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The carrying: Material frames and immaterial meanings[1]

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This lecture is divided into three main sections. The first part discusses the von Uexküllian umwelt and *Funktionskreis*; the second concerns Charles Sanders Peirce's semiotic, and the growth of signs and meanings; and the last explores the biosemiotic idea of poiesis – particularly in relation to culture and literature. The first two sections will look at some of the main theoretical ideas underpinning biosemiotics. The third, taking particular account of this audience of members of the European Association for the Study of Literature, Culture and the Environment, will make some suggestions, with examples, of the ways we might think biosemiotically about the makings and self-makings which art, and especially literature, affords.

1. The von Uexküllian umwelt and *Funktionskreis*

When we talk about framing nature, we must of course ask who, or what, is doing the framing. Are *we* framing nature? Or is nature, perhaps, framing *us*? And if the latter is the case, which aspect of nature might be doing the framing? Or should we perhaps be talking about a mutual framing, an on-going and growing dance of complexity in which the frames are, themselves, made of a constantly shifting series of focuses and a growing evolutionary frame? Can we think of this dance of shifting focuses like movements of attention: periods of dreamlike habit punctuated with intense experience of differences developing at different levels and in different places? Perhaps we can think of this as, for example, like a film or video camera's shifts from interior intimacy to exterior distance, from wide panning shot to tight close-up. What I mean to convey is a cybersemiotic dance of all the organisms in

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which framing, itself, is a matter of perspective and subject-position. This is framing as autopoiesis and, more specifically, evolutionary life as a self-reading text in which meanings are constantly growing.

I am very honoured indeed to have been asked to give the first annual Jakob von Uexküll Lecture here at the University of Tartu, for so long a centre of dynamic thinking and scholarship in semiotics, and I shall attempt to answer these questions from a biosemiotic point of view. So I start with von Uexküll, and, in particular, with two of his most significant contributions to the fields of philosophy, theoretical biology, and biosemiotics especially.

The first of these contributions is the Uexküllian conception of umwelt. I know some of you will know about this, but some won't, and especially because this lecture honours his great influence upon our biosemiotic understandings, I thought it would be helpful to go into a little detail. In von Uexküll's usage, umwelt does not mean simply 'environment' or 'surround' in a general sense, but, rather, '*signifying* environment'. In other words, each organism inhabits a species-specific semiotic world. As is well known, one of the simplest worlds invoked by von Uexküll is the umwelt of a species of tick. This animal has a semiotic world comprised of three signs only: the first is the odour of the butyric acid which is produced by all mammals, and which, when smelt, causes the tick to let go of the plant where it waits; the second is the blood temperature of mammals, indicating a successful landing; and the third is the hairy mammalian skin which causes the tick to burrow downwards in order to sink her thirsty head into the subcutaneous tissue of the "lucky" prey in preparation for reproduction.

Every species sees, or otherwise senses, only the signifying world which constitutes its own species-specific carriers of meaning, or signs. This includes human animals of course, although here we will need to add further, much more complex, levels of semiosis. In the case of umwelten, the framer is evolution. Every species 'sees', or otherwise senses, what evolutionary pressures have sculpted it to 'see', or otherwise sense, in terms of survival and reproduction. But in naming the framing force evolution, I am not by any means invoking either a simple neo-Darwinian story of random genetic mutation and natural selection, or, indeed, a passive organism. Natural selection must always be a sculpting force of *some* significance, although quite a few biologists have questioned the full extent of its role in evolutionary change. Natural selection can sculpt or refine existing forms, but it cannot explain big speciation differences.

