

## LINGUISTIC VARIATION AND THE NEW WORLD ORDER

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I. I would like to concentrate on specific aspects of languages, with an eye on reflecting on how they affect their universal character. I will start with this scientific reflection: variation in language has a significant role in shaping it to what it now is; I hope to finish with a political point: if we do not keep variation alive, we may be in deep trouble.

II. That variation should exist in language is not a truism. Language could have been as unique to the human species as vision or the motor system by and large are. Surely these do present some small variations, but they are of the genetic sort. Linguistic variation, in contrast, is trivially non-genetic in character. The very fact that there is non-genetic variation in language makes some researchers argue for its not being innate. However, a minimal reflection on biological morphology and behavioral structures -as currently understood- exposes a rather different perspective. Many of those are entirely unspecified in the genes, and achieve mature status in terms of some crucially missing data that the environment provides.

For instance, many fish species determine their sex not in the genes, but through the temperature the embryo encounters, or a chance encounter with a creature of this or the other sex. Similarly, most insects develop into regular, sterile drones or exceptional fertile queens, not in terms of their genes, but through the proteins they are fed at the larva stage. Visual systems in most species, too, depend on particular inputs, prior to a critical age; no light before that threshold result in blindness. And countless species of birds are known to

develop different song dialects in terms of triggering auditory information of this or that sort, within the maturation stages.

The point is, very often nature appears not to specify all the details of a structure, property, or behavior which happens to develop into a mature entity in terms of the interactions existing between a given individual and its surrounding, immediate context. Long gone is the idea that each mature feature corresponds to a gene; almost systematically what we perceive as features of any sort are rather elaborate dialogues between a genetic envelope of some sort and a context which is close enough to affect that underspecified structure into some stable, unit. From this perspective, it is a bit pointless to debate whether nature or nurture is prior or unique; you just need both. Nature without nurture is unrealizable, and nurture without nature is not even an entity. That's the essence of the organic.

In this organic view of the living and their structures, properties, and behaviors, it should come as hardly a big surprise that perhaps the richest among those structures, properties, and behaviors should be so normal as to include specified genetic aspects and underspecified early environmental demands. In this view, linguistic variation is actually living proof that language is a standard biological phenomenon, and a subtle one at that.

**III.** I used the word 'subtle' with some intention. When one looks at complex systems in nature, these come in two main guises. On the one hand, one has conservative ones. Crystallization is a good example: H<sub>2</sub>O goes back and forth from its water to its ice stage in any winter. That, we now know, has to do with equilibrium in complex physical properties involving in this instance, the structure of matter and some of its states, in given environmental conditions. The key here is reversibility. A little more particle action gives you a liquid; less, a solid.

On the other hand, nature also presents open, dissipative phase-transitions. Turbulence is the classical example. Water in a creek results in characteristic whirlpools forming as the liquid hits a rock, and molecules bounce back against each other, trapped in a loop. Augment fluid velocity and whirlpools turn to turbulence. Those turbulent structures have properties; for instance, they appear where the whirlpool once resided. Yet their stability is more subtle: it depends on fluid velocity; as the waters return to their steady state, there goes the turbulence. Related to that is the fact that these details of the system cannot be reproduced from the turbulence it forms.

It is worth asking whether some aspects of human language aren't closed and conservative like crystals are, while others are, rather, open and dissipative as turbulence. Although here I will be moving into the realm of the speculative, I

will venture a conjecture: Some linguistic parameters are reversible, and in that sense conservative; others are not.

It is obvious, for instance, that some languages have standard and honorific expressions for subjects, as in Japanese, while others only have a single form, English being an example. These distinctions are clearly reversible. In Continental Portuguese one has 'tu' and 'voce'; in many variants of Brazilian Portuguese 'voce' is used for all forms; yet in others, a new honorific has arisen in 'o senhor', and so on. 'Voce' itself was once 'vosa mercede'. The point is, the honorific comes and goes, apparently without external influences, possibly as reversible fashions do.

On the other hand, some changes are strictly irreversible. This does not seem so at first, because other factors conspire so that the initial setting of the parameter may seem to reappear; I think it can be proven, however, that when this happens the parameter has not really been reset it actually reemerged from scratch. Let me illustrate this in some detail.

