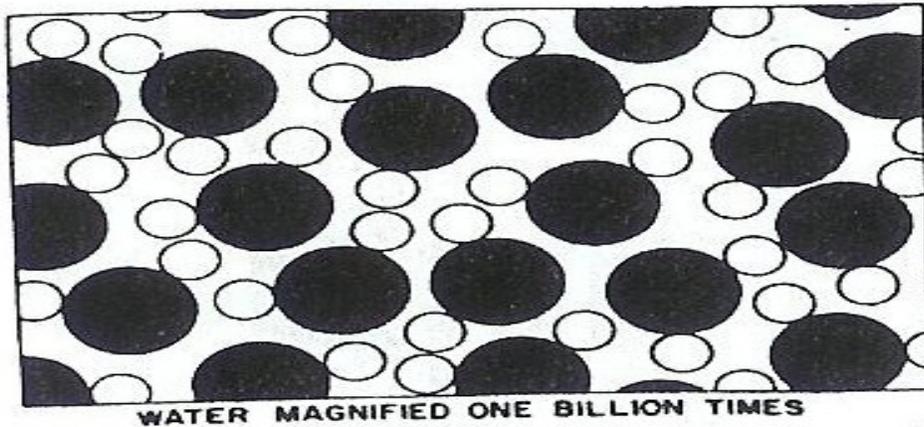


Figure 1-1

¹¹*Insight*, 464[489]. In the middle, of course, of our paragraph, **study**.

¹²*Insight*, 382[406].

¹³*Insight*, 464[489].

Here we are again, then, you and I and a diagram surrounded by print. But where is here? And what is here.

Between this print and the print “what is here” lies the diagram, which should have been a point of attention for you, part of the given which is made “significant for some departments of knowledge,”¹⁴ and the plural remains relevant because I have been inviting you into that refined realm of generalized empirical method in its third mode - what I call GEM3 - but don’t fuss about that **here**.¹⁵ Indeed, fuss is not a welcome addition **here**. What is welcome is the difficult achievement of a gentle pause, a curious look. **Herenow**: at the diagram on the previous page, placed after the words “what is here”.

You would be very strange not to find this exercise of pausing strange. There are indeed two significant pauses to have; the pause, pauses, with the diagram, and the pause with the words “what is here”. I did not write, in that last sentence, “over the diagram, over the words”, for “over” invites you to miss the point, the pointing: I am pointing you to where your what is, and your what is **here**. Wow: *here* now means “about” that word **here** that is both here and there, so to speak **What**, indeed, is a current element, running along the seen line, here ... here you, hear you.

Read then again now, **what is here**, without the **currens**: so, **requiens**. The rest could be glorious, shocking in its illumination, a point of intersection of the timeless with time. I think now of that little poem of Tennyson which I have quoted before, but instead of the little flower there is the little phrase: “Little phrase - but if I could understand / what you are, root and all, and all in all, / I should know what God and

¹⁴*Insight*, 382[406].

¹⁵The three modes of generalized empirical method are discussed in *Joistings 21*. *Joistings 22* discusses the fourth mode, which is the fuller context of cyclic collaboration. GEM3 is a shift towards attention to the subject that moves within but beyond GEM2, defined on the top of page 141 of *A Third Collection*. So, in the present essay we are attending to subject and object using whatever sciences help towards reaching further luminosity about oneself, the whatness that is cherishing this print, the “pure desire regarding” (*Insight*, 383[]) the seen page.

man is.”¹⁶ And various other rest-calls occur to me, but you must have your own that help you bear to bring your attention.

What is here.

The here is the seen phrase, the seen diagram, what-clasped in neuro-vibrancy.

Conversation makes a huge difference in this struggle. My first conversation with Lonergan was about “startling strangeness”¹⁷ and his first remark as he rambled round the Dublin room in 1961, was that when it happened “I had to go and ask somebody”. I wonder did that somebody know what he was talking about? But our bent here is towards you discovering the here of your what, the bent of your being curious, your curious being. Best leave it at that for the moment: or for the month.

So I turn to other relevant aspects of your being here whatting about the diagram, a whatting that would benefit so much from leisurely conversation. Those aspects were the subject of previous leisurely conversations of mine with Sandy Drage, who was agreeable to recording them.¹⁸ The record is there, and it seems pointless to repeat it here. You may turn to the **there** and make it **here**, a post-retinal presence.

But of course, even if I repeated it here, it would not be a repeating, but a fresh neuroprint for both of us. The writing above certainly springs from a larger vision in me of how “the higher system of intelligence develops not in a material manifold but in the psychic representation of the material manifold”¹⁹ The larger vision is the result of a slow persistent climb and this is important for you to note. We are here dealing with basic, elemental pieces of self and self-discovery. To these we need to return constantly, assuming that we really didn’t “get them” before. And we need to generate the type of

¹⁶Obviously I replace *flower* by *phrase* above. The full poem is quoted in the note to page 31 of *Phenomenology and Logic*.

