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## *THE RHETORIC OF ROCK: THE STYLISTICS OF AMPLIFIED SOUND*

*SUMMARY. This article postulates rock music as a palimpsest in which artists' musical discourse builds upon a pre-existing and renewable technological score composed of electronic components chosen to produce particular sonic effects within boundaries which constitute musical genres. These components can be considered as micro- or macrostructural figures within musical discourse, and as such enable sound to be replicated or imitated in the same way as a literary pastiche. Like a musical score, the rhetoric which arises from the combination of these figures can be read visually in the form of circuit diagrams, pictorial representations and even the instruments themselves. The latter are visual shorthand for their own sonic properties, and so frequently become a part of groups' stage scenography or discursive ethos.*

*KEY WORDS. Music semiotics, stylistics, synesthesia, rock music.*

On April 5th 2012, artists and fans of rock music the world over paid homage to James Marshall, OBE, who had died that day at the age of 88. He had been seen and heard on concert stages around the world for over 50 years; but he was not primarily a musician. At the age of 37, he went into business selling and then building guitar amplifiers. The rest, as the expression goes, is History: the amplifiers which bear his name rapidly became icons of rock, recognizable even by those outside of the immediate audience. The brand's marketing strategy could in itself form the object of an edifying semiotic analysis, but the present article will consider how a man like Marshall may be considered a composer. More exactly, it will examine the extent to which musical instruments can be considered as works of art, insofar as they are repositories of a structured, legible, esthetic discourse.

This hypothesis may appear surprising, but few would deny that a "Nocturne" by Chopin, for example, sounds different when played on an electronic keyboard or on a concert piano. The actualisation of a score by a musician is thus to a certain extent dependent on the instrument on which he plays it, a mediation which differentiates music (vocal music excepted) from other forms of discourse. I would like to explore this idea with regard to popular music, and more specifically rock music. In this partially instrumental genre, prior to orchestration comes the very creation of the sounds which characterize it, and whose nuances contribute to the uniqueness of the individual songs. A musical score therefore coexists with what we will call a technological score, in which guitars, electronic effects and amplifiers are configured to produce particular results. The proliferation on online guitar forums of serious and

documented discussions on obtaining, for example, the tone of Slash or Eddie Van Halen, indicates that sound can be reproduced in the same way as verbal discourse. Software such as *Guitar Rig* and *Revalver* indicate that it can be imitated. Thus opens, on a macrostructural level, an intertextual perspective where the instrument, containing a specific discourse actualized by the performer in the context of a musical score or composition, can be seen as the hypotext of the song. On a microstructural level, meanwhile, each instrument is the sum of its own components: a particular pickup will be chosen to transmit a signal to particular transistors or valves. The question includes, finally, an intersemiotic dimension, since the electronic configuration which produces the sound can be read iconically on a circuit diagram and, by metonymy, in the visual aspect unique to brands and models of instruments and which is part of stage design. It can be noted, finally, that the lyrics of many songs allude to the instruments on which they were probably played.

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It has been said that "Writing about music is [...] like dancing about architecture [1]". Sometimes, however, describing sound is possible and even necessary. Music teachers, for example, train their pupils in the quality of notes as much as in notes themselves [2], for in instrumental music, enunciation and the enunciated are more difficult to isolate than in verbal discourse. If there is meaning in instrumental music, as music semiotics [3] convincingly argues, it lies as much in a trill or in a crescendo as in a minor or a suspended chord. One of the first theoretical works on sound itself is Hector Berlioz's famous *Treatise of modern instrumentation and orchestration* [4], published in 1844. Catering to the needs of composers and conductors, the *Treatise* addresses the characteristics and limitations of approximately 50 instruments commonly used in a classical orchestra. Its content can be divided into two categories: the sonic interaction of instruments — musicology — and the emotional effects they are able to produce — stylistics. Musical semiotics in the 20th century built on this foundation, viewing sounds as culturally encoded symbols and postulating the transmission of relatively specific non-verbal messages. For example, brass instruments have traditionally been connected with male-dominated areas of activity, such as war, marching, parades... and their inherent affective sensations of bravery, danger, threat, energy and excitement [5].

