Chris Knight

The Enigma of Noam Chomsky

Responding to Chomsky's interview in *Radical Anthropology* in Issue 2, **Chris Knight** explores the paradoxical relationship between his activism and his science.

Radical Anthropology: Chomsky is a celebrated intellectual figurehead on the left. In your articles,[1] you always seem negative about his overall contribution. Why is that?

Chris Knight: I'm not negative at all. Whenever I read Chomsky on, say, US policy in the Middle East, I'm always in wholehearted support. Who else tells the truth so bluntly and so fearlessly?

RA: So why the criticism? Some articles – in the *Weekly Worker,* for instance[2] – have been pretty savage.

CK: That's a different Chomsky. In those articles I'm talking about the scientist. Distinguishing between this person and the activist, an interviewer once asked him: 'What do they say to each other when they meet?'. Chomsky replied: 'There is no connection, apart from some very tenuous

as a computational device.[4] It's almost as if Chomsky the activist wasn't responsible for the science. That comes from a different region of his brain.

RA: Our readers might find this hard to believe. What does he actually say?

CK: 'The one talent that I have which I know many other friends don't seem to have', Chomsky explains, 'is I've got some quirk in my brain which makes it work like separate buffers in a computer.'[5] One component produces science for a definite intellectual constituency while the rest of him produces political stuff for a quite different audience. As a scientist, he's anxious to avoid slipping over into politics; as an activist, he strives to avoid anything to do with science.[6] Each separate role comes with its own appropriate conceptual approach and corresponding

He uses language precisely to communicate – to denounce his own state, his own government, his own employers, his own institutional milieu. Short of denouncing his own science, Chomsky opposes just about everything he embodies in his alternative role.

RA: Are you saying he's two-faced – telling one audience one thing and another something else?

CK: The struggle to survive under capitalism forces us all into something like double-dealing for much of the time. We're forced into collusion. We compete to find jobs, to survive as wage-slaves, to establish at least a modicum of economic security for ourselves. Yet equally we need to hold our heads high, to maintain our self-esteem. It's not always easy to reconcile such conflicting priorities. It's just that Chomsky exemplifies

I prefer to think of him as the conscience of America. Once you view him in that light, the mysteries begin to clear

relations at an abstract level…'[3]

RA: So Chomsky's really two people?

CK: In the 1960s he was so active people thought there must be six Chomskys! But, yes, two at least. When he speaks or writes politically, his passions are engaged and he takes full personal responsibility. In his scientific role, something quite different seems to be happening. According to his own account, one modular component of his brain – 'the science-forming capacity' – functions autonomously

language, resistant to translation across the divide. 'Now exactly how one can maintain that sort of schizophrenic existence I am not sure', Chomsky admitted on another occasion, 'it is very difficult'.[7]

In his scientific capacity, Chomsky views language as a biological 'organ' or 'device'. As such, it's devoid of humour, metaphor, emotion, communicative intent, social meaning or anything else people normally think of as language. Meanwhile, the other Chomsky continues to speak and write much like the rest of us.

this more sharply than most. So 'two-faced' would be unfair. I prefer to think of him as the conscience of America. Once you view him in that light, the mysteries begin to clear. 'What is important', as he explains, 'is to expose the crimes of my own state, which are often hidden from view by the propaganda institutions'.[8] His political writings are directed first and foremost against the military-industrial elite employing him. When he began working at MIT, in his own words, 'funding was almost entirely the Pentagon. About half the Institute's budget was

coming from two major military laboratories that they administered, and of the rest, the academic side, it could have been something like 90% or so from the Pentagon. Something like that. Very high. So it was a Pentagon-based university. And I was at a military-funded lab.'[9]

Chomsky was conducting his researches within what had originally been part of the MIT Radiation Laboratory, in which radar had been developed during World War II. Now that Soviet Russia had replaced Nazi Germany as the main enemy, the military were interested in developing electronic systems for

which he moved. In May 1995, John Deutch was sworn in as Director of the Central Intelligence Agency following a unanimous vote in the Senate, making him head of the intelligence community – in charge of all foreign intelligence agencies of the United States. Shortly afterwards, Chomsky was interviewed about how well he'd known Deutch as a professional colleague at MIT. 'We were actually friends', replied Chomsky, 'and got along fine, although we disagreed on about as many things as two human beings can disagree about. I liked him. We got along very well together. He's very honest,

scientific elite. How could anyone cope – without a modular mind?

