

The Cartesian mind: reflections on language and music, by Nirmalangshu Mukherji. Shimla: Indian Institute of Advanced Study. 2000. ISBN 81-85952-77-9. Pp x + 129. Rs 200.

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In the book under review, Mukherji (hereinafter M) proposes that there is a philosophically interesting level at which language and music are not just similar, but identical. He thus faces "the hard task of explaining the phenomenal differences while upholding that the domains, at some abstract level of description, are essentially the same. This is what I shall claim regarding the domains of language and music. In other words, there is no delineable module of the mind that is dedicated only to linguistic information. This is my basic disagreement with Chomsky.

"But I wish to claim more. I will suggest that when we look closely at the unique features of the abstract and shared principles underlying language and music, they seem to satisfy the requirements of Cartesian mind, as discussed above. To that extent, the human mind is *not* modular; in fact, it is a singularity consisting of those abstract principles which, when they interface with components *outside* the mind, produce disjoint effects such as language, music and the like. Quite obviously, much of the current notions of domain, module, mind and body need to be revised at various points to make sense of the picture just sketched" (30).

What work does the book do? Just how does M go about unpacking and substantiating his claim? M admits that the account he offers here "is largely informal and speculative" and should be read in the context of the fact that he "hope[s] to add more formal and empirical content in subsequent work" (7). For what he calls methodological reasons, M proposes to "restrict this inquiry to raising a series of plausibility arguments to suggest that it will be extremely counterintuitive if it in fact turns out that, despite stark similarities of a rather unique kind, no shared account could be given to some central aspects of language and music. The discussion is basically intended to settle intuitions on these stark similarities that demand a principled account. In that sense, this work is a plea for further research" (31).

For strategic purposes it helps that M has pitched his work at this level. Had he gone in for a more fleshed out account that goes into musicological details, any reviewer would have had to deal with those local details as well as potential principles nourishing a general enterprise. Few readers could have made use of a discussion of that sort. The musical enterprises of the individual cultures have not yet even begun to delegate their intellectual and aesthetic sovereignty to any comparative musicology from which a cross-culturally acceptable principle-based study of musical systems might emerge. That many people imagine that the Western classical musical systems are in some way proto-universal is not a valid starting point for any serious inquiry, but a fact about the imagination formats that have an unexamined hold on many minds. Any programme for research in cognitive science will need to recognize such ideas as non-starters.

Where do I, then, see any starters? What I welcome is M's decision to go into just the right level of linguistic detail, given that he cannot afford to make that move for the musicology side of his argument. He proposes that the alleged

language faculty of the human mind, to which studies in generative linguistics have sought to contribute, should in fact be viewed as the application of a more broadly conceived faculty to the domain of language. The proposal is couched in such a way that it takes part in the discussion shaped by the generative linguistic restaging of the rationalism vs empiricism debate. Thus M's proposal does not come out as some kind of revival of the pre-generative proposal that general "learning" mechanisms of an experience-driven intelligence (shared by humans with other higher animals) suffice to explain the phenomena of language acquisition. M assumes, with generative linguistics, that a distinctive human supplement, "the Cartesian mind", is what gives humans alone access to language. M takes over also, from pioneering generativist work by Lerdahl and Jackendoff at the linguistics-musicology interface, the conjecture that this distinctive human mind needs to be conceptualized at a level that unifies human linguistic and musical abilities.

What M contributes to this discussion can be itemized as follows. Vis-a-vis the formal task of characterizing the Cartesian mind on the basis of investigations in linguistics and musicology, M proposes that the language-music unification should be attempted at the level of abstract principles rather than operational rules or structures. In terms of the distinctly musicological aspect of such a project, M renews Lerdahl and Jackendoff's (1983) classicalist focus, extending their argument to Hindustani classical music, and suggests a strategy (I will discuss it later) for addressing the objection that a majority of humans seem to display little if any talent for music in general and classical music in particular. Finally, at the level of the foundations of cognitive science in the philosophy of mind, M argues that the philosophical project of characterizing mental processes in terms of formal operations on representations, on a full Cartesian scale whose language-music unification restores the nonmodular essence of Descartes' classical *res cogitans* itself, is strengthened by a research strategy that picks up on the formal nature of linguistic representations. On this basis M deemphasizes the naive word and thing approach to the way language supposedly corresponds to the objectual world.

