

Is music a language?

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In [1980](#), George Lakoff and Mark Johnson published a very interesting book, called *Metaphors we live by*. The basic tenet of it is that there are 'things' which are cognitively simple and things cognitively complex (I employ here the expression "things" in its extreme generality, standing for objects, individuals, situations, events, states, etc.). Things cognitively simple may be understood directly; things cognitively complex are understood *through* metaphors, in which simple things are used as explanation of complex ones. For example, the notion of *space* is cognitively simple and we have no problem in understanding what is above and below, front of and behind, inside and outside, near and far, beside, etc. The notion of *time*, on the other hand, is cognitively complex and we just understand it through spatial metaphors: the time is seen as a line and temporal events are placed specially on it. Thus, the past is behind, the future is ahead, the most recent event in the past is in front of the older one – and one is nearer us than the other –, two simultaneous events are side by side and so on. As far as time is not space and not all of its characteristics are grasped by the spatial metaphor, auxiliary metaphors arise, able to permit a finer understanding. So metaphors like the *time is a value* (time is money) arise, from which we can save time, lose time, sell or borrow time, etc. or the metaphor like the *time is a receptacle*, and we say that an act was done *in* ten minutes (that is the action took place *inside* these ten minutes), or the metaphor of the *time as an object in movement*, that permit us to say that the time flies or the time drags. All in all, the cognitive complexity of the notion of time is overcome by the collection of metaphors – according to the authors, some clearly specific to one culture, some universal.

Let's assume, following Lakoff and Johnson, the metaphor *discussion is a war*. Assuming this metaphor means not only that we started to understand (started to conceptualise) discussions in terms of battles (war vocabulary now applies to discussions, that can be won or lost, follow certain strategies and adopt lines of attack, positions are attacked and defended – some are indefensible – etc.) but we may come to the point of acting in a discussions as if we were in real battles (I think these are no news for whoever partakes in congresses and seminaries with the scientific community.

In the words of Lakoff and Johnson (p. 53):

The systematicity itself, that allows us to understand one aspect of a concept in terms of another (for instance, to understand one aspect of 'to discuss' in terms of 'combat') will of necessity conceal other aspects of this concept. Allowing us to focus on a determined aspect of a concept

(...) a metaphoric concept may prevent us of focusing on other aspects of this same concept that are consistent with this metaphor. For example, because of a heated discussion, in which we are engaged in the purpose of attacking the position of our opponent and in defending ours, we may overlook the co-operative aspects of the discussion. Someone who is discussing with you could be seen as the one who is offering you his time, a valuable good, in an effort to achieve mutual understanding.

It is a consequence of the systematicity of metaphors that people start to consider real what is metaphoric and lose of sight the fundamental characteristics of the notion which the metaphor tries to explain. Lakoff and Johnson point out to the disaster that happened – and still happens – to the linguistic studies with the *conduit metaphor*, that considers the ideas as objects, the linguistic expressions as receptacles, and communicating as sending. In this case, the metaphor generalised itself and invaded the field of language studies forcing clearly crooked (and false) explanations of the nature of the language. Certainly it is not possible to suppose that expressions are 'meaning receptacles', since this would imply that expressions have meanings in themselves, independently of any speaker or any context, neither it is reasonable to suppose that the meanings are 'objects', existing outside the expressions with which they are associated. [Anyone who gave an interview to a journalist, or any unwary teacher who tried to be acquainted with the annotations of his pupils in their notebooks, knows that this conduit metaphor is false.]

This revealing/hiding is characteristic of the metaphors and it is fundamental that we are aware of it, especially when we intend to build a new theory on a metaphor. Metaphors are always partial, dodging and misleading. Notwithstanding that, they have an important epistemological rôle.

Very well. I intend here to develop some considerations on the assertion that music is a language. My argumentation follows the sense that this assertion is nothing but a metaphor, in the sense of Lakoff and Johnson. Please keep in mind from the beginning that there is no valuation built in my position: being a metaphor is neither good nor bad. Anyway, I believe there is a gain in acknowledging we are dealing with a metaphor, with its virtues and limitations.

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Let's start asking: what is a language?

