

Creativity and freedom: Nicholas Allott considers Chomsky at ninety

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On 15th October 1965 a young American professor of linguistics was scheduled to speak on Boston Common at a demonstration against the war in Vietnam. But, as he recalls, "The event never really took place. It was broken up violently by counter-demonstrators. You couldn't hear the speakers." More serious violence was only prevented by a large police presence. Sixteen months later, a political talk that the professor had given at Harvard on 'The responsibility of intellectuals' was republished by the *New York Review of Books*, and almost overnight he became what he is still is today: the best-known political radical and critic of US foreign policy.

Of course, the professor of linguistics is Noam Chomsky, and that description tremendously underplays his importance. By 1965 his research had already put the study of the structure of language on a scientific footing and made him one of the main movers in a cognitive revolution that was sweeping away behaviourism and scepticism about mental states in psychology and philosophy.

Chomsky turned 90 last year. We are in the seventh decade of the cognitive revolution, and it's more than half a century since the publication of 'The responsibility of intellectuals', during which Chomsky has continued his parallel careers, producing a remarkable stream of books and articles. (The Library of Congress lists 236 books in total under his name, of which 79 are single-authored books, excluding revised editions. These divide between politics and linguistics in a ratio of about three to one, which is probably a fair indication of how he has spent his time.) It's a good time to take stock. What are Chomsky's lasting contributions? And what, if anything, connects his political views to his scientific and philosophical work on language and mind?

Chomsky's importance to linguistics, cognitive science and philosophy remains controversial, but it shouldn't be. His work and that of others, many of them influenced by him – the philosopher Jerry Fodor is another important figure – gradually established the model of mind that is still the only candidate for serious work in cognitive psychology. All modern theories of perception and cognition work the same way: they are computational-representational. Investigating how the mind does anything – for example, how it parses and produces sentences, perceives colour, or makes logical inferences – the goal is to understand what kind of structured states (representations) the mind forms and what operations can be performed to transform one representation into another (computation).

Another crucial assumption is that, like the body, the mind contains distinct systems – mental ‘organs’, faculties or ‘modules’ – which can be studied separately, even if they never work in isolation from each other. Parsing sentences, for example, always involves the use of memory systems (including long-term memory for word-meanings and short-term memory as a workspace) but the language and memory systems work on quite different, proprietary principles. The same seems to be true of visual processing and attention: they work together, but they are best understood as complementary but distinct systems.

Production of a linguistic utterance may be a massive interaction effect, involving many systems: not just the language faculty and memory systems, but also means-end reasoning about how best to put your meaning so as to convey it to your addressee. It is probable that no single theory can explain the messy totality. So it’s plausible that to make progress linguists need to study the system which underlies our linguistic abilities, our linguistic ‘competence’, in abstraction from the ways in which the system is put to use, ‘performance’.

While much of Chomsky’s work on linguistic competence is rather technical, it tries to answer three key questions: What is the system of computations and representations that underlies the ability of a speaker of a language to produce and understand an indefinite number of sentences? What is the faculty, possessed by neonates, that allows them to rapidly develop the adult system – for whatever language they are exposed to? And finally, how did this mental organ for acquiring languages evolve in our species?

Each question leads on to the next, but the later questions also constrain answers to the earlier ones. The competence of an adult speaker obviously cannot require learning such complex rules that children couldn’t do it in the limited time and with the limited input they have. But applying the computational-representational approach to grammar was hugely productive almost immediately, and by the late 1960s, Chomsky, his graduate students and others inspired by him had discovered many previously unknown grammatical phenomena, so the complexity of the system postulated in the minds of speakers was correspondingly increased. Chomsky’s answer to the problem is that most of the complexity is innate, and grammars only differ in which of the pre-existing options they use. If that is right, it explains how language acquisition is possible: it is mostly a matter of selecting from possibilities that are already present in the mind in order to create a system that (more or less) matches the language the child hears.