The approach which will be taken here sets aside such mimetic or sociological considerations in order to ponder, with regard to the electric guitar, the production of sound itself — a non-verbal discourse:

the differences between the performance of music and language are of degree, not of kind. Pitch, dynamics, duration and speed of articulation are all used in speech and in music [6].

As such, music can be said to have its own rhetoric. In the same way as semantics, syntax, prosody and punctuation modalize the basic content of a locution, the signal chain of an electric guitar conveys notes in such a way as to stylize them.

At this point, a brief reminder of the mechanism of the electric guitar may be useful. The vibrations of six metal strings are sensed by a magnetic field in one to

three pickups; these transform the vibrations into variations in electric tension [7]. In order to power a loudspeaker, this signal's amplitude and energy are increased in an amplifier. Independently of the musician, such elements constitute the "instrument-dependent dimensions of timbre [8]".

The distinctiveness of particular instruments is well-documented. The country music guitarist Marty Stuart remarks: "A great amp and a great guitar carry you a long way towards who you really are as a tone person [9]". Reminiscing on the composition of some 1960s rhythm and blues standards, Steve Cropper recalls:

It was more about what the guitar sounded like acoustically than it was plugged into an amp, and most of the songs, when I look back... things like "Knock on wood", and "The midnight hour", "6 3 4 5 7 8 9"... Those songs were all written on a Telecaster, unplugged [10].

Conversely, ZZ Top's Billy Gibbons uses complex EQ processing to make his guitars sound homogenous*.

Wherein does a guitar's distinctiveness lie? It is generally agreed that in an electric guitar, all factors influencing string vibration and its detection can influence the sound produced**. The wood of the guitar itself has its importance, but less so than the scale length, the material and design of the bridge and nut (which hold the strings in place), the pickups and their circuit, and the strings themselves. A longer scale length puts the strings under greater tension, while a brass bridge or a bone nut makes the string vibrate differently than its steel or plastic equivalent. Within the pickup, the variables are the choice of magnet, the thickness of wire, the winding and the number of bobbins. The "instrument-dependent dimensions of timbre" can therefore be said to condition sound, rather as semantic and syntactic variables determine the meaning conveyed by language. This parallel can be limited to individual instruments, as one would analyze a sentence, or extended to combinations of instruments, as one would approach a longer segment of text. Based loosely on Georges Molinié's classification of rhetorical figures [11], we suggest the following:

| Microstructural level | Words (e.g. meliorative adjectives, strong qualifiers, superlative adverbs, etc.) | Components (pickup, bridge, nut, wood, strings, wiring, resistor, capacitor, transistor, etc.) |
|---|---|---|
| Macrostructural level I | Figure (e.g. hyperbole) | Instrument (e.g. guitar) |
| Macrostructural level II | Figure (e.g. irony) | Signal chain ("rig") |
| Macrostructural level III | Text | Song |
| Macrostructural level IV | Genre | Genre |

* "The secret to the rig is that every guitar has a tone it's supposed to reach, because when we change guitars they have to be homogenous. So if we go to a Telecaster, to a Les Paul, the gain all has to be the same. We don't want you to tell he's ever playing a Telecaster." "Rig Rundown", *Premier Guitar*, Gearhead Communications 2011, http://www.youtube.com/watch?v=u6DrxfrbbF8.

** "Guitar timbre is affected by structural components of the guitar" Cf. http://institut17.kug.ac.at/index.php?id=5937

For example, hyperbole might consist of superlative or strongly qualificative nouns, adverbs and adjectives; a Jackson Firebird guitar might enable exaggerated expression through a double-locking tremolo system, high-output pickups and large frets. An author might use hyperbole and litote to create irony; a guitarist might use a Firebird and a Marshall amplifier to create tremolo harmonics. The irony might be part of an essay, as the tremolo harmonics would be part of a song. Just as it would be difficult to create lyricism with irony, the song in question would probably not be a ballad.

Figures of speech, therefore, can be said to have equivalents in electric guitar sound. How, then, can such figures of sound be represented?