IV. The sort of parameter I have in mind is typically related to a morphological property of a language. Linguists of my orientation try to relate three mysteries in terms of a fairly traditional idea. The mysteries are variation (at least in word-order), displacement, and the presence of morphology in language.

The traditional idea is that phrasal displacements correlate with a kind of what one might call 'rich' morphology. In the chomskyan terms I advocate, the issue is not so much free word-order, but actually displacement or movement to morphologically rich sites where the demands of particular features are checked. There are various technical instantiations of this intuition, but the bottom line is this: why should features have to be checked that way? Serious researchers looking at this matter have been honest enough to admit that they don't know.

So let us speculate, adapting an idea that goes back, in some form at least, to Otto Jespersen -who used to say that nobody ever dreamt of having a systematic grammar of morphology. That may be an exaggeration, but there is something to the effect that morphology doesn't quite fit with standard syntax, or to use a well-known *dictum* from Talmy Givon, today's morphology is yesterday's syntax. Or still in other words, morphology is a residue.

If morphology is indeed a residue, a historical remnant, something which doesn't quite fit, it is reasonable to ask what the current system -or the language learner- does with it. Actually, a more basic question is this: what do present systems in general, within organisms, do with remnants from their past that don't fit?

In a sense, one such example may be birth, and what induces it. In short, nobody really has a complete or even very clear picture, but it appears that in large part at least, the immune system is involved. Abstracting away from various details that we cannot go into now, there is a very real sense in which the baby

and the placenta are and have extraneous organisms that the mother organism must eventually reject -or die. Of course, those extraneous organisms ensure the survival of the species that gives birth, and furthermore grant individuals a head start within an egg and the controlled context of an entire mother for up to several months of growth, and in that sense are extremely useful for the species at large and serve a very clear purpose. But there is a point beyond which the mother system has to simply reject the intruder. In part this is determined by reaching limits of literally physical tolerance, and in part, also, the immune system finally recognizes the entire army of intruders as some potentially lethal entity, and birth occurs.

The immune system is known to be behind all sorts of expeditive rejections, identifying an alien entity within the organism and more or less rapidly summoning antibodies to eliminate it. Using that metaphor as my guiding intuition, I will suggest that morphology may be seen as a viral element which, although it may have had a purpose and a place elsewhere in the history of some language (the equivalent of a species in my little story above), becomes a sort of nuisance when a given individual tries to acquire that language in a present system where morphology is not, in fact, systemic. Then we might think of the checking process as the equivalent of the antibody action, and the process of movement would be analogous to the instability involved in our bodies when their immune system is activated, forcing them to concentrate on that process over other regular activities, thus elevating the metabolic rate and yielding characteristic fever symptoms.

So far I've suggested that morphology -yesterday's systematicity unworkable in today's system- has to be immunized much as a virus must; and that the instability we see in systems immunizing morphology is expressed via movement, a process which is clearly more cumbersome and complex than corresponding 'rest' states involved in mere phrasal merge, motivated by standard interpretive demands. But even if one grants me that much, one can still ask: how does the system 'know' to send the moved element precisely to the spot where morphology is in need to be eliminated?

Of course, a similarly tough question can be asked about the immune system: how does the antibody know to locate the virus? There we have elaborate theories of how this match takes place, but so far as I know the mystery still exists of exactly how it is that multi-cellular organisms ever came up with that kind of solution. Nonetheless, it is interesting that dissipative, irreversible systems involve a characteristic attraction to instability portions. After all, turbulence (maximal disturbance) arises not just anywhere, but precisely where whirlpools (intermediate disturbance) does. In studies of complex systems, this is taken to follow from a law of synergetics, which Herman Haken called the Slaving Principle. For reasons that do not concern us now, once the system has a point of

instability, further chaos goes in that region, which attracts more instability. It's a kind of Law of Augmenting Returns, of the sort that drives applause to a peak, from a few, scattered, claps. Perhaps something physically dumb like that, at whatever level of abstraction may be necessary, could be behind the attraction of systemic disorder towards points of local disorder in the immune system as well (at any rate, its evolutionary origins), and maybe even the linguistic system.