In more recent work with evolutionary biologists, Chomsky suggests that the limited evidence we have indicates that this innate human ability emerged rather suddenly, some 150,000 years ago. But complex systems do not spring into being fully-formed. So he proposes that much of the machinery was already in place in pre-existing conceptual and vocalisation systems, when two small changes occurred. The first allowed atomic conceptual units to be combined into bigger units. Crucially, the operation can take a unit built that way and combine it with another unit (atomic or complex), and so on. This is recursion, and it is what allows us (given enough patience) to build sentences of any complexity, with sub-clauses containing sub-sub-clauses to any depth. This, Chomsky suggests, provided humans with a language of thought. The second change was to hook the output up to motor systems so that it could be pronounced, and thus used for communication.

This evolutionary hypothesis is obviously speculative, and it remains controversial even among linguists who agree with Chomsky on other topics. Its value so far is mainly in spurring work on how the complexity of the language faculty could result from the interaction of a few simple operations given its basic design constraint: that it is, in Aristotle's well-known formulation, a bridge between sound and meaning.

Discoveries about language acquisition are on somewhat firmer ground. Chomsky has shown that language acquisition requires innate structure: 'blank slate' views of the mind are untenable. Disagreement now centres on whether part of what is innate is specific to language (Chomsky's famous 'Universal Grammar'), or whether innate statistical learning ability and a drive to communicate might suffice. Some would say that the jury is out, but if so the evidence is heavily on Chomsky's side. Constraints have been discovered that have nothing to do with social convention or communicative efficiency. No language allows a sentence like 'Who did you meet Paul and last night?' although what it would mean is clear enough. And opponents of Universal Grammar have not been able to develop models of the acquisition of basic properties of language. A hard problem for those who claim that general statistical learning will suffice is to explain why children are observed to 'try out' only a limited range of grammars, among the vast number of logically possible ones. Still more fundamentally: how could a system that simply looks for statistical patterns infer that certain sentences are ungrammatical – ruled out by the system – while others (the vast majority of grammatical sentences, in fact) are simply so infrequent that they haven't heard them?

The study of what adults possess as 'knowers' of a language along the lines Chomsky set out in the 1950s and 1960s has made spectacular progress. The principles of grammar that have been discovered are not obvious, and have considerable explanatory power – hallmarks of successful science – and we now know a great deal about how languages can differ from each other.

Computational theories need to be explicit: they have to specify every step involved in building up ('generating') phrases and sentences from words. This contrasts with earlier descriptions of languages, which took for granted that their readers were already speakers of a language, so their job was to set out ways in which the language under discussion differed from others. The pedantic focus of generative grammar – on explaining what type of word can combine with what other type of word, and how the results of their combination can be combined with each other, and so on – has been remarkably fruitful. There are many theories of grammar (linguistics is a fragmented field) but all have profited from the advances made by Chomsky and others using his methodology.

The bulk of Chomsky's political output is taken up with detailed critiques of US policy, especially foreign policy and especially in South East Asia, Western Asia and Latin America. This work is scholarly in its painstaking use of a vast range of sources, but is not theoretical: the aim is not to develop or argue for a particular political philosophy (although he has one: see below). Chomsky's method is to bring to light facts that are hidden or played down in the dominant political and media culture. His view is that once these facts are known, they speak for themselves, at least to readers who accept certain truistic moral norms, including these: we bear greater responsibility for the policies of our own country than others, and we are answerable for the

foreseeable consequences of our actions.

A second strand is Chomsky's work with Edward Herman on the 'manufacture of consent', or the way that public opinion is engineered in democratic states by the suppression of facts and opinions outside of a narrow orthodoxy. In their view, elites in democracies find this necessary because the general public has power, at least in theory, and gulags and massacres are off the menu of domestic policy options. The basic idea is one that George Orwell set out in his essay 'Freedom of the Press': "Unpopular ideas can be silenced, and inconvenient facts kept dark, without the need for any official ban." Orwell thought this was because there is "general tacit agreement" that mentioning certain facts "wouldn't do". Herman and Chomsky's explanation is structural: they set out several features of society which favour the framing of news in ways acceptable to the wealthy and powerful, from media ownership and advertising revenue to the role of government, business and think-tanks in providing useful copy to overstretched journalists. They support their claims with comparisons of media coverage of comparable crimes of allies (which, as they predict, are played down) and enemies (which are covered in great detail).