We can surely understand the very personal horror, almost personal responsibility, Chomsky must have felt while working as a respected scientist in the belly of the beast. Denouncing other people's crimes, as he puts it, is all too easy. One must expose one's own crimes – the crimes of one's own government, one's own institutional milieu – to retain one's self-esteem, to be able to 'look at oneself in the mirror without too much shame'.[13] Chomsky could reconcile his conscience with the job he loved

We're all supposed to keep political activism locked up in a separate box, insulated by a firewall from science. Mindless activism on the one hand; tongue-tied science on the other – that's been the tragic result

purposes of surveillance, weapons 'command-and-control' and so forth.[10] Chomsky wasn't going to roll up his sleeves and build anything which actually worked. On the other hand, he had been inspired to take up linguistics thanks largely to his activist friend Zellig Harris, one of whose interests was machine translation. The project to develop automatic translation by equipping a machine with something like 'universal grammar' was officially part of Chomsky's first job. Although he had other ideas, Chomsky evidently felt at home analysing language in terms of postulated 'mechanisms', 'devices', 'circuits', 'switches', 'inputs', 'outputs' and so forth. So it's not that Pentagon pressure to develop their 'language machine' distorted Chomsky's thinking about how to revolutionise linguistics. It's not that he took the money and sold his soul. In purely intellectual terms, he was already there.

Now let's consider the circles in

very direct. You know where you stand with him.'[11] Chomsky actively supported Deutch's candicacy for the President of MIT, much to the surprise of his colleagues. In the event, that bid failed owing to faculty opposition.

It's important to grasp what's happening here. How many left-wing academics or activists maintain friendships of that kind? I'm not saying it's necessarily wrong. Once you've committed yourself to your chosen profession, you may have little choice. But Chomsky's 'schizophrenic existence' surely starts here, among such intense social and professional contradictions. According to his own account, 'the CIA does what it wants', conducting assassinations, bombings, invasions, mass murder of civilians and various other crimes against humanity.[12] While aware of the criminality of his institutional milieu, Chomsky rubs shoulders with these people, works for them, is part of the same professional and

only by publicly lashing out. He had to denounce the Pentagon – the military-industrial complex sponsoring his own research. Insofar as that complex possessed a conscience, Chomsky was it. He has retained that unique status to this day. That's why people come from far and wide to listen to him. It's not just his politics and it's not just his science. What attracts people – what carries conviction– is the painfully evident tension between the two.

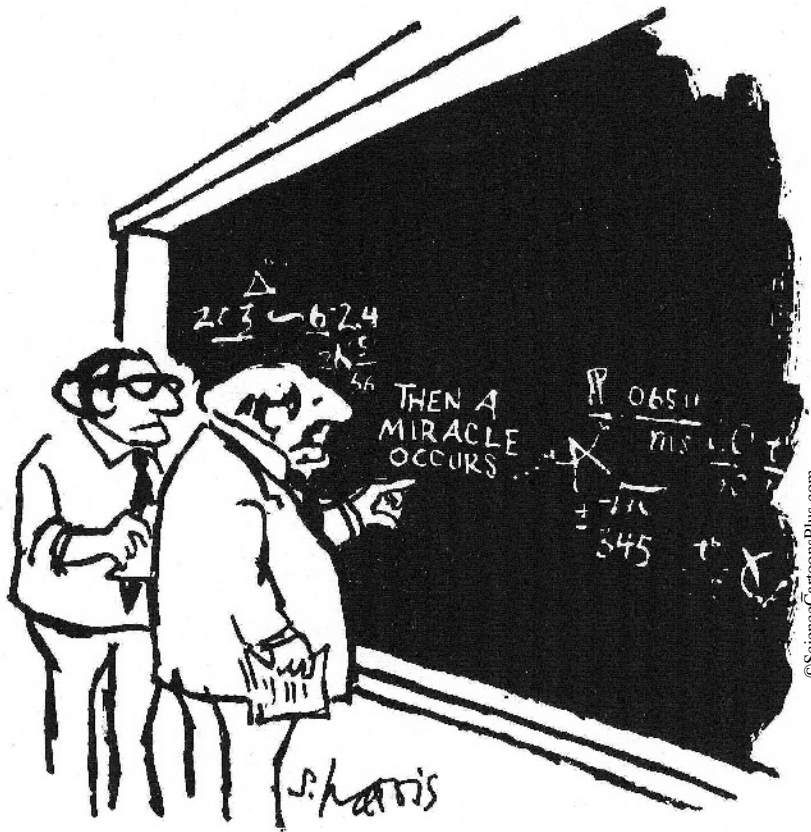**RA:** Yet you are implacably opposed to his science?

