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         M U S I C   T H E O R Y   O N L I N E

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AUTHOR: James Harley
TITLE: Comment on Steven Smoliar's article
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[1] I have been working in the area of "composition with computers"
for some time now, so it was with interest that I read Steven
Smoliar's article on the subject (1). I have not had a chance to
see the publication that it originally appeared in (2), and therefore
have perhaps read his work slightly out of context. Nonetheless,
I think it is useful to comment upon a few of the issues which Smoliar
raises.

[2] First of all, the abstract for this article makes general claims
that are not substantiated in the body of the article. The rather
ambitious opening, "this is an examination of the current state of the
art in the computer composition of music," is fleshed out with a discussion
of just one application, that of David Cope's EMI Project, with a passing
reference to a single issue devoted to computer-generated music of the
IEEE Computer Society *Computer* magazine. Cope's work is admirable, and
certainly worthy of discussion, but we are here given no reasons as to
why it is that his work "best characterizes the current state of the
art." In fact, I would argue that his "recombinant" music is not
"composition" at all, but "re-creation" or "style imitation," and hardly
representative of original, creative work being done in the field, even
by David Cope himself. In fact, there is an enormous range of work being
done in the domain of "computer composition," from Ames and Barlow to
Xenakis and Zicarelli. These composer-researchers are attempting to
implement models of their own compositional "systems," such that the
computer will be able to generate truly "contemporary music in a style
which reflects the musical understanding or interests of the program
designer (or, in certain cases, the user). Surely, in order to answer the
question of "whether artificial intelligence has now solved the problem
of turning a computer into a successful composer," one would have to look
at the "creative" work being done, and not just the "re-combinant."

[3] Smoliar also raises the question as to whether the success of

Cope's EMI system is due to Cope's own practical experience as a composer rather than its own "theoretical" knowledge (as he puts it, "just *who* is doing the composing[?]"). It may be useful to clarify the distinction between "theoretical" and "practical" knowledge here. There is an implication in this that the experienced composer knows how to obtain effective results in the concert hall without needing to be concerned with "theory." I think the real issue is whether one criticizes the computer program for not reflecting specific theoretical concerns or constructs, or whether one criticizes the musical output of the program for its musical-stylistic integrity. The criteria which Smoliar seems to use to judge the alleged computer-composer is the presence of "deep structure," as opposed to merely "surface structure." However, it is only possible to evaluate the work on this basis because it is "style imitation" rather than original work. Other aesthetic and theoretical issues must be articulated in order to judge the output of, say, Xenakis's computer program, just as they would be to judge one of his "non-computer" works. The real question here may be whether it would ever be possible to find "deep structure" in any "recombinant" music, computer-generated or otherwise, and whether that structure could be considered original rather than "borrowed." If the answer is yes, then the Cope-EMI results must be judged as having failed; if the answer is no, then Smoliar's evaluation procedure must be brought into question. In any case, I find it difficult to see how it can serve us in looking at other work in the field, especially given the difficulties others have had in applying such linguistically-based concepts of structure to non-tonal, or post-tonal music.

[4] I would also briefly like to take issue with Smoliar's claim that "whether or not music *has* a deep structure, much of our response, as individuals, is to surface features," and that it therefore follows that "audiences listen to *performances* rather than *compositions*." This is a bold statement, and is, unfortunately, unsupported in his article, apart, one assumes, from introspection as a result of attending live performances of EMI-generated music. Based on conclusions drawn from my own introspection, I am inclined to agree that the quality of a performance can be very convincing, whatever the "quality" of the music, particularly for the first hearing. It has been my experience, however, that repeated hearings of a piece (and for the sake of the argument, I am speaking only of live performances) tend to clarify the strengths and/or weaknesses of the music, and to build up an analytical-perceptual image of the music that would include something of the deep structure, if there is one. Therefore (and thank goodness!), it is still possible to distinguish (if not right away, then at least with time, given patience and good-will) music which "has come from a struggling genius, a commercial hack, chance decisions, or even a computer program," not to mention music by that irreducible entity, Mozart, from the would-be's and wanna-be's.

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1. Smoliar, S. "Computers Compose Music, But Do We Listen." mto.94.0.6 (January 1994).

2. *Multimedia Modeling.* World Scientific.
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