Since we don't have a better story, suppose this one is true, as a property of dynamic systems in general, and not concretely water turbulence, the immunization process, or movement for morphological checking. Evidently, each of these are entirely different, but they may share a common core in the overall system, if they are of the sort I sketched.

Assuming this much, the process of movement to check/immunize a feature would be as irreversible as that of turbulence emerging down a rapid creek. This means something important: we know that morphology comes and goes, for whatever reason. But if this is so, the changes involved in checking/immunizing morphology would also come and go, as a point of principle. And those changes would be as irreversible as the process of checking itself.

V. Let me illustrate the idea with movement for the purposes of checking some strong agreement morphology, of the sort seen in present-day Basque, for instance, which yields an <Object, verb> order. Suppose Richard Kayne is right, and for reasons that do not concern us now, the underlying order of languages is the one seen in Creoles, that is <verb, object>, with the verb, as they say, 'commanding' the material in the object. Then, of course, the opposite order must be explained via displacement of the object. The viral theory of morphology proposes that the displacement is done in order to check and eliminate some object agreement features, conveniently located in a 'commanding' site higher up in the clause, which in Kayne's terms means to the left. Then the movement will result in the <object-checks-agreement, verb> order.

But that's surely not the necessary fate of languages, or there wouldn't have been a change of the sort witnessed for instance, from Latin to Portuguese - that is, from <object, verb> to <verb, object>. The logic of the situation forces change in linguistic structure to relate to absence of strong object morphology, of the sort that triggered the movement to start with. Can object morphology be lost in that way? That, we know to be the case, as illustrated in the evolution of Indo-European languages, where overt Case systems, for instance, got patently lost, and apparently as a result of that, so did the <object, verb> order. Assuming that overt Case morphology is in the same morphological league as overt Agreement, then the loss of the Latin unmarked word-order, for instance, is expected, and confirmation of the theory.

Needless to say, there is also a very serious question about why the overt morphology got lost to start with. After all, didn't children creating Romance get to hear parents speaking Latin? All that we know here is two things. On the one hand, morphology is, by its very nature, perceptually weak: it is unstressed, reduced in phonological shape, uncombinable by syntactic rules, etc. In a nutshell, the kind of sign that may well be tough to learn by a child if it begins to erode within the observable confines of a language. Very little is known for sure in this respect, but a number of proposals suggest that there is a given perceptual threshold beyond which a morphological paradigm collapses as such. On the other hand, linguistic borrowing can affect morphology in a rather drastic way; perhaps only that can, in fact.

It is worth stressing that last point in some detail, to emphasize what borrowing doesn't really do. It is very hard to a syntactic construction from another language. If your language, for instance, doesn't allow you to say *\*who do you think that left*, it is almost unthinkable that you will start saying that just because you're bilingual and your other language does allow this token. I for one speak bilingually at home, and face exactly that situation, in fact within my head; but I know perfectly well that *\*who do you think that left* is a lousy question in English, as much as it is a perfect Spanish or Portuguese question.

At the same time, I obviously speak with an accent, in English -and these days, I'm told, also in Spanish. My rhythm and stress is affected here and there, especially when I spend a long time within a community where I only get to speak one language or the other. I don't know why that is, but I know it's true. Now, this can affect very drastically the morphology of either language, if done systematically. It is very possible, for instance, that the morphology of late Latin in bilingual contact with Germanic variants, within various areas that led to later Romance dialects, had enough phonetic changes within word patterns to drastically change. For example, an innocent stress retraction within word systems because of language contact can perceptually mask a suffix, thus the delicate balance of acquiring a morphological paradigm by an infant. That in turn may mean the death of that suffix; and with it, the death of the immunization movement process, which in turn entails a rather different word order pattern.

Suppose that happened in early Romance; could it be that the next stage of some Romance languages will again be of the <object, verb> sort? In principle that would be if a new item is perceived by a child as morphological, and in need of checking. That moves us to a topic that I don't really want to touch on, because I don't understand it: grammaticalization.

I know it exists: children do interpret certain substantive lexical items as grammatical ones; that's a fact. And indeed in the case of agreement systems, for instance, we even know the phenomenology: a common usage substantive word that normally accompanies nouns gets perceived as a demonstrative, the

demonstrative eventually as a pronoun, the pronoun as a clitic, and the clitic as an agreement marker. For my purposes here, it doesn't matter why this happens, only that it does. At the point the system is taken to have, again, the viral morphological agreement feature, the <object, verb> order will have to arise, by hypothesis.