CK: Chomsky resists the behaviour of the military-industrial elite while endorsing and embodying its philosophy – its utterly bourgeois notion of 'science'. Let me put it this way. Imagine the most reactionary possible ideology. Imagine bourgeois individualism carried to its absolute logical extreme. Imagine a philosopher who took René Descartes' dictum 'I think, therefore I am!' as his point

of departure. Imagine going further even than Descartes in insisting that language exists only in the individual head, not to enable social communication but merely to enable thought. According to this ideology, no one else is required. You don't need language to share with anyone else, listen to anyone else, learn

is that I think they are relatively unimportant... Learning language is something like undergoing puberty. You don't learn to do it; you don't do it because you see other people doing it; you are just designed to do it at a certain time'.[14] According to Chomsky, the underlying principles of grammar

because it's already there, being present in every child thanks to its DNA. The child just has to find out which locally conventional sound to attach to the carburetor-concept already in its brain. Asked whether *Homo sapiens* possessed the concept of a carburetor thousands of years ago, long before the invention

The brain-equals-digital-computer theory marginalises anthropology. Computers don't have a sense of humour, don't understand irony or metaphor, don't try to cheat or lie, don't have sex, don't pursue political agendas

"I think you should be more explicit here in step two."

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of motor cars, Chomsky insists that we must assume no less. As he explains: 'However surprising the conclusion may be that nature has provided us with an innate stock of concepts, and that the child's task it to discover their labels, the empirical facts appear to leave open few other possibilities.' [15]

So culture is irrelevant: nothing needs to be learned. Now add to this that you needn't bother about history: the language organ doesn't change, it doesn't undergo significant variation, it doesn't reflect social or political upheavals, it doesn't evolve. Imagine someone who claimed that language was conferred on the first human being in 'perfect' or 'near-perfect' form as if by 'a divine architect'.[16] Imagine all that and you're getting close to the scientific worldview of Noam Chomsky. I'm against it not only because it's nonsense but also because it's reactionary to the *n*th degree.

RA: Does Chomsky really deny language's communicative function?

CK: Language, he insists, 'is not properly regarded as a system of communication... It can of course be used for communication, as can anything people do – manner of walking or style of clothes or

from anyone at all. You know it all already thanks to your genes. As Chomsky explained following a lecture about language acquisition: 'I emphasized biological facts, and I didn't say anything about historical and social facts. And I am going to say nothing about these elements in language acquisition. The reason

are internal features of your innate 'language organ', installed somewhere in your brain. Even the meanings of words are fixed internal features of this organ, so not even these need be learned. Take the word 'carburetor', for example. According to Chomsky, no child needs to learn this lexical concept

hair, for example. But in any useful sense of the term, communication is not the function of language, and may even be of no unique significance for understanding the functions and nature of language.'[17]

It's easy to see why Chomsky must say such things. To communicate, you need someone else. If language were to be regarded as communicative – hence social – then its study would amount to some kind of social science. Linguistics might then have to retain some connection with the social science tradition, influenced as that is by Marx. To make matters worse, it might have to connect up with Darwinism, hence with problems of conflict and competition – again matters of social dynamics, social relationships.