When we come to highly complex things such as cultures, the questions surrounding the applicability of Spencer's, and then Darwin's, idea of the production of the 'fittest', meaning the best fitted to the environment, become much more difficult. Should such a thing as 'cultural selection' exist, it might be to do with a 'fit' in terms

of dominant fashions in ideas and groups, but here we enter the realms of philosophy and sociology of religion and science, of Kuhnian paradigms, and of shifts in knowledge, and also of a general logic of development and growth. This, indeed, is Peircean territory of the logics of change. This question of the logics of change will take Peirce and us to both biological and cultural evolution. It will take us to natural and cultural stories, to the organism as processual semiotic structuration of habits and differences, to the organism as made up of sign relations, and to the natural metaphors and metonymies before it takes us to cultural ones.

But before moving on to that, I want to pause a moment to notice the changes that are going on in biology these days. The life sciences are certainly slowly moving on from the Modern Darwinian Synthesis (sometimes also called the neo-Darwinian synthesis) associated with Julian Huxley, Theodosius Dobzhansky, J. B. S. Haldane, Ernst Mayr and so on. The growth of Developmental Systems Theory, in particular, has meant that biologists are much more likely now to talk about metaphors and stories than they were 10 or 15 years ago. Kalevi Kull has noted the ways in which the grip of the Modern Synthesis has dug a vast trench between humanities' interests in language, semiosis and meaning-making, and similar interests in the life sciences. In his Foreword to the recent English translation of Patrick Sériot's book *Structure and the Whole: East, West and Non-Darwinian Biology in the Origins of Structural Linguistics*, a book, incidentally, which demonstrates a long history of the intertwining of linguistics, geography, and biology, Kalevi Kull (2014: xi) writes,

> The Modern Synthesis in […] biology during the 1930s made from a set of Darwinian ideas an extraordinarily strong dominant and it dug a trench between philology in the humanities and the study of other living and meaning-making creatures that was almost insurmountably wide. It temporarily killed the idea of intentionality in life sciences; it almost excluded the idea of convergence.
>
> Baer, Berg and their followers developed a sound non-Darwinian approach to the explanation of the means and forms of evolution. According to this approach, development explains evolution, and not *vice versa*. Remarkably, the principles and means of this approach could be formulated in Jakobson's hands as *structuralism*. Jakobson introduced this term into linguistics.

One has seen this gesture before. Darwin's development of the branching structure of evolution was influenced by his cousin Hensleigh Wedgwood's study of the evolution of languages. Roman Jakobson's importation, via Claude Lévi-Strauss, of Prague School thinking into French intellectual life, as structuralism, could not take either the wider semiotic or wider and deeper biological dimensions across the East/West border. The neo-Darwinian Synthesis was already established in Western thought more broadly, and French semiology was already closely wedded to Saussure's dyadic

and anthropocentric semiological theory. Although Jakobson was influenced by Charles Sanders Peirce, as well as by Saussurean linguistics, both anthropological structuralism, and its theoretical appearance in other humanities disciplines, was not. Nonetheless, research in epigenetics, the activity of prions in protein folding, and other non-genocentric mechanisms means that it is becoming increasingly clear that DNA is not the only means of heritable change. Not only are epigenetic behaviours a source of evolution, but also, in a surprising rebirth of a form of Lamarckism, it appears that environmentally acquired traits, such as reactions to stress, can be heritable too.

To return, now, more directly to von Uexküll, the organism is not passive in evolutionary terms. Just as we, in our very complicated human ways, shape our environment, so, too, do all other organisms. It is here that we can introduce von Uexküll's second important contribution to biosemiotic thinking. This is the notion of the *Funktionskreis* or functional circle. Making von Uexküll a very early proto-cybernetician, the *Funktionskreis* describes the way in which signs from the umwelt enter the *Innenwelt*, or inner world, of the organism and thus change the organism's behaviour. I would say that they activate the organism's interpretive capacities, its mind. But, when I say this, please remember that we are always having to use words designed for the human versions of these phenomena. However, this might make us want to rethink what we mean when we use words such as 'mind' and 'interpretation'.

