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Further variations on a theme of Quine (1977)

Annals of linguistic archaeology:

Feynman once cracked a Mayan codex on a dare; at least that was the way he told the story. He knew that they did arithmetic in base 20 and guessed the rest of it by assuming that the magic numbers embedded in the text had some astronomical significance. Presumably if the telegram from Mars contained a lot of references like this, you'd be able to make sense of it. — If we have some idea *what they are talking about*. — If the signal arrived on the radio, at least we could talk about radio. Maybe.

Another illustration is the story about the dude who first deciphered the old Sumerian tablets, and how he deduced that, since the writing had to be done (more or less) with a hammer and chisel that you read it from left to right,[1] that the inscription probably began with some standard formula like "X, King of Kings, son of Y, King, …", etc., etc., — compare cracking the German naval codes by guessing at the form of the standard header — and was able to refer to historical data to confirm his hypotheses about which kings they had to be referring to. — You might not be so lucky with the inscriptions on the back of one of Kubrick's monoliths.

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Suppose you found a sheaf of computer code for an unknown machine; could you figure out what it did? (Even knowing the code and the machine, could you figure out how it was used?) — Compare the problem of deducing the organism from its genetic code: how much you have to do about how the code is

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[1] Of course he *also* knew that most people are right-handed.

implemented, triplets, amino acids, polypeptide chains, folding, etc. The "machine" in this case is enormously complex.

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There is a curious old Edwardian scifi novel by George Griffith called *A Honeymoon in Space* [1901] in which ambassadors of Empire arrive on Mars and discover the inhabitants speak English; an impossibility which is blandly explained by the protagonist as the result of evolutionary pressures: "After all, what we call speech is only the translation of thoughts into sounds. These people have been thinking for ages with the same sort of brains as ours, and they've translated their thoughts into the same sounds. What we call English they, I daresay, call Martian, and that's all there is in it that I can see."

{…}

Of course the problem doesn't disappear if there are no Martians. Since eventually we'll manufacture our own.

{…}

The example of the projections of a ring— a solid rectangle from one perspective, a round toroid from another. Two aspects of the same thing with no obvious geometric relationship — they are not topologically equivalent, e.g. So here are two ways of looking at the same thing that simply don't translate into one another.

Even simpler, the evergreen parable of the six blind men and the elephant: does the rope translate into the wall?

trunk = thick snake

ear = fan

leg = pillar like tree-trunk

side = wall

tail = rope

tusk = hard, smooth, like a spear

— the conclusion being, No, though there is a unifying hypothesis in terms of which they can all be interpreted. (The elephant.)

{…}

Considering the projections again: the problem can be rendered arbitrarily complex by increasing the dimension (a sort of Grassmann algebra to it, k-dimensional projections of some n-dimensional object for any k < n); with the expectation, again, that for a compact convex object anyway, a finite set of projections may suffice to recover it.

The picture of successive refinements of partial realizations which are not mutually compatible.

{…}

The assumption that a sequence of successive approximations (theories) converges to a limit (the complete theory, the truth) is in topological terms one of compactness. You assume the world has bounded complexity, in a certain sense, so that any two different partial descriptions can be integrated into a more complete description *and this process eventually terminates*. — You have maps of Hawaii and Madagascar, for instance, and eventually these find their place on the *finite* globe. But nothing

guarantees this finiteness. And the difference between "objective reality of unbounded complexity" and "subjective basis for reality" is essentially zilch.

So this is the actual content of the Whorf thesis, the love that dares not speak its name: languages that *really* cannot be translated into one another depict different realities.

— Well. — Borges dares to say it out loud.

{…}

Borges on the languages and mathematics of Tlön: "The moon rose above the river" = "hlör u fang axaxaxas mlö" = "upward beyond the onstreaming it mooned" — etc.

The whole idea of spatial objects inexpressible (note this would essentially be the case if we lived underwater), causality dissolves, the only science is psychology, and so on.

{…}

As a particular problem of some interest, whether two "languages" (really you want some Kantian expression like "forms of representation" here) can both deal with — something like — the positions of objects in space — and yet fail to agree on its dimensionality.

(As an epistemological problem, this later turns into the question of whether you could train people to play video games whose action took place in four dimensions. — Which immediately raises the question: don't air traffic controllers do this already? In fact don't they have to visualize phenomena in six dimensions? since their perceptual world must be more like a phase space, in which objects have positions *and* velocities.)

{…}

The application to scientific languages: the discontinuities Kuhn talked about, the paradigm shifts, represent domain boundaries (as they say in theoretical physics) across which translation isn't possible:[2] one might be using the same words, or appear to be, on both sides of the divide, but they mean quite different things. — So there is a question of the evolution of scientific language.

The Greeks talked about four elements, and we talk about 92; there's an obvious difference in complexity, and how did it come about? In some fashion learning more about the states of matter did not just add folders to some pre-existing filing system, but changed and expanded it in an unanticipated way. So how could that happen?

{…}

An even more obvious application is to the history of consciousness. The British nitwits, of course, would insist that the usual apparatus of the Ego, the "external world", the internal monologue, etc., has been wired in from all eternity and is reflected in invariant properties of language. But clearly (see Bloom et al. on Romanticism and Consciousness) much if that has been invented, and you can trace its evolution through the evolution of literature.