person suddenly got the language faculty, that person would have great advantages; the person could think, could articulate to itself its thoughts, could plan, could sharpen, and develop thinking as we do in inner speech, which has a big effect on our lives. Inner speech is most of speech. Almost all the use of language is to oneself....'[19]

I've dwelt on all this not to convince you that it's complete nonsense. Of course it's complete nonsense! That's not my point. The job of an anthropologist is to conduct an analysis, something like decoding a myth. Chomsky himself uses the term 'fairy story', so we can agree it's pure myth. But why this particular myth? Why those narrative details and not others? And why Chomsky? Why did that particular figure during that historical conjuncture

a very rare person, almost to the point of non-existence, who can tolerate what's called "cognitive dissonance" – saying one thing and believing another. You start saying certain things because it's necessary to say them and pretty soon you believe them because you just have to'.[20] Chomsky's achievement in this respect – his success in splitting himself in two – then became in subtle ways a model for the rest of us. To this day, we're all supposed to keep political activism locked up in a separate box, insulated by a firewall from science. Mindless activism on the one hand; tongue-tied science on the other – that's been the tragic result.

RA: But isn't this just an arcane dispute over what language is and how it might have evolved? Why does it matter so much? How far can

The scientific community needs to defend itself against political interference, no matter how cleverly it is concealed. If science is to come first, we don't have a choice as to whether to become politically active. If you're inactive, you're colluding in someone else's politics

Anticipating where all this might lead, Chomsky takes pre-emptive action. Language, he legislates, is unconnected with anything else in the known universe, whether natural or cultural. It doesn't have a history; it didn't evolve. 'To tell a fairy story about it, it is almost as if there was some higher primate wandering around a long time ago and some random mutation took place, maybe after some strange cosmic ray shower, and it reorganized the brain, implanting a language organ in an otherwise primate brain'.[18] Why would such a miracle benefit an isolated mutant, utterly alone in the universe – with no one to talk to? Again, the objection is anticipated and legislated away: 'Actually, you can use language even if you are the only person in the universe with language, and in fact it would even have adaptive advantage. If one

have to invent that curious myth?

Rather than resort to psychological guesswork, let's keep to things we know about – to the institutional constraints. For Chomsky to manage his bifurcated life, linguistics at MIT had to be perceived as non-political. The Pentagon weren't going to fund an anarchist in his anarchist role. His officially sponsored science was one thing, his conscience quite another. His entire position – at the best of times a delicate balancing act – required constant vigilance in maintaining a firewall between the two. To prevent leakage either way, the divide had to be categorical: eliminate every trace of political or even social content from the science, eliminate every trace of scientific content from the politics. How does all this get internalised? Chomsky tellingly observes: 'It's

you attack Chomsky the linguist without attacking his politics as well?

CK: Chomsky has certainly set things up to make it seem politically difficult. Yes, the dangers are real. I would perhaps hold back except for one thing – the revolution needs to be won.

RA: Winning the revolution means overthrowing Chomsky?

CK: Winning the revolution means overthrowing that elitist philosophy, that politics, that class. It means putting science first, over and above the needs of big business or the military. It means informing our practice with what's best in modern science, while at the same time liberating science from its current institutional fragmentation and political marginalisation. More

specifically from an anthropological point of view, winning the revolution means gaining a proper understanding of what it means to be human. The idea of a mutation suddenly installing language is a complete distraction – in my view a deliberate one. Whether language emerged gradually or suddenly, we need to understand the precursors, the constraints and above all the social dynamics. If the process was sudden – as Chomsky claims – that implies a social revolution. Either way, we need to learn as much as we can about that

science?