It may be interesting, for a start, to resume with the article by David Lewis *Languages and Language* ([Lewis 1983: 163-188](#)). What is a *language* for Lewis? In his words:

[A language is] Something which assigns meanings to certain strings of types of sounds or of marks. It could therefore be a function, a set of ordered pairs of strings and meanings. The entities in the domain of the function are certain finite sequences of types of vocal sounds or types of inscribable marks: if σ is in the domain of a language \mathcal{L} , let us call σ a *sentence* of \mathcal{L} . The entities in the range of the function are meanings: if σ is a sentence of \mathcal{L} , let us call $\mathcal{L}(\sigma)$ the *meaning* of σ in \mathcal{L} . What could a meaning of a sentence be? Something which, when combined with factual information about the world – or factual information about *any* possible worlds – yields a truth-value. It could therefore be a function from worlds to truth-values--or more simply, a set of worlds. We can say that a sentence σ is *true* in a language \mathcal{L} at a world w if and only if w belongs to the set of worlds $\mathcal{L}(\sigma)$. We can say that σ is *true* in \mathcal{L} (without mentioning a world) if and only if our actual world belongs to $\mathcal{L}(\sigma)$. We can say that σ is analytic in \mathcal{L} if and only if every possible world belongs to $\mathcal{L}(\sigma)$. And so on, in the obvious way. (p. 163)

Is music a language in this sense of the term? Apparently there are people who think it is.

A language \mathcal{L} , in Lewis's point of view, foresees some mechanism to combine vocalic sounds (or marks on a paper, for example) to constitute a collection of well-formed sequences that would be the sentences of \mathcal{L} . The vocalic sounds (as well as the combinations they take part) are the object of the researches in Phonology. The smallest sequences of sounds that may be associate with entities in the world – sequences we can call *words* or *morphemes* – constitute the level of analysis that can be called Morphology (or Lexical). The well-formed sequences of morphemes (or of words) – the sentences – are the object of enquire of the syntax and the mechanism which associate, through a theory of truth, the sentences built up in the syntax with the world is semantics. It is interesting to observe, by the way, that this definition of language is reasonably adequate to the natural languages as well as to the great majority of languages of logicians, mathematicians and computer scientists.

I see no difficulty in building up a Phonology or a Syntax to music – that is incidentally what is done in the majority of studies. I can not see, however, what could be a lexicon (a morphology) in the language of music. It seems that music lacks the double articulation characteristic of natural languages. I explain. The structure of the linguistic expressions seems to foresee, initially, an articulation of meaningless elements (sounds, for example) in larger structures also meaningless (syllables, for example). Parallely, the structure of linguistic expressions may be seen as the articulation of minimal meaningful elements (morphemes or words) in larger structures (syntagmata or sentences). In an analogy, we could say that the structure of linguistic expression, like a house, supposes building materials (the sounds, syllables, accents, rhythms, etc. would be equivalent of the bricks, cement, wood, nails, etc.) and suppose an ordering of these materials in 'functional structures' (the morphemes, words, syntagmata and sentences would be equivalent to the bedrooms, kitchen, bathrooms and living rooms in a house). As we can say that a house is made of bricks, iron, cement, glass, etc., we can say that a house is made of living room, bedrooms, kitchen and bathroom. As we can say that a language is constituted of sounds, accents, syllables, etc., we can say that it is constituted of words, syntagmata and sentences. Clearly these two articulations are of distinct natures. Clearly music has the first articulation (the 'building materials') but it does not seems clear that it has the second articulation.

Neither can I see the possibility of establishing a minimally adequate semantics.

[Mihailo Antovic](#), in a text called *Linguistic semantics as a vehicle for a semantic of music*, among other things, says that we all feel that there is a link between the music and the extra-musical, even if this is, in great part, due to cultural determinations. So, it must exist a relationship between the 'expressions' of the musical language and the external world, as in the natural languages. The is not, however, any possibility that this relationship can be established in terms of truth. In his words 'music certainly has no truth conditions' (p. 10).

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I resume. Like language, music presents clearly a first articulation (the 'building materials'). Thus we can say, by analogy with language, that music has Phonology.

It is not clear that music has anything equivalent to the *morpheme* or the word of natural

languages. As far as the morphemes and words are *meaningful units*, perhaps their absence in music (or the absence of something equivalent to them) is linked to the problem of establishing a semantics to the music. So, it is not clear that a lexicon exists in music.

Neither is clear the existence of a syntax. Notice that in general syntactic theories take morphemes and words, organised in a lexicon, as the units of a syntax. If there is no lexicon, can there be syntax? Or are we facing a language that has only the first articulation? If we consider that the articulation of the minimal elements (notes, rhythms, *tempi*, etc.) is the attribution of a syntax, perhaps what music lacks is exactly a phonology. I am not competent to propose solutions to this problem. I just let it registered here for future enquires, if the question were considered pertinent.

In a more concrete form, we may say that music has no semantics, at least in the sense of the term employed by Lewis (and a good number of semanticists). 'Semantics with no treatment of truth conditions is not semantics' (Lewis 1983: 190). If the music has not conditions of truth, it has no semantics.