{…}

Joyce could read Homer — obviously — but could Homer have made sense of *Ulysses*? — He could have learned to, like any student, but this again is a matter of "going native" to internalize

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[2] I.e. these are also phase transitions of a sort. — Pattern recognition, and the old Gestalt vase/face puzzle, have similar explanations.

a language; and with it a different matrix for the interpretation of experience.[3]

[the observation that the Egyptians had a very different sense of self, that they were open from behind, masks]

To expand (slightly)[4] on a point made by H.D.F. Kitto:[5] there is a passage in the first book of the *Iliad* in which Achilles and Agamemnon quarrel, and Achilles is only restrained from attacking Agamemnon by an apparition of Athena — who convinces him,

About this Kitto says:

> … two forces, contend in Achilles' mind, blind rage and wise restraint. We might say, "By a superhuman effort of self-control…", the Greeks said, "By the help of some god…", and the Greek poet or vase-painter would portray Athena, in bodily presence, counseling Achilles. The difference is not great; and the fact that Achilles has his strength from a god … does not in the least detract from the greatness of Achilles: the gods do not so favour

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[3] I love this shit. It *sounds* like I am saying something even though I'm not. "Matrix for the interpretation of experience" might as well be "dormitive virtue", for all that it really says about the semantic infrastructure that supports language. — There *is* one; maybe best to leave it at that.

[4] This illustration occurred to me as a parenthesis in the refutation of — well, Strawson was usually the punching bag in these tirades — and its intended scope was limited, because it seemed obvious that any *positive* assertions about the consciousness of the ancient Greeks would have to be outrageous bullshit. Imagine my annoyance when Jaynes referred to exactly the same passage in *The Origins of Consciousness* and used it to spin a fairy tale about "the breakdown of the bicameral mind". — Misquoting and misinterpreting it in the process, incidentally. As someone might have said, against the insistent determination to take a fragment of an idea and make a quick buck off it the gods themselves contend in vain.

[5] H.D.F. Kitto, *The Greeks.* [Penguin, 1951.]

> ordinary men, and he whom they favour is not ordinary. We are not to think that the gods suddenly took up any weakling and gave him strength: they did not behave like this.

So though there is a concept of psychological causality behind this picture after all, it is expressed in a language which, it is obvious, does not translate into modern terms, because it is founded on a different concept of the Self.

That this language corresponded to a different form of experience is clear because people, at least extraordinary people, have had visions and communed with apparitions well into modern times: Boethius talked about Philosophy appearing to him in his prison cell, Dante had waking hallucinations that were apparently very vivid, see *La Vita Nuova*, and Ramanujan said his results were given to him in his dreams by the goddess of Namakkal. — Given the uncanny nature of Ramanujan's results, this is as good an explanation as any.

{…}

The counterargument is that evolution solves similar problems in similar ways. That there is a space of paths, a measure of difficulty, and when an optimal solution exists, it will be found over and over again.

Synthesizing nutrients. The design of the eye.

The question again is that of the uniqueness of the solution. Like the question of kinetics.[6]

{…}

Why you would be optimistic about decoding a message from another star: it is something in nature, after all, and nature is decipherable.

There wasn't any guarantee we could make sense of planetary orbits or falling bodies either, but the hidden harmony carried us through.

Something like Wigner, "the unreasonable effectiveness of mathematics": we suspect the existence of the urGrammar which is the basis of meaning, the invariant. So it is exactly that: the assumption of the invariant core.

Why you would not be optimistic: the Gödel argument, essentially, the realization that being able to code the description of Nature *into* Nature renders it indeterminate. — Nature per se — to first order — you might suppose to be decipherable, but decipherability itself? No.

{…}

Though it does seem plausible that if we received radio signals we could make sense of them. Because this in effect begs the question, concedes the hardest part.

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[6] Perhaps that's too cryptic: suppose you have a large flat pan, with water sloshing around in it randomly, and the rim of the pan isn't uniform, but scalloped, something like a clamshell, going up and down. Where is the water going to get out? obviously the answer will depend on how many dips there are, whether they're all more or less the same height or whether there is a statistical distribution to the heights or whether (as is often assumed without justification) there are a lot of slight dips and one big one.

The real question is what might constitute a "signal". and whether we'd recognize it as such.

What *is* language? Can there be some deeper means of symbolic expression? Something we don't understand at all? Something completely beyond our ken?

Some further step on the evolutionary ladder as far removed from English as English is from the signals exchanged by bees. How could we possibly recognize that?

What we have in common with ants: metabolism, the need to find food and eat, the urge to reproduce, the basic parameters of the physical world we have to navigate. — But does the sexual urge in humans translate into the drive to reproduce as experienced by an ant? this is a category mistake, they aren't even the same kind of individual, the drive is expressed collectively.

{…}

What does writing *consist* in, anyway? you fix on some internal picture you are trying to capture, and strain to find the proper form of words that will express it.

But if we really want to understand symbolic representation, it is that, the internal picture, that we must attempt to understand.

(This doesn't mean chucking it all in and going back to mumbling indistinctly about the matter of introspection. Some much more concrete model is necessary, for which the likely source of inspiration is not psychology but engineering. — The question "How would I build it?" is the first that should come to mind. Wittgenstein couldn't quarrel with that.)