CK: Chomsky's linguistics is supposedly non-political. In reality, though, it's about as political as you can get. Prior to Chomsky's intervention, no one defined language as biology and nothing else. While everyone agreed that language must have biological underpinnings, it was equally understood to be social, cultural, institutional to the core. It took Chomsky to re-invent linguistics as a rigorously 'Cartesian' discipline – one confined within the borders

scientific, unlike social science. Language enters into everything humans do, so whoever conquered linguistics, subordinating it to the methods of natural science, might well hope to conquer the rest. And so it turned out. In the eyes of his supporters, Chomsky was the figure who 'stormed the Winter Palace', acting as the most prominent standard-bearer for the so-called 'cognitive revolution' which quickly came to dominate much of linguistics, psychology, cognitive science and philosophy. He didn't have to engage directly

The thread connecting Khlebnikov via Jakobson to Lévi-Strauss and Chomsky was a certain conception of freedom — a yearning for necessity imposed not externally but from within

momentous process, that event.

More effectively than any intellectual before or since, Chomsky has made it seem illegitimate to base revolutionary politics on science. Activists, he says, should keep science at arm's length. You couldn't get further away from Marx! Here's an example of how he justifies that stance: 'The idea that deep scientific analysis tells you something about problems of human beings and our lives and our inter-relations with one another and so on is mostly pretence in my opinion – self-serving pretence which is itself a technique of domination and exploitation and should be avoided'.[21] Marxist intellectuals, says Chomsky, always try to manipulate the masses by invoking the authority of science. His own view is that activists don't need science at all: everything people need to know about political matters is present on the surface for all to see.

RA: But maybe Chomsky is right on that score? Surely it would be disastrous to mix up politics with

of supposedly 'natural' science.

During the late 1950s and 1960s, Chomsky received massive institutional support for his intervention, which promised to turn the tide against the continuing intellectual influence of Marx. To finally discredit Marx, there seemed to be no choice but to go the whole way – the entire western intellectual tradition of social science had to go. Could the clock be turned right back to Descartes or even to Plato? Chomsky offered nothing less. No other intellectual was in a position to deliver on that extraordinary promise. No one else had the necessary moral authority or ambition. And as it turned out, it was a hugely successful attack, whose ramifications are still very much with us.

You have to remember that linguistics, in the immediate post-war period, was effectively 'the crown jewels'. It was that discipline within the humanities which seemed closest to natural science. Mathematics and physics were viewed as genuinely

with anthropology: the revolution was powerful enough to produce ripples almost everywhere. The agenda was to discredit Marxism and replace it with a 'naturalised' psychology – psychology conceptualised as natural science. Cultural and social phenomena would from now on be explained by invoking this or that module, this or that fixed property of the brain conceived as a digital computer.

Central to the 'cognitive revolution' was this bizarre idea: the human brain is a digital computer. It's a theory which marginalises evolutionary biology, anthropology, sociology and the humanities in general – intentionally so. Computers don't have a sense of humour, don't understand irony or metaphor, don't try to cheat or lie, don't have sex, don't pursue political agendas. Look at Chomsky's language organ: it's as disembodied and lifeless as that. There's apparently no connection with the rest of the brain, and no connection either with the rest of natural or social life. Provoked by Chomsky as he relentlessly pursued

his 'revolutionary' agenda, the 'linguistics wars' of the 1960s and 1970s were a disaster for everyone – an intellectual defeat from which we still haven't recovered.

The outcome is that our current state of knowledge resembles a broken mirror, each fragment telling its own story. We need to put together the big picture, fighting for conceptual unification regardless of the political consequences. You can't get away from politics – from power differences, conflicts of interest and so forth. In principle,

psychology', it has only ever been applied to just one species – our own. Have you ever heard of 'the evolutionary psychology of elephants'? Or 'the evolutionary psychology of social insects'? Such things don't exist because no self-respecting biologist would ever consider going down that road. You can't study animals by extrapolating from supposed computational mechanisms inside their brains. Animals think, they are intelligent, they are conscious in various ways. But to understand what's happening, scientists set out from what they do.

and astral projection' module.[24] And so it goes on. Anthropologist Pascal Boyer views religious ideas as wholly 'natural': the modular brain determines which notions floating around are likely to get discarded and which passed on.[25] Pioneers in establishing this Alice-in-Wonderland approach are psychologists John Tooby and Leda Cosmides. Not satisfied with modules in single digits, they need vast armies to solve every conceivable problem. 'On this view', as they explain, 'our cognitive architecture resembles

Have you ever heard of 'the evolutionary psychology of elephants'? Or 'the evolutionary psychology of social insects'? Such things don't exist

however, scientific research involves accountability and collaboration on a level transcending such things. The scientific community needs to defend itself against political interference, no matter how cleverly it is concealed. If science is to come first, we don't have a choice as to whether to become politically active. If you're inactive, you're colluding in someone else's politics.