In all three strands of his inquiry M is careful to stress the limited scope of the argument he offers. M seeks to show only that it makes sense to aim for a unified formal characterization along the lines of the Cartesian mind approach even though the actual goal will remain far from our grasp in the short term. It is important to bear this tentativeness in mind as we take the points up for separate discussion.

The principle-based unification strand of the argument is likely to interest formally inclined readers most directly. Recall that the whole project of working towards formal generalizations subsuming linguistics and musicology had originated in the observation that something like syntactic transformations could be usefully said to turn certain basic musical passages into those variants through which their conceptual constancy through perceptual multiplicity was recognized by listeners. When that project was under active discussion in the late seventies, many participants believed that processes (formulated as dynamic transformations or as static correspondences) might be the common factor underwriting a future common formal approach to language and music. M suggests that that approach to the language-music unification problem be recast as part of the transition from rules to principles in linguistics that has been under way since the eighties.

To this end, M provides an exposition of the principles and parameters perspective in syntax, refers with approval to the minimalist turn in parametric syntactic research, and notes some advantages of launching the unification attempt from a platform based on a principle-focused account rather than a rule-driven one. Rules branch out, M argues, to match the diversity of the materials they deal with. Now, language and music grossly differ at the level of material and elicit correspondingly distinct types of rules. Thus an abstract unification that somehow bridges those differences, even if constructible, would be likely to land us in a region of formal abstraction that exists only in the mathematics of such mappings and has no pertinence to what makes either language or music tick, let alone both. But principles one step more abstract than rules, M proposes, are relatively independent of the materials that the rules hug so closely.

M is happy to note that progress from the principles and parameters perspective to the minimalist one has followed the same path of increased detachment of the operative principles from details of the material that a syntactic representation contains. This degree of abstraction achieved in formal linguistics makes the project of a language-music unification look more feasible than it did in the seventies.

I agree with M that the language-music unification project must take part in shifts in formal linguistics, and also that the transition to a principled view of language will benefit the project. However, my reading of the transition under way is rather different from that of the formalists whose work M takes to be representative of contemporary linguistics. The substantivist perspective in linguistics (for expositions that provide conceptualizations and a representative sample of implementations, see Dasgupta, Ford and Singh 2000; Singh and Starosta 2003) construes the project of moving into principles in terms of sharpening the early abstract universalism into an interlocal set of enterprises involving concrete instantiations of the universal. Where formalists confine their localism to the syntagmatic axis, substantivism extends the locality principle onto the paradigmatic axis as well, thus creating a basis for moving older structuralist work on poetry into the generative epoch and renewing the contract between theorists of language and their colleagues in poetics. Another advantage of the substantivist approach to linguistics lies in its ability to keep faith with the individual speaker-listener's standpoint, while formalism tends to lapse into a grammarianship conceptually indistinguishable from the societal-hegemonic work of the old authoritarian pedagogues and their deceptively liberal structuralist replacements who still rule the world of language teaching. A third advantage is that substantivist linguistics is practically next door to a serious philosophical interest in pragmatics (on this aspect, see Ghosh-Sarkar 2003). I am sure that M and other colleagues who wish for a serious language-music unification will be led by the exigencies of their own work to prefer substantivism to the default diet of formalism they have been living on for reasons more sociological than academic.