This is the question: has the language 'gone back' to a previous stage? Surely not: it just went all the way down a logical path to a state that resembles the initial one, but is not caused by reversing the initial loss in any serious way. It's a bit like getting turbulence in a creek by throwing a rock in a crucial spot; the rock gets removed by the current and the turbulent region disappears; then we throw another rock. Has the system 'gone back'? Of course not: we have just produced the same circumstances again that caused the first chaotic response. That's all.

It is important to keep this point in mind to understand the logic of the rest of my talk; and I should say that many instances can be deceiving. Take a very different parameter, albeit apparently also related to morphological heaviness. Some languages have null arguments, while others do not: Medieval French, for instance, has *pro-drop*, but its modern standard variant does not. Could *pro-drop* ever 'return' to this variant? If we are to judge from what happens in other related languages, argument drop does seem to come back. Thus Quebequois French is apparently developing a strategy for subject cliticization with an accompanying subject doubling which could well give rise to a form of subject drop, when the double is omitted. That, then, looks like a reversible change, for the general system involved in what one may loosely call 'French variants'. However, what's happening in modern Quebequois is probably not unlike what happened in the ancestor of Latin that gave rise to *pro-drop* there: some kind of dislocation associated to a weak clitic which gets coded as an agreement marker, thereby allowing for reference to the dislocated or doubled element without having to pronounce it. The fact that a language falls back into the same conditions that propitiate a phenomenon doesn't mean that the phenomenon has originated in a kind of 'anti-chaos' that reverses the flow of change.

VI. That was all about linguistic change, but now I'm very close to reaching a conclusion for synchronic systems. Is all of this important? Could one have human language without these changes, this morphology, these crazy displacements?

I don't know, but some things make you wonder. The universe is a very subtle place, even its apparent randomness. If you look at particle-antiparticle interactions in physics, you find a very stable dance that leads to absolutely nothing in the way familiar to us. To get matter as we understand it, there had to be a tiny imbalance of protons and antiprotons, which got magnified in the first

milliseconds after the Big Bang -so they tell us. Could we have the known universe without that imbalance? Or take birth, again, which is a very late newcomer in evolution, particularly if understood in terms of an egg or a creature that spends a rather long time inside a mother. Very possibly it originated, at least in part, through some 'mistake' in evolution, which resulted in an extraneous organism, which wasn't supposed to be there, staying for a little longer. Of course, eventually the immune system, or whatever, kicks the intruder out; but meanwhile precious developmental time is bought. Could we have had chordates, or at any rate mammals, without those crazy intruders?

I know no way of answering any of that, nor how much of it is the result of inevitable processes of ordering (understood by nobody) and how much of mere chance, lucky enough to get us here. Personally, I wouldn't want to be part of an experiment to find out what would have happened otherwise, because the most realistic possibility is, as Stephen Jay Gould puts it, that it wouldn't have happened otherwise. In the case of language, I cannot venture any serious speculations as to how a 'perfect' language would look like which had no morphology. It is almost certain that such a language (which in the limit would have no displacement) wouldn't be like anything we know, for no language has no morphology (all seem to be caught in some viral corners, whether in this or that syntactic region). One occasionally hears jokes that the language in question would be predicate calculus; perhaps. Whether our perceptual and production systems are biologically attuned to predicate calculus, and that logically impeccable language can be acquired by our children, is something I'm not ready to test, not with my child.

This moves me to my political point. If what I said is even remotely right, language as we understand it is crucially based on the viral effect of morphology, with its accompanied immunological displacement and, thus, linguistic variation. No linguistic variation would be literally impossible given this state of affairs, since it would be entailed by the very fabric of language.

But entailments can have an inverse; what would happen to the very fabric of language if there weren't linguistic variation?

Given the logic I articulated, it is remarkably possible that morphological changes should relate to linguistic contact. After all, unstable as a morphological system may be in itself, what would tilt the factor of change, generation after generation, if it's not an outside influence, subtle as it may be? We must admit that this is the null hypothesis, particularly considering the fact that multilingualism was the only normal state of human communities throughout human history and (we can surmise) prehistory.