At any rate, we can notice that signs flows inwards, round and about the organismic innenwelt systems, and, there transformed by interpretations and translations, flow outwards again as other signs. Does this require consciousness? No. Humans are the only animals that are deeply self-reflective and conscious of the fact that they use signs. The effects of these changed signs – sign relations interpreted and transformed – are felt, and in their turn translated, in the umwelten and *Innenwelten* of many other living things. Every creature, no matter how simple, must have a sense of 'aboutness' or intentionality; organisms have meanings and purposes and aims. However system-derived and non-conscious, they are not machines, and every living thing must be capable of negotiating a sometimes surprising world. This means that every organism has something like 'mind'. Mind does not require consciousness; most of your mind and my mind, and certainly the most creative parts, are non-conscious – as research on creativity shows. Consciousness, well, human consciousness at any rate, is extremely focused and thus limited – like a very bright spotlight. Again, what all this means is that we are required to stretch our language and thus to stretch our concepts.

We can also notice that, when signs enter an organism's *Innenwelt*, they enter a space in which, even from the start, it makes little sense to talk about body and mind

as though these were two distinct things. A mind is the sense which an organism makes of the *relations* between itself and its umwelt. As Gregory Bateson pointed out, mind is a 'no-thing' (Bateson 2002: 10). It is relational and immaterial. Mind is a *sign* of the activity of *sign relations*. Thus, instead of talking about mind and body as two distinct things, it will make much more sense to us to talk about a place of cybersemiotic feedback loopings, a constant circulation of semiosic processes, which also result in other signs flowing back out into the environment again. Thus are ecologies and worlds made, and made of the ceaseless cybernetic looping flows of semiosis. And with this in mind, it's worth noting that what DNA encodes is not a detailed assembly plan but is also a set of signs or cues whose reading by the cell depends upon the successful achievement of sense-making at each antecedent stage. In this you will surely recognize the germ of our own human practice of reading, word by word, sentence by sentence, paragraph by paragraph, chapter by chapter, building up meaning as we go. In other words, meanings biological and cultural grow. The story is the thread through which we can trace all those transformations and growing.

So we have the notions of *Funktionskreis* and umwelt, but why does von Uexküll, and separately Charles Sanders Peirce, the other major theoretical resource for biosemiotics, want to talk about signs rather than simply about a direct and unmediated perception of the material world? Firstly, with von Uexküll, the insight that all organisms are oblivious to things which don't matter to them in terms of their survival and reproduction, that the umwelt is a *signifying* world, must imply that, for any species, there are many, many aspects of the environment in general, as opposed to the umwelt of a species, which have no meaning-carrying capacity at all. For any species, this means that reality *as such* does not 'get through'. There is no view from nowhere as Thomas Nagel memorably put it. What 'gets through', and is real and causally efficacious, is organized into a coherent view, a model or map, and that means that we must distinguish between all that is, and what we know about, our map. But, as Alfred Korzybski said, we mustn't go mistaking the map for the territory. What we know about is the organized web of semiosis; those things which can be, for any species, bearers of the signs of their world. These are the things which make a mark on an organism's way of getting about in the world.

2. Charles Sanders Peirce: The growth of signs and meanings

Semiotic matters are more extensively developed into a system by Charles Sanders Peirce. Not only does he pick up a semiotic way of thinking which had lain more or less dormant between the end of the Middle Ages and the second half of the

nineteenth century when Peirce revived it, but he also developed an evolutionary semiotic whose movement through time – as a triadic series of relations forming what Thomas Sebeok named as the 'semiotic spiral' – bears some similarities with both von Uexküll's *Funktionskreis* and with the later ideas of cyberneticians such as Gregory Bateson.

