



GRAMMATICAL CASES AND NEURO-CULTURAL ORGANIZATION OF SYMBOLIC BEHAVIOR:
EXECUTIVE DYSFUNCTION AS A MODULE IN RUSSIAN GRAMMAR, FOLKLORE AND
LITERATURE

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Recent findings on the modularity of the brain can only gradually be assimilated into our thinking about how we think (Tooby, Cosmides, and Barkow). And not one of us can see the picture whole. Those of us who study language and the artifacts of culture look through one end of the telescope, neurophysiologists through the other (Freeman; Simonov). Perhaps this conference can move us closer toward a composite picture.

Structuralist anthropologists have argued for decades that folk literature is modular (Levi-Strauss). But between literature and the brain is language, and any study of modularity in literature will have to untangle the modularity of language first. One thing is clear -- we no longer need to speak of the nature/nurture controversy, but

of the interaction between nature and nurture, which always work in concert. If the brain is organized as a network of evolved modules, perhaps the first place to look for the cultural counterparts of those modules is in linguistic behaviors which also seem to be organized in modular fashion. I submit that grammatical cases provide good examples of modules for thinking and may well correspond to modules for organized neural activity. The dative case gives us a grammatical paradigm for the relationship of donor and recipient in an exchange relationship. Given the salience of exchange in even the simplest societies (Shostak), it is probable that the *homo sapiens* brain has an evolved module for exchange. Dative cases give us a set of linguistic mechanisms for construing the exchange relationship in language. A 2-year-old of my acquaintance invented an idiosyncrasy, 'da-me,' which appeared to be a generalized dative structure; it meant, not "give me," but "perform some act, any act, of which I will be the beneficiary," and it persisted in her language for about 3 months, then disappeared. But English is the only language this toddler seems willing to learn, so she will be using indirect objects, rather than a dative case, to encode and decipher exchange relationships.

In fact, different cultures, faced with the same set of neural modules, create widely divergent linguistic mechanisms for construing them. This gives us insight into the relation of the mind, Chomsky's "mental organ for language," and the modular brain (Chomsky; Pinker). The mind seems to evolve in the context of a particular population of humans, interacting with a particular environment. The dative case is only one way of construing the exchange module, but it could be one that is particularly close to the actual modular structure of the brain.

Now when we take a detailed look at a case like the Russian dative, we discover that it is not one module but many. It can be used to construe exchange, age, directionality of motion, or the very act of construing reality, among other things. As a linguistic module it interfaces with several modules of neural activity. We might think of it as a ganglion module, but how should we think of this ganglion? Is the dative a single neural impulse which the cultural mind links with several distinct but related units of meaning? Or are the divergent meanings of the dative different neural impulses which the cultural mind groups together? When we speak of a grammatical case, we are so close to the boundary between the

physiology of meaning (brain) and the cultural generation of meaning (mind) that we cannot yet be sure whether the object of our research is a physical or a cultural thing. There is no clear boundary here between the brain and the mind.

But the Russian case I want to talk about first is not the dative but a case, more or less unique to Slavic, that we call the instrumental. Its most basic meaning has to do with the means by which an activity is performed, but it can also express certain spatial relationships, it can describe actions or states performed or experienced jointly. Perhaps most interestingly, it can define a status, a quality, or an existential category, a usage I will say more about later. But my primary interest here is in what the Russian instrumental does to the relationship between an agent and its action. The instrumental distances the actor from its role as agent by moving it out of the sentence subject and making it an instrument. *War and Peace* was written by Tolstoy; *glasnost'* was effected by Gorbachëv; Russia was invaded by the Tatars. Of course other languages can do this too; after all, I've had no difficulty translating my examples into English. But most other languages do not have a case for it. If we are correct in supposing that case as a

mental device for organizing brain activity stands fairly close to the neural modules themselves, then it may be that we have happened upon a salient property of the Russian mind, and learned something about the brain/mind interface to boot.

The instrumental case is not the only mechanism in Russian for rendering oblique the relation of agent to action. A structure called the dative impersonal makes the perceiving or desiring agent the indirect object of the perception or wish. English does this for perception ("it seems/appears to me"), but not for desire -- "the urge comes to me" would be the only way to preserve in English translation this feature of the construction. We more commonly say, "I feel like/I have the urge," but that smoother translation ignores the oblique link between wisher and wish in the Russian construction.