As a first conclusion, we may say that the metaphor *music is a language* just seems to work properly if we think in phonology or in syntax, but does not work adequately if we think in semantics. If semantics (as well as the double articulation) is to be considered essential for the conception of language, music is no language and any attempt to understand music with the categories we use to understand language will tend to failure.

But, certainly, there are other ways. We may attribute reality to the metaphor and turn the direction of identity the other way round (if music = language, then language = music). Now, considering that music has no semantics, we may investigate the possibility that language also may not have it.

Let's suppose that the possible similarity between music and language – origin of the metaphor – may not be in the concrete manifestations of both one and the other.

McMullen and Saffran (2004, p. 289) open their article with the statement that music and language, in the surface, are radically different. The exact phrase is 'On the surface, music and language are wildly different. No listener would ever confuse a Beethoven sonata with a political speech'.

If the similarity is not in the surface, we should look for it in the 'depths'. Therefore it is necessary that we accept one conception of language that foresees the existence of a 'depth' that is distinguishable from the surface. In other words, music will be a language if we understand that music and language suppose two levels of 'existence' – a deep and a superficial one – and that, although radically distinct in a superficial level, music and language can be identified in the deeper level. Music and language are similar enough in their subjacent forms for the metaphor "music is language/language is music" to make sense. McMullen e Saffran (2004, p. 289) arrive to the point of saying that "in some cases, a single mechanism might underlie learning in both domains".

For Noam Chomsky, languages are biological systems that men use to speak about the world (or about the mental representation they have of it), describe, refer, question, communicate with others, articulate thoughts, talk to themselves, etc. These 'things' that we do with languages constitute what Chomsky calls *conceptual-intentional system*. On the other hand, as an expressive 'medium', the language must associate itself with a

system of production and reception, of sensori-motor nature able to allow the production and the reception of the sounds that constitute the linguistic expressions. To this second system, Chomsky attributes the name of 'articulatory-perceptual system'.

Human language must, thus, be able to contact (constitute an interface) with the conceptual-intentional system (C-I) as well as with the *articulatory-perceptual system* (A-P).

For Chomsky, the systems C-I e A-P have their own structure and are independent of human language. In other words, C-I e A-P *are not part of the languages*. It is possible to suppose, however, that they impose conditions upon the language. It is reasonable to think, for instance, that the human languages have, as limits, the human articulatory and auditory capabilities. Or that the meanings associated with the expressions depend on how the world is organised by our cognitive mechanisms.

The language – the biological system – is represented theoretically as a *grammar*. This grammar is understood as a collection of combinatory rules that act on a lexicon made of lexical items that are, at the same time, 'words' and 'concepts', that is, the lexical items are understood and a collection of abstract 'features' able to determine (i) how the item must be 'spoken/heard', that is, how the item will relate to the articulatory-perceptual system (A-P) – we may say, in other words, that the lexical item contains its conditions of legibility in the system A-P; and (ii) as the item should be 'understood', that is, how the item will relate to the system conceptual-intentional (C-I) – in other words, its conditions of understandingness.

Obviously, these conditions of legibility e understandingness – since they are part of the grammar – are extremely abstract and can not be mixed with what is normally considered as 'form' and 'content' or 'pronounce' and 'concept'. Actually, as far as I know, nobody has ever dared to formulate in a minimally concrete way the nature of these 'features'. Anyway, in such a conception of language, the semantics (understood as conditions of truth) stays *outside* the language. So, since the language has no semantics, the problem of establishing a semantics for music disappears. It is possible to guarantee the reality of the metaphor.

It is important to observe that, for Chomsky only the grammar has any reality. There is nothing that we could call language (the languages, for Chomsky, are *epiphenomena*). The notion of Portuguese language, for example, has its grounds in the history or in the sociology, but in no way it can be considered a linguistic notion. It is important to notice as well that he considers the language a biological system that, in principle, *is not made* to tell about the world but which men learned *to use* with this finality. The relationships between the linguistic expressions and the world (the proper objects of the semantics) are external to language itself and could be better treated in a *pragmatics* than in a semantics. I explain. One possibility of distinguishing between semantics and pragmatics, originated in the thinking of the philosopher Paul Grice, lies in the differentiation between *signifying* and *meaning*. For Grice, the linguistic expressions signify; the speakers, on the other hand, say things with the linguistic expressions; and not always what the words signify is what the speakers mean. Semantics cope with what the words signify, whereas pragmatics cope with what people mean with the expressions. For Chomsky, there is only pragmatics. In other words, for Chomsky there is no inherent relationship between linguistic expressions and the non-linguistic; the speakers, however, know how to use linguistic expressions to speak about the non-linguistic. This knowledge of the speakers

does not belong to the grammar (to the faculty of the language).