Peirce's understanding of the sign involved a triadic structure – more accurately a triadic structuration of evolving *sign relations* – formed by an object, a representamen and an interpretant. The object, whether thing or idea, is never *fully* known, not least because it exists in a world of incalculable relations (Whitehead); the representamen is the sign vehicle, the object as it is known to any individual organism; and the interpretant, not simply the human 'interpretation', but the *meaning* (or function) for *every* organism, is the difference (or change) brought about by the sign relation as a whole. This is a mobile, processual, understanding of the sign; any of the three aspects is capable of occupying any of the three positions, and it is from this process that new learning, development and evolutionary growth can occur. Note that the outcome can be, and usually is, governed by habit. A habit is something like a dead metaphor: a difference which no longer signifies in its fullness. It is, so to speak, a change or difference which doesn't make much difference. But, clearly, life and communication depends upon regularities or habits. It's when the change or difference occurs which *does* make a real difference that we have real growth. This kind of difference is the result of something like a *living* metaphor in which the framing suppositions of the representamen are seen to be similar to another different frame entirely. This collision, or perhaps blending, of different frames leads to an interpretant which is a difference which really does make a difference (Bateson 1972). Such a difference, dependent on the kind of logic of chance and guessing which Peirce called abduction, provides the potential for real growth.

But what I want to notice especially about the semiotic emphasis is as follows: first, signs are composed of relations, not only between the three aspects of the sign – the object, the representamen, and the interpretant – but also the fact that signification itself is a 'standing for' relation. Relations are not things. The semiotic object may be a material thing, but it can also be an immaterial idea. Signification works, and is causally efficacious, absolutely regardless of this distinction. Thus, semiotics also erases the materialist/idealist opposition. There must be material bearers for signification – codes and channels – but sign relations, themselves, indeed like all relations as such, are immaterial. This is why semiosis, and subjectivity generally, has been such a problem for a science committed to materialism without exception. Everyone now talks about 'information', and codes and channels, but such talk cannot talk about semantics, or meanings. Scientists like to measure things, but try measuring relation, meaning or all possible dimensions and extensions of

function. [See, for an example of this impossibility, Stuart Kauffman's (2013) discussion of the 'adjacent possible' in his Foreword, "Evolution beyond Newton, Darwin and entailing law", to Henning and Scarfe (eds.), *Beyond Mechanism: Putting Life Back into Biology*.] It can't be done. I think that materialism is better understood as a form of necessary *carrying* of semiosis, so that objects which are also material things (which they needn't be, of course; objects can also be ideas) are equally understood as potential bearers of meaning. Matter, it seems to me, can usefully be thought of as a potential bearer of information, and living matter as a potential bearer of semiosis. Inform-ing the non-living and the living turn out to be different things. The former is inflexible – what Charles Peirce called 'effete mind' – whilst the latter is capable of self-organized responsiveness, especially of a very creative kind in relation to chance events.

Some of you will recognise in this a sort of biosemiotic confraternity with the new materialism and object-orientated ontologies. All semiotic objects (whether thing or idea indifferently) are real objects and causally efficacious. Such semiotic objects can develop and grow; both *things*, in other words, and *ideas* can generate more knowledge and more meaning. This is the business of art and of science. Peirce, himself, wrote that "every symbol is a living thing, in a very strict sense that is no mere figure of speech. The body of the symbol changes slowly, but its meaning inevitably grows, incorporates new elements and throws off old ones" (EP 2:264). Meanings evolve. But the meanings which belong to non-living objects are not their own; they belong to the living organisms who make them. The meanings that belong to all living things grow and evolve themselves also. They do this via the movement of similarity and difference, expressed in the play of habit (or repetition) and chance, linked in chains of association thus establishing new habits to be creatively disrupted by chance and new differences. This is, itself, a description of what humans call metaphor, metonymy and synecdoche, so when I use the word metaphor, I am *not* using it metaphorically.