¹⁷*Insight* xxviii[25].

¹⁸Around *Quodlibet* 16.

¹⁹*Insight*, 469[494].

community in which this Proustian orientation is a norm.

On then with our musing on the diagram of water molecules, remembering the mentality just mentioned: we may not have “got” the pointing to “what is here”, but even if it began to begotten it remains a challenge. Don’t you find **now**, for instance, that you have slipped back into reading print that is already out there?! And indeed, you may have slipped from the subtle self-attentiveness that belongs to generalized empirical method back to you good old scholarly self.

I assume now that you have read the piece from Feynman given in the previous *Field Nocturne*? Perhaps I can assume that you have tried, with some success, to figure out just what is wrong with the text? Did you perhaps begin our work sharing the common view that with small enough eyes and big enough molecules we could read off a genetic code?

What I wish to add **herenow** to your struggle is attention - are you tuned into this begin self-attention also? - to one word in our paragraph **study**: the word *symbolic*. It is in the middle of the sentence that is our interest in these few next *Field Nocturnes*. We may as well have it hereagain, foundagain, funagain, wake! “There have to be invented appropriate symbolic images of the relevant chemical and physical processes”.²⁰ What might be Lonergan’s relevant meaning of the word symbolic here **here**? Or indeed, not **here** until you have it **here**, and when you have it **here**, it is a presence that grows around you what especially as you work in logic formally or casually.

The relevant meaning is to be had by laboring over his early and difficult work,

²⁰I find it amusing rather than frustrating to note that I must slipslide past the great invention of *words* luminousness about which is to transform all disciplines in the next millennium. That that luminousness is missing e.g. out of linguistics and the psychology of language is just one more horror in these truncated academic times. But we get round to that problem in *Field Nocturne* 30.

“A Note on Geometrical Possibility”²¹ and, alas - should I apologize? :) - I feel it wise to give a substantial quotation from that text here to keep us genuine in our struggle. So here we are, are we not, what?

“One cannot do geometry without imagination and solely by using concepts. For the abstract straight line is unique; there are not two of them to run parallel to each other; and similarly whenever there is question, and perpetually there is question, of more than one geometrical entity of a kind, it is necessary for intellect to convert to phantasm.²² The solution to this is the symbolic image,²³ that is, the image that stands for things it does not resemble. The geometer boldly imagines blobs and bars but understanding them and thinks of them as Euclidean points and lines. The geometer does not bother producing lines indefinitely; he produces them a bit but understands them and thinks of them as indefinitely produced. He can do this because in between his images and his understanding there intervene his definitions, which settle for understanding and through what the images stand for, no matter what they resemble.”²⁴

²¹*Collection*, 92-107. I refer below to this text as **Geompos**.

²²There is an editorial note f here which is worth citing. It is left as grist for your mill till we push forward in the next Filed Nocturne, but here it is: “**necessary for intellect to convert to phantasm**: the expression is strange but the meaning is simple, namely, that intellect has a natural orientation to phantasm (image), turns to it for its object of study, and through an act of insight finds an intelligibility immanent in the image; the question has occupied Lonergan in his *verbum* studies (1967b: 158-62) during which his thought on the matter underwent a certain development (159, note 97).” **Geompos**, 272.

²³Again, an editorial note here, g. “**The solution ... is the symbolic image**: this image ‘that stands for things it does not resemble’ is regularly appealed to by Lonergan; as he says in *Insight*, ‘between the cart-wheel and the circle there is ... only an approximation’ (1975a:16 and see 17-19). See also *Understanding and Being* (1980: 30-32, 49, 71), and note e to chapter 1 above; but the treatment here (96 and 104-106 below) seems to be his most thorough discussion.” **Geompos**, 272.

²⁴**Geompos**, 95-96.

A pause over this certainly requires the pause to include a seriousness about whatting here in that entire text. What we do here is simply pick an entry point, and that entry point for us and for Feynman allies and indeed for the readers and authors of **Neuroscience** is the phrase “the image that stands for things it does not resemble”. But - and here we reach for into the rest of our effort in these *Field Nocturnes* - do not the images of the brain that fill such books as **Neuroscience** not resemble the brain?

We are back to the problem of the “foothold for imagination,”²⁵ and our problem of a headhold of imagination in imagination. It is pretty clear to me that this is the central problem of brain studies, of “seeing water in a slice of brain” studies.²⁶ And it seems pretty sensible to me that we should leave it at that in this *Field Nocturne*. You might even solve the problem, get that headhold on your imagination, before you get my pointers to my slim - but progressing - headhold in the next *Field Nocturne*?

²⁵*Insight*, 250[275].

²⁶I recall here the title of Quodlibet 16, “Seeing Water in a Slice of Brain” part of the conversations with Sandy Drage in 2004. It would be very realistic and genuine for us to both go back to those conversations before venturing on into the musings of *Field Nocturne 21*, “Observing Brains”.