As with acoustic guitar and wind instruments [2, 8], the verbal description of the sound of the electric guitar poses something of a problem. In general, describing the audible is superfluous; so when it proves necessary, scientifically, socially or commercially, language is often deficient. An extensive study of cognitive metaphor is not our object at present, but let us remark in passing that at least a hundred adjectives are in more or less regular use on specialized internet fora to qualify electric guitar tone*, ranging from "bright" to "woody" and from "round" to "chocolatey". Some of these are, of course, synonymous and sometimes used as such by speakers ("chunky/meaty/beefy"); in other cases, apparent antonyms designate one and the same sound ("creamy/crispy/crunchy"); some speakers extend chosen metaphors ("the notes do burn and sear and the chords sizzle like a fat juicy burger on the grill"). Occasionally, manufacturers make reference to the more commonly used metaphors when naming their products, such as the Dunlop "Pork Loin" overdrive pedal or the Rio Grande "Barbecue" pickup. Whereas a name such as Seymour Duncan's "59 model" alludes to a chronologically identifiable sound (that of a 1950s Gibson pickup), the more metaphorical names rely on synesthesia, a frequent phenomenon in the description of sound.

When more objective descriptions are needed, however, visual representation tends to supercede verbal discourse. In everyday speech, one talks about "reading" an electronic circuit diagram, which provides an iconic representation of individual components and their correlation.

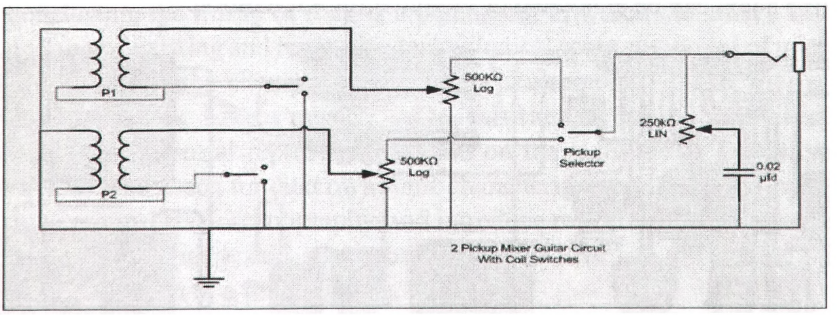


*Fig. 1.* Guitar circuit diagram

* Data gathered in September 2012 from the Seymour Duncan, Telecaster Discussion Page Reissue and Gear Page fora.

As in verbal language, the arrangement of the components is broadly linear, since the flow of electric current is from positive to negative, but visual discourse allows the representation of simultaneity or interdependence more concisely than verbal description. As one contributor remarks on an online forum,

In electronics we speak a different language, and [beginners] need to learn it. That language is the SCHEMATIC DIAGRAM. [...] I often didn't post replies at [the] time because I couldn't respond with a schematic and knew I couldn't express it accurately enough with just words [12].

Moreover, building a circuit implies knowing other, secondary codes, for if some components are identifiable by a part number given by their manufacturer, others use international symbols : a resistor's value, for example, is indicated with coloured bands.

Although it is obvious that these codes are a type of language, ("interpreting" them is an electronics engineer's everyday job), in the field of music this consideration takes on a synesthesic dimension: like a musical score, a circuit diagram allows the experienced reader to anticipate, mentally, the sound which the completed circuit would produce.

Visually, guitars can be read in a similar way to circuit diagrams. Although the proverb warns us not to judge a book by its cover, both rhetoric and psychology indicate that our first reflex is to do exactly that: readers expect from Dickens, for example, different stylistic devices than from Byron. Similarly, the logo on a guitar's headstock is synonymous with certain characteristic features: for Fender a 25.5″ (648 mm) bolt-on neck and single-coil pickups, for Gibson a 24.75″ (629 mm) set neck and dual-coil pickups.

Such legibility leads to the hypothesis of a technological score. Iconic representations can be used to display everything from a circuit to a signal chain, in which the substitution of a component of any magnitude, be it a resistor, a guitar or an amplifier, will result in a change of sound. It is noteworthy that such diagrams (Fig. 2) often bear dates, indicating that a sound chain can be revised periodically, rather like a text can be annotated or modified for a re-edition.