Each organism lives in its own creaturely umwelt. But on top of that species umwelt of signs and meanings, any creature with culture most surely inhabits a world of meanings which are made by the historical time, temporalities, and geographical place of each culture. Here, we can think about another thing associated with an evolutionary view. This is that evolution expressed in natural metaphor and metonymy is, at the same time, building strata of development; each layer is triggering, supporting and scaffolding the evolution and thus semiosic complexity of the next, none simply reducible to what was first laid down. The concept of emergence was coined to address this non-reducible dynamic of evolutionary adaptive systems. Nothing comes from nothing. There will always be semiosic threads making the future from the past. And this should remind us that we cannot assume that either a

plant or an idea which grows benignly in one place and culture will grow benignly in another.

Jesper Hoffmeyer's theory of semiotic scaffolding captures this structuration of developmental and evolutionary levels. He writes:

> the human genome cannot be considered a "master plan" or controller of human development. […] the genome is better understood as a semiotically controlled scaffolding system. However, as a scaffolding system, the genome is only the most basic form; multiple semiotic scaffoldings of a more and more overriding range are built on the top of the genetic scaffolding system, and most important in the context of cultural psychology, semiotic scaffolding systems painlessly bridge the mind-body gap, being in their function as controllers, essentially somatic and social, in one and the same process. (Hoffmeyer 2014: 95–6)

3. The biosemiotic idea of poiesis

In my final section I now want to look at the role played by chance in a necessarily habit-run, but not deterministic, world. The growing of meaning from chance, from the semiosic apprehension of patterns of similarity and difference, runs throughout the living world. It is a major motor of learning and adaptive change. But since we humans, at least in the West, have largely abandoned the kinds of languages, practices and understandings which make room for a creative and non-calculative response to the unexpected, for chance and the abductive attitude, and have instead replaced it with a dependence upon the will and upon control rather than responsiveness, chance as fruitfulness has been associated mainly with artists.

I want to end with a brief consideration of creative practice, and of poets in particular, because I think this tells us something significant about the conduct of life in general, not just for artists and inventors, and the limits of the will as a source of creativity, adaptation, and evolution more generally.

My first example of the chance encounter offered as renewal is Thomas Hardy's "The darkling thrush", first published at Christmas 1899. The story the poem tells is of the poet's chance wintry meeting with the 'aged' thrush, which was, nonetheless, surprisingly capable of a Christmas birth of newness in its carolling in of the New Year and the new twentieth century.

We might say that the thrush, and what it can mean, is a chance affordance (Pickering 2007[2]). It provides a kind of scaffolding for Hardy which can make a bridge into the future. Peirce called this aspect of evolutionary life tychism, after

[2] Pickering, John 2007. Affordances are signs. *triple C* 5(2): 64–74 can be accessed at http://www.triple-c.at/index.php/tripleC/article/viewFile/59/61.

tyché, the Greek for chance. This creative use of chance, *by* the individual, but necessarily drawn *from* and working *for* the community of being of which the individual is a part, is characteristic of the play between habit and chance event which makes all evolutionary life, biological and cultural, possible. Peirce called this principle of connectedness, in this reminiscent of A. N. Whitehead, agapism. It links every evolutionary event in the universe in a play of semiosic patterns and exchange. Martin Heidegger called this relatedness "the mirror play of the simple one fold of earth and sky, divinities and mortals" (Heidegger 1975a: 179). In our own modern period, Heidegger thought that this interrelatedness of things, a proper thinking about being as relation, had been forgotten – except by the poets (Heidegger 1975b: 91–142).

The poet's job is the use of habit as formal constraint, as carrying vehicle, for the unsettling of habit by difference. Poetic form and biological form stand in a homologous relation; it is the regularity of form (or habit) which makes creative evolution possible as formal disruption affording the possibility of *new* meanings (or functions). This unsettling of habit has a processual temporal dimension also. Samuel Taylor Coleridge's argument that the past in memory is essentially creative and constructive *in the present* is another exemplary case of nonlinear looping semiotic causation (Barfield 1971). A similar idea is expressed by T. S. Eliot (1997[1920]) in "Tradition and the individual talent", where the new poetic voice rearranges our understanding of the poetic voices of the past, and also by the idea of downward causation in biology where subsequent developments rearrange or alter antecedent ones. To use Stuart Kauffman's (2003: 1–24) example, what was simply a "fish jawbone" *becomes* understood as "mammalian ear". A jawbone, it turns out, was always an ear in waiting; what was once just for the digestion of food becomes a matter for the digestion of different kinds of nourishment: a voice, a tune – or even a lecture.