I submit that in Russian grammar the dative impersonal, as well as the several constructions of the instrumental, exemplify a module or cluster of modules that organize the relationship of actors and action in a peculiar way. The actor still acts, but language predisposes her or him to construe the action obliquely, as though it had originated elsewhere. I call this paradigm "executive

dysfunction." In a sense it matters little whether we place this module on the physiological or the cultural side of the nature/nurture divide. It lies so close to that boundary as to be virtually part of their intersection; perhaps all cases are. Of course actors perform their actions, perceivers perceive, and wanters want. Whatever neurophysiological modules we have for those things are as hard-wired as anything. But if action is consistently construed as non-action, this construction will affect it at a very basic level of the organization of the mind, if not that of the brain. And if grammatical case in the mind, in culture, is a grouping of action symbols perceived to be similar, how can it not affect the groupings of neuron firings in the brain itself? The displacement of the actor from the agent role is, I believe, a central peculiarity of the society of brains we call Russia. Understanding it will be a major step in seeing how the universals of brain function are translated into the particularities of a given culture.

Perhaps it is no accident that Russian thinkers are noted for a proclivity toward existentialism. The instrumental case in Russian provides a construction for predicating status, quality, or perceived essence. "He acted like an idiot" and "I consider him [to be] an idiot"

both use this case, in which we distinguish grammatically between the person and the quality, idiocy, that we attribute to him. Again, other languages can do this too, but do not have a case for it. The interest in static attributions, detached from action or behavior, or at least considered apart from it, is thus embodied in a mechanism, we call it the "predicative instrumental," that lies close to the brain/mind nexus, or the biology/culture nexus if you prefer the collective version. This usage of the instrumental takes executive disfunction to a philosophical level, creating a whole category for talking about actors in oblique relation to their actions.

It is odd that the Russian grammatical term for the instrumental case calls it, quite wrongheadedly, the "creatorly" case [творительный падеж], obscuring the fact that the case breaks the link between creator and created and talks instead about static, existential qualities. Perhaps this term reflects an unconscious awareness that the instrumental case at least does something odd with the role of creator.

So what are the political, social, and economic correlates of executive dysfunction? The political ones are the most evident. Indigenous power systems develop with difficulty in East Slavic

territory, a difficulty symbolized by the renowned "Varangian invitation," in which the disorganized East Slavs allegedly turned to the Vikings with the plea, "Come and rule over us!" (*Povest' vremennykh let*) . I have argued elsewhere that Russian culture bears the marks of continual invasions of sedentary agricultural communities by aggressive, nomadic pastoralists, from the end of the neolithic until about 700 years ago. East Slavic folklore dramatizes this paradigm with the paradigm of matrilineal exogamy, in which the questing hero is enthroned in female space. External political power invades, rapes and rules, and local Slavic communities triumph by absorbing external power (Cox, "Exogamy"). Could it be that this political paradigm leaves a grammatical residue in executive dysfunction? When indigenous power systems finally arise, in the form of the princely house of Moscow, they do so first as the vassals of an external power source, the khan of the Golden Horde. As though to compensate for the slow start, political power systems in Russia tend to become dysfunctionally strong, frequently attacking the population they preside over instead of protecting them.

Of course most Russians are not the tsar but find themselves somewhat further down in the hierarchy. Here, too, we find a social correlate of executive dysfunction. A truism of Russian social behavior is that a high degree of sycophancy characterizes the behavior of subordinates. In Griboedov's *Woe from Wit*, the toadying functionary Famusov praises his uncle thus:

'[My uncle had] a grave countenance, an imperious manner,
But when he needed to be servile toward a higher-up,
He could bend himself in two!

To this, the disdainful hero Chatsky replies:

'[During Catherine's reign] he was praised who bent his neck
most often;

He who bruised his head, not in battle, but in peace,
By pounding it energetically on the floor.

A haughty air toward those in need -- let them lie in the dust!

But toward the higher-ups, he'd weave flattery like lace!

(Griboedov)

Such sycophancy is consonant with the idea that it is not the self but a higher up that is responsible for one's behavior and its results.

One could go even further and suggest that the problems

Russians seem to be having developing democratic institutions (Taras & Bremmer; RFE-RL) may be linked to a certain passivity in the face of overwhelming power, a correlate of executive dysfunction. In the economic realm, labor motivation has been the most persistent problem in Russia for several centuries, and the deficit seems to stem from low confidence in the rewards of individual initiative, a clear correlate of executive dysfunction (Smith). Serfdom as a system of agrarian labor organization which persisted much later in eastern Europe than in the West, may be seen both as a reflection of this problem and an exacerbation of it. Soviet collectivization was only superficially different from serfdom, especially with regard to the punishment of non-systemic initiative. The alternative economic system represented by a merchant class, was poorly developed in Russia, and despised as well (Riasanovsky). Recent Russian puzzlement over the nuts and bolts of entrepreneurship also fits into this context very well (Blasi, et al.; RFE-RL).