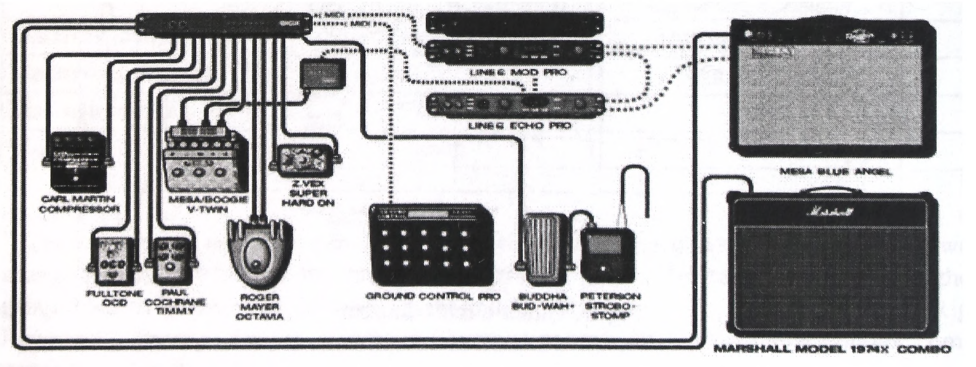


*Fig. 2.* A "rig diagram" (Source: thegearpage.com)

Contrary to a piano or a violin, an electric guitar is only the first and most visible part of a linear sound chain including effects pedals and amplifiers. The latter can accentuate certain frequencies in the signal while amplifying it, or amplify it to the point of controlled distortion. It therefore shapes the sound from the guitar in a particular way. Between the two are effects pedals such as chorus to give warmth and depth, or delay for repetition effects. The order of the effects is interchangeable, but with distinct results: for example, a compressor usually precedes and boosts a distortion pedal rather than follow it and flatten its output. The choice and settings of the elements of the chain will determine the audibility of the notes: a clean sound will bring out the detail of open chords, while heavy distortion will favour power chords or pinch harmonics. There is, therefore, a syntax of sound, prescriptive to a certain point and so permissive of transgressions for particular effects; for example, the guitar solo to Steely Dan's *Reelin' in the years* was played on a bass guitar amplifier and a modified Stratocaster [13]. Rather like language and expression, playing style and technology evolve in tandem, each taking the other to new heights. Marshall distortion, the Parsons-White string bender and the double-locking tremolo are just a few examples of this phenomenon. In this way, the playing style of each musical genre derives from the technology in common use, and vice versa.

Artists occasionally exploit the semiotic potential of the technological partition. Empty or unplugged speaker cabinets, for example, are common stage decor, and give a synesthesic illusion of volume. Alternatively, enclosures of one brand may be used to house the circuitry of another*, thus exploiting simultaneously the cultural hypotext of the brand displayed and the sonic hypotext of the circuitry used. There are also numerous examples of lyrics which refer to specific brands or models of equipment very probably used when recording [14], bringing to the song as a whole an autonymic dimension. The Who, for example, allude to "Hiwatt amps [15]", Hank Williams to a "Fender Telecaster [16]" and Motörhead and Metallica to "Marshall [17]" amplification.

In conclusion, the music of rock is a palimpsest in which the artist's discourse builds upon a pre-existing and renewable technological score composed of micro- and macro-structural figures chosen to produce particular sonic effects within limits constitutive of genres. Like a musical score, this rhetoric can be read visually on circuit diagrams, pictorial representations and on the instruments themselves: the latter are visual shorthand for their own sonic characteristics. As such, they contribute regularly to groups' stage scenography, and introduce reflexivity when referenced in lyrics. "If, as Shakespeare said, music be the food of love" — the electric guitar is surely something akin to a fitted kitchen.

* This is documented for Status Quo ("Parfitt and Rossi both use a combination of Vox and Marshall heads with Marshall cabinets — the Vox AC30 amps are built into Marshall heads." http://www.performing-musician.com/pm/aug08/articles/gtrtech.htm) and The Who (http://www.thewho.net/whotabs/gear/guitar/soundcity-hiwatt.html).

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