To be overwhelmed by habit, and to fail to see that both nature and culture are lived as acts of something like imaginative mind, creatively open to chance, is to be too caught in that degraded form of imagination that Coleridge calls 'Fancy'. This is, he says, "the lethargy of custom" and "the film of familiarity and selfish solicitude" (Coleridge 1817: ch XIV). As Owen Barfield writes in *What Coleridge Thought*, in this condition "the mind is in thrall to the lethargy of custom, when it feeds solely on images which itself has taken no part in producing" (Barfield 1971: 87; Coleridge 1817). Here, too, creativity ('Imagination' proper, brought forth in the biosemiotic work of the self) is recognized as the necessary counterpart to necessary habit ('Fancy' as conventional imagining).[3] It's also worth noticing that, for Coleridge

[3] Clearly, all imaginative creation is dependent upon what has gone before. The distinction which Coleridge is making, and I am endorsing, which is clarified further in the quote from "Dejection: An ode" below, is that genuine creativity consists in making a new life out of the

also, properly creative being is fundamentally relational and productive. As Barfield, quoting Coleridge, writes: "imagination *is*, and fancy is *not*, "the very power of growth and production"' (Coleridge 1817 quoted in Barfield 1971: 88).

Returning to Hardy's poem, we can note the parallels in the way the poet's new insight draws upon antecedent articulations. The Christian imagery of the midwinter birth of hope is there, of course, but so too are its earlier pagan hisses: tree worship and animism, the whispers and clicks of wind, water and earth meeting. The poem is full of sibilant sounds meeting the resistant consonants of soil and stone; it must have been raining or sleeting when Hardy was out walking that day. These take the 'auditory imagination' of both writer and reader back to the fabric of much earlier biosemiotic scaffoldings. Here is Eliot's famous formulation:

> What I call the "auditory imagination" is the feeling for syllable and rhythm, penetrating far below the conscious levels of thought and feeling invigorating every word; sinking to the most primitive and forgotten, returning to the origin and bringing something back, seeking the beginning and the end. It works through meanings, certainly, or not without meanings in the ordinary sense, and fuses the old and obliterated and the trite, the current, and the new and surprising, the most ancient and the most civilised mentality. (Eliot 1964[1933]: 118)[4]

Seamus Heaney's essay "Englands of the mind" uses Eliot's insight in order to explore what Heaney calls the "deposits in the descending storeys of the literary and historical past" (Heaney 2003: 77–78). His examples come from the poetry of Ted Hughes, Geoffrey Hill, and Philip Larkin. There, "Hughes's is a primeval landscape where stones cry out and horizons endure, where the elements inhabit the mind with a religious force, where the pebble dreams 'it is the foetus of God'" (Heaney 2003: 78). Hill's poems, on the other hand, bear the mark of the Norman invasion: "His elegies are not laments for the irrevocable dispersal of the *comitatus* and the ring-giver in the hall, but solemn requiems for Plantagenet kings […]" (Heaney 2003: 79). Larkin, nearer to the surface of the present, speaks in a language where "trees and flowers and grasses are neither animistic, nor hallowed by half remembered druidic lore; they are the emblems of mutability. Behind them lies the sensibility of troubadour and courtier" (Heaney 2003: 79).