RA: Can you explain the impact on Darwinism of that 'cognitive revolution'?

CK: A completely new version of Darwinism emerged, based on the idea that humans alter their behaviour according to how corresponding 'modules' evolve inside their heads. Nobody ever thought of explaining animal behaviour in this way, but then no one ever thought of animal brains as digital computers – they're evidently nothing of the kind. So we had this new kind of Darwinism, utterly different from anything Darwin himself could remotely have envisaged. Described by its supporters as 'evolutionary

So-called 'evolutionary psychology' is restricted to humans because our minds alone are imagined to be digital computers whose internal features can be studied independently of what we actually do.

A person, according to evolutionary psychologist Steven Pinker, is a 'digital mind in an analog world'.[22] The mind/brain is a digital computer, so it doesn't matter what the physical brain is actually made of – digital 'software' (mind) carries identical information regardless of the 'hardware' (brain) on which it runs. So let's ignore matter: mind comes first. In similar spirit, archaeologist Steven Mithen pictures *Homo sapiens* evolving with a mind divided up into (a) social, (b) natural history and (c) technological intelligence – three computational modules in all.[23] But what about, say, shamanism? What's the modular explanation for that? The answer duly appeared in a scholarly journal: shamanism is the distinctive output of a previously unsuspected 'soul flight, soul journey, out-of-body experience

a confederation of hundreds of thousands of functionally dedicated computers (often called modules) designed to solve adaptive problems endemic to our hunter-gatherer ancestors. Each of these devices has its own agenda and imposes its own exotic organization on different fragments of the world'.[26] Invent enough modules and you can 'naturalistically' explain what you like.

RA: And the effect on anthropology?

CK: In anthropology, the results have been far-reaching and overwhelmingly reactionary. Take, say, the study of cargo cults in Melanesia. When these were first studied, anthropologists treated them as indigenous responses to colonial and post-colonial exploitation. The natives apparently suffered from a strange delusion. In the light of their own tribal values, they imagined there must be justice somewhere in the world. When forced to concede that this wasn't so – the rule of the white man was manifestly unjust – they refused

to give up. Instead, they shifted responsibility from the living to the dead. On the day when the dead returned to life and established their own rule, justice would at last be done and seen to be done. The white man's cargo planes and ships destined for distant lands would miraculously reverse direction, bringing untold riches to those who had created all that wealth in the first place.[27] The new 'modular' approach, however, is to explain such phenomena psychologically. Exploitation and oppression conveniently disappear. The natives' puzzling behaviour is instead traced back to 'micro-processes at the psychological level'.[28] The mind is a mass of computational modules, and sometimes glitches arise. The effect, needless to say, is to exonerate western capitalism and colonialism. You can guess who'll be funding this kind of anthropology and whose interests are served!

RA: Would you bracket Darwin and Marx together as victims of the cognitive revolution? It seems an unlikely alliance.

CK: Darwin and Marx differed on many things, but they shared a belief in the value of conflict, of internal social struggle, of 'civil war' as engines of change. All history is the history of life-and-death struggle for survival, whether between organisms (Darwin) or classes (Marx). Neither Darwin nor Marx saw the individual mind, whether animal or human, as capable of explaining anything. Both were materialists in that they looked to the body and its material interactions – the struggle to find food, to reproduce and so on – to explain whatever might be happening in anyone's mind.

RA: Presumably Chomsky is not some malevolent scheming mastermind in the pay of the Pentagon? What is the intellectual ancestry here? How does someone of left-wing anarchist inclination end up generating reactionary

scientific theory? Is there some dialectical process starting from a revolutionary tradition?