I will resume with a fragment of Antovic text I have above already referred to. At a certain point, he alludes to Darth Vader's theme in the film series *Star Wars* and says that any informed listener is able to associate the theme with the character. In his own words:

The theme has been used always and aggressively in the same extramusical context – whenever Vader himself or the talk of him appeared on the screen. The musical phrase was linked to the extramusical. (...) We associate a number of connotations with Darth Vader: evil, terrifying, devoted to the 'dark side', obedient and loyal to his evil emperor, etc. Since the musical theme now denotes the character, the connotations we associate with the character become the connotations of the theme, as well. (p.7)

What Antovic means is that the musical theme – which has no inherent signification – acquires a signification because of the way it was used. The theme means nothing, but we can use the theme to say something. The meaning associated with the theme is clearly built in a typical pragmatic process.

This, perhaps, is the nature of the signification we may attribute to the expressions of music. The adoption of a pragmatic perspective to the study of the musical forms of signification may solve perhaps the problem, which Antovic points out, commenting the influential work of Lerdahl and Jackendoffs, when he says:

Although pointing to striking similarities at the levels of what linguists would call phonology, the study of (speech) sounds, and to a lesser extent syntax, the study of the arrangement of units into complex distinguishable wholes, neither GTTM [Generative Theory of Tonal Music] nor other theories have really succeeded in finding a common framework in language and music for semantics, the study of meaning. Up to a point, this tendency is easy to understand, since meaning is a very complex mental phenomenon, difficult to formally describe even in linguistics, not to mention music theory. For these reasons, even such influential theories as GTTM shunned the description of musical meaning, claiming it was either 'only on the surface of musical understanding' or 'too personal, associative and context dependent to seriously discuss' (p.2)

To this he adds, in a footnote,

Today, with recurring interest in semantics, even the authors of GTTM seem to have revised their position. Professor Jackendoff (personal correspondence) today claims there certainly is musical semantics. The only problem is no one has been able even to define its subject matter in any theoretically or empirically viable way.

Perhaps, the perspectives of analysis open by the understanding that both music the natural languages are biological systems – which can be used to transmit their own significations – will permit the arousal of theoretical (and empirical) alternatives, solving Jackendoff's problem. Perhaps the pragmatic approach is this alternative.

Still there is one problem to be faced. I believe that Chomsky would agree with the conclusion that if the music can be understood as a biological system similar to human language, with phonology, syntax and pragmatics. I do not believe, however, that he would agree with the statement that music is language (that the system is the same).

The reason for this disagreement would be in the modular view of the mind that Chomsky assumes. For him, the human mind is organised in autonomous modules, inter-related but independent. The language is one of these modules, the systems A-P and C-I would be another two. Perhaps music is another of these modules (or even more than one). The

rules (the grammar) of the musical module could not be the same as the ones constituting the language module, even because in this case the music would be one of the possible human languages and certainly it is not. If the music 'belongs' to a different module to the one where the language 'belongs', then music is *not* language.

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I believe that this is the moment to begin tying some of the loose ends that we left behind us and start building a conclusion to this speak.

The first conclusion I want to reach is that, indeed, we are facing a metaphor when we meet the statement that music is language. The statement has no ontological force. At bottom, the affirmation works like a heuristic suggestion: *treat the music like you would treat a language and see where to you arrive.*

As much as the metaphors are cognitive resources used to reduce unknown (or cognitively complex) notions into known (or cognitively simple) notions, and as much as it is believed that the linguistic has already arrived to a reasonable description of language subjacent forms, so that it seems to know these forms, it is acceptable to apply the same theoretical treatment to music subjacent forms.

Obviously, whoever thinks that the linguistics 'know' its object, is simplifying enormously what really happens there. Linguistics presents the same theoretical ebullition that we find in the other scientific areas and the number of rival theories, many of them incompatible, is huge.

This way, the metaphor acquires another epistemological nature: with the possibility of identity inversion, every knowledge about music we may achieve may be applied to the study of the language. Said in a different way, music and language may no more about their subjects if they keep this theoretical 'talk'. Actually, musical theory and linguistic theory become part of a greater study, the study of human mind and of its innate capabilities.

Parallel research programs can be established: how music and language develop? how the brain process music and language? Are there pathologies in the musical faculty as there are language pathologies? And so on. Without reducing music into language (or language into music), the conversation can be fruitful.

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