But we can reach deeper still: A. E. Housman (1986[1955]: 144) notes that "poetry indeed seems to me more physical than intellectual'. And, going even deeper into the cellars and foundations of the biosemiotic self, D. H. Lawrence, writing on

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past, not in mere derivative imitation. Resemblance and repetition or habit (metaphor's initial move) are inevitable; it is the tiny bit of difference (metaphor's "second move" so to speak) that counts.

[4] D. H. Lawrence (1985) was extremely alert to this aspect of Hardy's writing.

feelings (not emotions) expressed in the writing and reading of the novel, especially in its characters, suggests that

> man is the only creature who has deliberately tried to tame himself.
>
> . . . [but]
>
> Now we have to return. Now again the old Adam must lift up his face and his breast, and untame himself… In the very darkest continent of the body, there is God. And from Him issues the first dark rays of our feeling, wordless and utterly previous to words; the innermost rays, the first messengers, the primeval, honourable beasts of our being, whose voice echoes wordless and forever wordless down the darkest avenues of the soul, but full of potent speech. Our own inner meaning.
>
> Now we have to educate ourselves …by listening. Not by listening in to noises from Chicago to Timbuctoo. But listening-in to the voices of the honourable beasts that call in the dark paths of the veins of our body, from the God in the heart. Listening inwards, inwards, not for words nor for inspiration, but to the lowing of the innermost beasts, the feelings, that roam in the forest of the blood, from the feet of God within the red, dark heart. (Lawrence 1985: 203–5)

Finally, when we want to think about proper living thought coming in, we can turn for an example to Hughes' well-known poem "The thought fox" which describes the process as a kind of abductive animal canniness. The poem starts with loneliness and silence, a starless midnight forest, a ticking clock, and the poet's blank page. Beyond the consonants of earth and forest "hacking and hedging and hammering down", there comes, "fluid and vowelling and sibilant" (Heaney 2003: 81), that shockingly urgent "something else is alive":

> I imagine this midnight moment's forest:
> Something else is alive
> Beside the clock's loneliness
> And this blank page where my fingers move.

But then comes the quickening:

> Through the window I see no star:
> Something more near
> Though deeper within darkness
> Is entering the loneliness:
> . . .
> Till with a sudden sharp stink of fox
> It enters the dark hole of the head.
> The window is starless still; the clock ticks,
> The page is printed.

The poetic voice is made in the magical den of the mind where animal meaning lives. The middle stanzas tell us something about the nature of the thought fox:

> Cold, delicately as the dark snow,
> A fox's nose touches twig, leaf;
> Two eyes serve a movement, that now
> And again now, and now, and now
>
> Sets neat prints into the snow
> Between trees, and warily a lame
> Shadow lags by stump and in hollow
> Of a body that is bold to come
>
> Across clearings, an eye,
> A widening deepening greenness,
> Brilliantly, concentratedly,
> Coming about its own business

We can see that this is a creature of poiesis, constantly on the lookout for signs, a maker of meanings. But also, Hughes's *anima* is, as with the lively source of so many inventions – perhaps particularly aesthetic ones – a creature of chance – a wily and opportunistic fox. Nothing must be approached directly, or willed.

There is no meaning in the chance event itself; meaning is made from the ceaseless play of a mind that is a connoisseur of magical coincidence, and determined to make something out of it. Supposedly modern, rational and scientifically educated people often ask, with great frustration, why so many people remain superstitious and engaged in magical thinking. The right answer is not because they are stupid or insufficiently educated in the ways of science; it is because *that*, mysteriously and magically, *is how the human mind works*. It is capable of taking what seems to be a small hint or clue, and of building from it, via the mind's vast web of connections, an hypothesis about what this new thing might mean, about what it should be associated with, and about what its implications might be.

The necessary structure of the sign, regardless of there being any minds in actual existence, describes the structure necessary to *any* mind also. In other words, mind is a sign. It is open, unfinished, and capable of growth. Or perhaps it would be more accurate to say that mind is as many potential billions of sign relations as there are grains of sand in the whole wide world.

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