CK: During revolutionary periods, those struggling for freedom invariably resist the prevailing deterministic logic – the deadening belief in iron laws beyond anyone's power to defy or overthrow. If revolution is imminent, why not seize the moment? Why not defy the law and, while you're about it, why not take on nature's laws as well?

During and immediately following the Russian revolution, artists, poets, musicians and other revolutionary intellectuals became seized with such hopes and dreams, letting their imaginations run wild. This was the period of cubo-futurism and constructivism – libertarian communist/anarchist movements

Agitrop poster by Vladimir Mayakovsky

based on the idea that art was for changing reality, not just passively reflecting it. Form takes priority over content. You dream, you play, you fantasize – and you fight to realize those dreams. In this spirit, Darwin and Marx are turned on their heads. Those stereotypically grey-bearded, grim thinkers' rigidly deterministic, spiritually imprisoning 'laws of history' – whether natural or human – are cheerfully defied and turned upside-down. Revolution transports you from the realm of necessity to that of freedom.

The Russian poet who soared highest with such ideas was Velimir Khlebnikov – the 'King of Time' celebrated for predicting the date of the 1917 revolution back in 1912.[29] Khlebnikov's extraordinary theories about mathematics, historical time and language – about the power of the imagination and the magic of words – heavily influenced the young linguist and literary critic Roman Jakobson. Why does Jakobson matter? Well, in the 1920s he co-founded the Prague school of linguistics. He later became Claude Lévi-Strauss' close friend and source of theoretical inspiration. One final point: in the 1950s, from his office in MIT, Jakobson helped Chomsky to get his first job.

RA: So there's a thread linking Khlebnikov to Chomsky?

CK: I've no evidence Chomsky ever heard of Khlebnikov. But Jakobson was a huge influence on twentieth century linguistics, hence inevitably on Chomsky. Jakobson when only a teenager mingled intimately with Khlebnikov, Mayakovsky and the other 'futurists' or 'cubo-futurists', as they called themselves.[30] These iconoclasts instinctively embraced the October revolution, becoming in many ways its principal artistic expression. Khlebnikov explored word roots in his native Russian convinced that he could unearth a 'transrational' language of pure sounds common to humanity. While perhaps not very scientific, his work inspired Jakobson, who helped found a school of linguistics which eventually produced 'distinctive features' theory. If anything about linguistics was truly 'scientific', this was widely tipped to be it. The approach reaches beneath cultural variation to the bedrock of human nature – to genetically determined biology and psychology. The pharynx, tongue, lips and so forth function as digital switches, offering no intermediate states between lips 'open' and lips 'closed', voicing 'off' and voicing 'on'. By combining selected 'features'

of this categorical kind, you can generate any vowel or consonant in any of the world's languages. So it's a kind of universal language rooted in a natural digital apparatus – a universal alphabet of pure sounds.

Is language in its entirety a digital system? And if so, is that a reflection of the innate digital architecture of the distinctively human mind? Under the influence of Jakobson, Lévi-Strauss invented 'structural anthropology' on the basis of just that idea. A decade later, Chomsky was gravitating around the same body of theory. Might it be possible, he wondered, to extend distinctive features theory from phonetics through syntax all the way to meaning – to the possibility of some kind of 'generative semantics'? The idea seemed thrilling since it offered the prospect of explaining language in all its aspects in purely biological, purely naturalistic terms. What happened next is a long story. Suffice it to say that from the moment it was seriously attempted, Chomsky realised the idea wouldn't work. Intractable problems led to bitter disputes culminating in the infamous 'linguistics wars'. Despite this, Chomsky has never let go of the basic idea. He continues to view semantic meanings as somehow 'internal' – as genetically fixed features of the digital mind. The thread connecting Khlebnikov via Jakobson to Lévi-Strauss and ultimately Chomsky is a certain conception of freedom – a yearning for necessity imposed not externally but from within.