Let me be more specific. M finds it exciting that formalist linguistics at its minimalist moment chooses to stress not the properties of anaphoric or inflectional dependency that enforce the locality of internodal relations but such principles of economy as the minimal link condition or the blocking of less parsimonious derivations by more parsimonious ones. He hopes that this will make formal linguistics at its real base indistinguishable from the formal basis of human musical

ability. The core of his hope is that it will then turn out that there are no modules in the technical sense, but that the same Cartesian mind applies to material in various domains to produce systems that only appear to diversify.

But this need not excite M as much as it does. The kinds of linguistic mechanism that make the local relations tick, whether in inflection or in anaphora, are tantalizingly analogous to the way little pieces of music remind you of the bigger passages that they are pieces of and cross-refer to. A truly principled approach to these matters will surely bring out fundamental points about abbreviation, expansion, exact and inexact repetition, and cross-reference that justify M's excitement, but are substantive rather than formal in an intuitive sense. It is entirely possible that to make sense of what is at stake M and other colleagues will have to push the project to the point of comparing smaller musical passages with linguistic sentences and real compositions with discourses. We have long known that cohesion in the systemic grammar sense is a standard property of discourse and that cross-reference devices are at this level obligatory, a fact that does not follow from formal grammar. Since the same is obviously true and significant in music, it would be surprising if an adequate theory of music were to have nothing to say about this shared property.

I turn now to the second strand in my itemization. M's musicology leans in a classicalist direction. This is obviously the right thing to do, as only the classical elaborations provide data that become crucial at the present stage of the inquiry M is engaged in. As the inquiry progresses, I presume he will take on board some theory of formality that both makes sense of where the classical stands in the spectrum of musical conceptualization and matches some understanding of corresponding options in language. What I have in mind is something along the lines of diglossia theory, but that detail is not a point at which M's interests converge with mine. To find some common ground, let me focus on the fact that, as part of his classicalist stance, M suggests a strategy for addressing the standard objection that a majority of humans seem to display little if any talent for music in general and classical music in particular. His strategy is to stress the patterns of listening and identification rather than of production. M argues that whenever children get the right levels of exposure they do in fact burst into musical performance, indicating that the disparities are due to the sociologically explicable non-availability of a pedagogically adequate initial exposure in the case of music, whereas in the case of language acquisition exposure it is bio-socially impossible for children not to be given the necessary initial data base. Hence the facts as we know them.

I rather like the strategy M implements. But I would like it even better if M could take on board the fact that in these respects music is more closely analogous to poetry than to language. The next step for M's project might be to reconfigure the notion of formal so that it becomes a means for changing the equation in theory and practice between labour and art. Ordinary psychology's bare bones approach to ordinary actions and cognitions exceptionalizes art, plays into the hands of the old elitisms, and will not suffice to theorize labour. Humans need a minimum of art to make any action seriously social by injecting a concretely sharable rationality into its pattern. Art seems to make this rationality socially available, in ways I do not claim to understand or to have an articulate research programme for. I am merely

predicting that M's emphasis on the cognitive will inevitably force his project to move into the question of rationality and into theories of the labour-art relation.

In connection with the third of the strands I have itemized, I will comment here only on the issue of semanticity. M tries to argue away the apparently massive difference between language which is meaningful and music which is not. His point is that current linguistic work that explains what is distinctively human about language focuses not on the lexical meaning-linked aspects but precisely on the formal aspect of linguistic structure, which music also brings to the fore.

Here it seems clear that extending the scope of research to include discourse, a point I mention in connection with the first strand above, will help M's case. Cross-reference and progressive abbreviation in a text produce meaning both in language and in music, which is why a piece of music grows on you and becomes easier to remember, which means that you understand it at the only level cognition cares about.

In all three strands of his argument, I suspect M will gain from asking if a larger base of observable and pervasive common properties shared by language and music might flesh out in interesting ways the skeleton he has so admirably constructed on the basis of what he quite defensibly chooses to regard as state of the art theories in language. As the art changes, so will its state, and we in the disciplines of language studies are honoured to have M as a colleague who may help accelerate the changes we are part of.

References

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