And what of the literary correlates? Certainly Mikhailovsky's insistence that Dostoevsky is interested in the psychology of the lamb in the predator/prey relationship suggests a literary and psychological move away from a focus on the actor, and toward

those he acts upon. I have explored this dimension in *Tyrant and Victim in Dostoevsky*, and in a spin off article where I contrasted Dostoevsky with D. H. Lawrence in this regard; Lawrence wants to look at the mind of the murderer, while his idea-opponent, Dostoevsky, looks at the mind of the victim (Cox, 1984; Cox, 1983; also Cox, 1985). One could argue that the whole 19th century Russian tradition of the superfluous man (initiated perhaps by Griboedov's Chatsky) puts at center stage the stymied intellectual, emasculated by his government and society. This is a major component of the Russian contribution to the development of the novel. The dissident community in 20th century Russian literature presents an updated version of the same paradigm.

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It has been new concepts in evolutionary theory that have prompted this new modular concept of the interface between physiology and cultural behavior. We need to bring the wheel full circle and speculate on the evolution of such neuro-cultural modules. I have already suggested that the interplay between aggressive nomads and sedentary horticulturalists created a context for a political culture oriented toward external power. As we look today

at the biological foundations of art, we would do well to ask how, and toward what ends, an art evolves that highlights static essences and deflects personal control .

As I see it, we will look in vain for a single, unitary purpose of art. We may find that aesthetic behaviors arose in response to a single trigger or efficient cause, such as the extension into adulthood of a taste for play behavior. But natural selection is opportunistic, and the uses to which aesthetic behavior is applied are as varied as the environments in which humans find themselves evolving. Like all culture, art is not a part of the medicine cabinet of *homo sapiens*, a remedy for a particular adaptive need, but a part of its tool kit, an adaptive instrument, used opportunistically to meet a variety of adaptive needs.

For an understanding of the nuts and bolts of how this happened, the concept of distinctive features, introduced by structuralist linguists and used in the analysis of literature by the Russian formalists (Shklovskii; Jakobson; Blache), may turn out to be a useful idea in evolutionary theory. They saw each linguistic or cultural phenomenon as a bundle of features, each feature as part of a binary opposition or toggle. Thus the phoneme "s" is plus bi-dental

(by contrast with "b"), plus continuation (by contrast with "t"), and minus voicing (by contrast with "z"). By extension into culture, a distinctive feature analysis could observe that the questing hero of Russian folklore, or the invading chieftan of East Slavic history, combines two features, plus aggression and minus local origin, and that this dyad seems to have positive valence in Russian political culture.

Even without being neurophysiologists we can see why distinctive feature analysis would be significant for an understanding of the evolution of the brain. As a collection of neurons which can either active or at rest, either on or off, the brain has to be at some level a binary system, a set of on/off switches. An evolutionary binary system should be able to add dyads or change toggles fairly easily. For the feature we have been considering today, we could add an "executive dyad" or a "will cathexis," which could be toggled toward self or other. The feature "minus will" or "minus executive role" would give us the phenomenon we have called executive dysfunction

A neurophysiologically informed reinterpretation of formalist linguistics would be a good project for scholars studying biocultural

evolution. The off-toggling of selected features must have become a consistent pattern in the face of certain historical constancies. The bundles of features, modules combining certain on-toggled and certain off-toggled features, became fixed. Not hard-wired, to be sure, but fixed by tradition through transmission to children at the critical stage of synaptic expansion at about age two. At this age the brain's environment, acting in concert with the brain's existing modules, produces physical structures in the brain, which will remain for the lifetime of the individual. These structures include the grammatical ones outlined above. This model may help us understand both how grammar functions as an adaptive instrument, and how a particular grammatical structure has operated as a specific adaptation.

But these are golden dreams, as Dostoevsky's underground man is wont to say -- that is, all of this is highly speculative. How might these hypotheses be validated experimentally? First, usage of constructions embodying executive displacement can be tabulated in representative texts from various periods, genres, and socio-economic levels. Such a project could go hand in hand with motif indexing on themes related to executive dysfunction. I would suggest

a particular look at donor relationships and magical agents in Russian folklore, with a particular interest in how such devices deflect agency for action from the hero to another party or tool.

But I can also imagine a set of experiments on contemporary native speakers. Writing samples could be taken under normative conditions and also under various conditions of stress. Usage of the syntactic construction embodying executive displacement could be tabulated and compared. Initial results would very likely show relationships that would uncover new variables. This would enable us to refine the model and contrast the usage of such constructions with ever increasing complexity. Thus, the tools exist for us, not only to speculate about executive dysfunction, its evolution and its role in Russian culture, but to research it as well.

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