RA: So a school of linguistics originating among Russian revolutionary anarchists ends up being sponsored by the US military-industrial establishment?

CK: Yes. And to understand that trajectory is to decode a good chunk of the twentieth century. Why, for example, was Chomsky

working at MIT in the first place? Why did it seem politically acceptable for an anarchist to rub shoulders like that with the US scientific and military elite? Let's remember how all this started. Go back to the 1930s and to Hitler's

Kazimir Malevich, 'The Knife-Grinder'. 1912
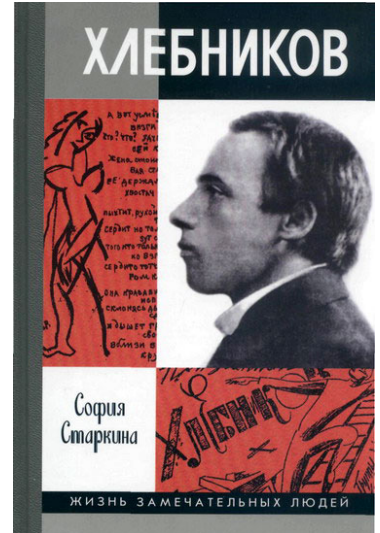
rise in Germany. Across Europe you had a generation of young scientists, many of them Jewish anti-fascists and sympathisers with the revolutionary cause. When war broke out, it was mathematics against the Nazis, nuclear physics against the Nazis, digital computers against the Nazis. In Britain, Alan Turing – theoretical genius behind the digital computer – helped crack the Enigma Code used by the Germans to encrypt military communications. In the United States, of course, scientists were working feverishly on the Manhattan Project – the project to develop the first nuclear bomb. If you wanted an Allied victory, why not work for their war machine, for the military-industrial complex, for your own side's secret agents and spies? Wasn't it all part of the same anti-fascist fight?

A teenager during those years, Chomsky was too much of an anarchist to feel comfortable about collusion with the state. His instincts verged on pacifism:

he went quiet on hearing the terrible news about Hiroshima and Nagasaki. Yet the idea of science against the Nazis was central to the political ethos of the time, especially if – like Chomsky – you were left-wing and Jewish. And that

Velimir Khlebnikov: 'the King of Time'

political culture didn't just die at the end of the war. It lived on. When Chomsky took up linguistics before getting his job at MIT, it was with the encouragement of Zellig Harris, Roman Jakobson and a network of radicalised scientists and scholars in positions of influence, many of them refugees fortunate to have escaped the gas chambers

Inputs and outputs: the Enigma machine

in Europe. Chomsky's approach appealed to them because it seemed almost mathematical, promising understanding beyond mere politics or ideology. Could Chomsky be the Galileo of our age, destined to revolutionize the known world? His friends gave him the benefit of the doubt, ensuring his meteoric rise to ascendancy over linguistics and much else. Revolutionaries usually have to fight their way up. In Chomsky's case, the gods seemed to be hoisting him aloft.

By the 1950s, of course, the official enemy was no longer Germany – it was the Soviet Union. But it wasn't difficult for the US propaganda machine to depict Stalin as the new Hitler, Moscow as the new centre of all evil, the new totalitarian threat. In place of science against the Nazis, you could now have science against Marxism – natural science against oppressive and fraudulent so-called 'social science'. That was the political thrust behind Chomsky's 'cognitive revolution'. Having defeated its enemy on the right, US imperialism needed to target the left.

RA: What's the relevance of all this to our present situation?

CK: There's no point waiting around for a genetic mutation. Becoming human didn't depend on that when language first emerged and it certainly doesn't depend on it now. We need to become aware of the intelligence and power we already have. We've invented the internet – the necessary communications technology – but its potential has yet to be realised. For that, we need a revolution embracing life, politics and science. We need to bring together the social and natural sciences and help solve the mystery of human origins. Whatever the details, the process of becoming human was social. My commitment is to the human revolution: the most successful social revolution in history! We did it once; we can do it again.

RA: So when is the revolution? Any forecasts?

CK: 2017 could be a good year!

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Neil Jackson

Notes

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