In truth, humans have never encountered instances of true, total, systematic linguistic isolation for dozens of generations; so we can't tell what would happen in the long run to that kind of perfectly isolated language in that



kind of new world community. We have no idea how the language would evolve, or if it would; and if it wouldn't, what would happen to brains that have to produce it and parse it generation after generation. Many science fiction scenarios are easy to concoct here, but I'll try not to. I'm raising a more modest point: we just don't know what would go wrong. Maybe nothing would. Then again, maybe the entire thing would disappear. Just like turbulence does when you stop the flow.

VI. Now I'm ready for the final, political point: how far are we that fateful experiment?

I'm not a sociolinguist or even a linguistic activist, but people who are, like Michael Krauss and Ken Hale, have done the numbers. They tell us of an obvious loss that ranges from fifty to ninety percent of the world's languages, in just about two generations. That is, by the middle of the next century, we may have some five hundred languages, of the close to six thousand spoken today, and close to ten thousand known to humans since the dawn of history in the Neolithic. That's probably already irreversible; in some instances for sure, since there is a handful of aging speakers left of a particular tongue.

What will happen by the end of the century is anybody's guess. At that rate of change, obviously, we'll have some fifty languages, and by the end of the next century, one, or perhaps one should say more accurately, one half. That could have been a stupid mathematical joke, if it didn't entail what it obviously does.

Surely rates of change can change; for better and for worse, which means we might find ourselves in the fateful scenario even earlier than I've just explained. And there are other factors as well; for instance, nuclear war or a natural catastrophe. That, I'm afraid, accentuates the functions in only one direction.

Optimists tell us that languages will eventually start changing again. I find that a curious anthropomorphizing of these lovely creatures. To my knowledge, it is a big nineteenth century misconception to speak of a language as a living entity, as much as it would be a joke to speak of the stock market as an organism. Surely there are patterns and perhaps even laws that govern the changes in each of those, but they result because of the interactions among humans, not for any other supra-individual reason. So the question is simply how exactly is a language supposed to change if there aren't other external forces left for it to change?

I've tried to argue that linguistic changes can be closed and thus conservative or open and hence irreversible. I'm willing to grant that closed systems might well continue to change even if there is only one language left in this world, which means we'll finally get back a honorific system in English, thank God. But I just can't see how irreversible changes, of the sort seen throughout the history of languages, and which actually created them from remnants of other

languages, could possibly exist if there is only one language left -unless we're visited by aliens.

Yet many well-meaning politicians and social entrepreneurs actually believe that the New World Order scenario is one of enlightenment and opportunity, with great chances for boundless communication among humans, not bothered by the nuisance of different codes. Perhaps that's what awaits us. Then again, if what I'm saying is anywhere near right, what await us is something far less glamorous: the possibility of a total collapse of a very delicate biological system that we have been lucky enough to stumble upon in the course of evolution, and one of whose crucial properties was its dynamicity, which entailed its diversity. Like modern Midases, by wanting to turn all languages into English, we may well lose our very capacity to use language.

There are many arguments one could construct for why it is immoral not to concern ourselves with the loss of languages, fundamental aspects of human identities. Or why it is irrational to lose those cultures that associate to given languages, each with a significant contribution to our knowledge of the world, perhaps a crucial piece that we will never understand after it's gone forever. Not to speak of the scientific tragedy of not having the data to understand a crucial part of the human mind, an evidence which was right here, in the midst of us and as accessible as no other kind of scientific data, until we were careless enough to let it go. Most of these arguments are known to all linguists.

My small, pessimistic contribution to this situation has been to suggest that, aside from all of that, in the limit absence of co-existing languages in multilingual communities, the normal state, may well result in the entire collapse of the linguistic system. That might sound too exaggerated, a typical far cry from a scientist in search of a headline or some sexy grant. All I can say about that is that I'd like to see my arguments refuted; and I really mean that: I sincerely hope that everything I'm saying is stupid and has no basis whatsoever. If that were true, linguistic loss would still be immoral, irrational, and tragic; but at least it wouldn't be downright suicidal, as I'm afraid it is.