Chomsky has a political philosophy, but he nowhere sets it out as a system. However, an outline can be pieced together from scattered tentative comments and from his approving quotation of certain political thinkers, including the Enlightenment liberal Wilhelm von Humboldt and the anarcho-syndicalist Rudolf Rocker. This is where his political views connect with his work on language and the mind, because his political philosophy is grounded in a cautiously optimistic view of human nature, and this is compatible with, although not entailed by, his views about the mind.

Much less has been written about this than Chomsky's work on mind and language. The best account is an article from 1991 by the political theorists Joshua Cohen and Joel Rogers. As they discuss, Chomsky sees (or would like to see) humans as intrinsically creative and possessed of an instinct for freedom, and he takes these features of human nature to favour a libertarian socialist society.

There is a connection with Chomsky's views on modularity and the competence/performance distinction. We have theories about faculties that underlie and enable various abilities, but we do not and may never have a rigorous account of human choice and action, given that they typically involve the interaction of several faculties.

On the other hand, we know that human language, with only a finite number of words but recursive syntax, allows the expression of an indefinite range of thoughts, of – in principle – unlimited complexity. Chomsky also notes, citing Descartes, that we observe that our language use and indeed our actions more generally are typically appropriate to external circumstances although apparently not determined by them. In other words, we possess creativity in two senses. The first type of creativity – unlimited range and complexity of thought – is arguably a prerequisite for the second, stronger type given that we face an open-ended range of situations.

Chomsky also suggests that we have an instinct for freedom: we find the use of our creativity fulfilling and enjoyable, particularly when it is exercised free from external compulsion or constraints. There are obvious connections with Aristotle's view that to live well is to properly exercise one's highest natural powers. A convergent influence

here are the central tenets of Enlightenment liberalism: we possess a natural worth connected with the free use of our reason, and we recognise that we share this worth. Chomsky surely feels that we should assume Kant was right that “man, and in general every rational being, exists as an end in himself, not merely as a means for arbitrary use by this or that will.”

All of this suggests that human beings will tend to chafe at restrictions on their thought or action. Totalitarian states run against the grain of human nature, while rulers in freer societies will find it more efficient and convenient to direct opinion and behaviour by means that do not confront our instinct for freedom head-on, hence the manufacture of consent.

The flip side of this is that Chomsky’s view of human nature suggests ways to organise society better. Other things being equal, a society that allows us to exercise our innate creativity more freely is preferable, because it allows and even encourages us to develop our potential more fully. And with a little optimism, we may suppose that our instinct for free self-development will lead to continual efforts to remove constraints, whether they are due to material wants or to unnecessary concentration of power. Thus there is pressure (contending with other forces, no doubt) towards societies that are freer and better meet human needs.

This helps to explain why Chomsky insisted in his first published political work that intellectuals have the responsibility to tell the truth and avoid lies. Governments rightly fear our reaction to finding out about wrongs being carried out in our name.

Naturally, there are many challenges to these lines of thought. One is that Chomsky may overestimate the efficacy of telling the truth because he underestimates the role in our inaction of our limited rationality, time and energy, or because he overestimates the motivating effect of finding out about injustice compared with our concern for our individual material circumstances.

In a response to some of these criticisms, Chomsky argues that while an atomised society in which each of us only takes responsibility for ourselves would suit elites, and people in the US know that they are in effect largely disenfranchised, in many respects society has not settled into passivity. As Cohen and Rogers note, the “resilient decency” of the public coheres with Chomsky’s view that by nature we aspire to freedom.

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