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Review of To Doh or Not To Doh

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Review of "To *Doh* or Not to *Doh*"

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This research, in my opinion, is seriously flawed. I do not believe that sufficient understanding of the crucial issues in sightsinging pedagogy is exhibited for the described experiments to produce meaningful insights. This approach is simply on the wrong track altogether for both musical and empirical reasons. Basic principles of functional tonality are sometimes dishonored and the research paradigm seems heavily influenced by the tacit assumptions of rationalistic inquiry and the conventional quantitative values of validity, reliability, objectivity, mean scores, etc. At the end of my comments I will suggest an alternative research design that might encourage more suitable and fruitful results. But first, the following specific problems can be identified with this study:

1. This is a classic case of research offering solutions for a non-problem. The crux of sightsinging is not *labeling systems* per se (how to name the notes when singing), which the authors seem obsessively concerned with, but rather *hearing systems* (the mental processing and organization of one's thinking to accurately "find" and, more importantly, "to feel" pitches while singing). In other words, the authors fail to make the fundamental and absolutely crucial distinction between "what to call things" and "the methodologies employed to enculturate *tonal bearings*" (knowing where one is in a key at any given time, which is the real task of sightsinging). It is easy to confuse the "names" and the "methodologies," but, in fact, only a tenuous relationship exists between the two. The heart of the authors' misunderstanding is that the relationships which *do* exist are not the ones they are testing for in their experiments (more on this later).

Although, as the authors say, there may be as many as ten different labeling systems, most hearing methodologies boil down to either some kind of *intervallic* approach or some kind of *functional* approach. In the first case, the focus is on movement from note to note, with the relationship of successive pitches to one another of paramount importance. In the second case, the focus is on the relationship of pitches to a central tonic with longer-range (non-adjacent) connections of paramount importance. If research of some kind is really needed at all for this topic, which I doubt, it should be designed to get at the difference between these two approaches and not the labeling systems themselves.

2. Another distinction that escapes the authors' attention is the difference between acquiring music reading skills and learning scale-degree function. For example, it seems meaningless to compare a "fixed-do" system with a "moveable-do" system because the goals of the two approaches are entirely different. It would be like measuring the accuracy of someone's spoken French using the grammar rules of German—they each live in their own universe with their own reasons for existence. The benefit or advantage or purpose of "fixed do" is to improve or teach music reading (the ability to quickly and accurately identify the events of printed notation); it is "a way to say what you see" without necessarily attaching some meaning to each detail. This is an important, although preliminary, step in teaching sightsinging. This neutrality can actually be useful by withholding assignment of meaning in certain environments (e.g., highly chromatic or ambiguous settings)—that is, the label does not overdetermine the precise function of a pitch, which can happen in more value-laden approaches. It is, then, a necessary but not sufficient condition for informed sightsinging.

The point of using "moveable do," on the other hand, is entirely different: namely, to learn the "tonal bearings" mentioned above (i.e., to hear the network of attractions—the tugs and pulls and aversions—that pitches have for one another within a tonal magnetic field). One system is *visual;* the other is *aural.*

You might say the skill that emanates from "fixed do" can be exhibited *externally* (i.e., you can observe the results by direct listening), whereas the skill that emanates from "moveable-do" prac-

tice can only properly be exhibited *internally* (to really know if students are hearing in the way you want, one would have to electronically probe the appropriate spot in the inner brain). Or perhaps you could indirectly estimate the success of the methodology by observing performance subtleties—the "musical interpretation" of a given passage—as the student invests particular pitches with a particular nuance or weight by nudging or stretching or applying a lighter or heavier accent. It is not simply a matter of tabulating "right" or "wrong" notes on a score sheet as these experiments do.

Here is an experiment that, in my opinion, would be meaningful (i.e., it would be a good test of whether your students "get it"—the hearing of tonality). Have them sing the pitch pattern "C-D-E-F" in two different ways—first as scale degrees 1-2-3-4 (in C major) and then as 5-6-7-1 (in F major).[1] [Whether they actually sing with numbers, fixed do, letter names, moveable do, la-la-la, dooby-dooby-doo, on a kazoo, or just hum, is totally immaterial. The ability to *think and hear in the context of a specific key* is what is being tested, not whether or not they can sing specific notes as measured in frequency ratios.]

In the first case (C major), the desired sensation is that of leaving a departure point and moving tentatively toward a poised, "still-ready-for-action" stopping place in mid-stream; in the second case (F major), the desired sensation is of gathering momentum for a point of arrival, with a convincing degree of finality achieved by the end. You will know the difference by carefully observing the students' kinesthetic reaction and interpretive style and phrasing—in the first case, they may decrescendo and in the second, increase the dynamic level as the goal note is reached, or they may inflect the pitch interpreted as tonic—either the first or last—with a greater sense of downbeat or stress.

Performing this or trying to hear it (or grade it on an experiment) as merely a "whole-step/whole-step/half-step" pattern—the neutral, value-free possibility—has nothing to do with the experi-

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[1]This experiment and some other points are taken from my article, "The Jersild Approach: A Sightsinging Method from Denmark," *College Music Symposium* 36 (1996): 149-161. Ironically, the authors quote from the first paragraph of this article in their introduction but may not have read all the way to the end.

ential feel of the two quite different tonal situations. The trouble with most sightsinging approaches—and, I might add, with the experiments in this article—is that their goal is merely *accuracy*—singing the correct pitch at the right time. The real goal ought to be *hearing the music in particular way*—a way that is musical (i.e., a way that respects the encoded internal-movement proclivities of the specific context). The entire job of sightsinging is context sensitivity and that can only be done by encouraging students to hear tendency-tone patterns or what Wedge used to call "active vs. rest-tone" patterns.[2] Of course, no one would deny the value of accuracy as well. I am only saying that mere accuracy is not enough.

Yet another way to define the issue is that we only know we have done our job as sightsinging teachers if students can exhibit sensitivity to musical chiaroscuro. We can't really tell if they have learned anything about how tonality itself actually operates—and isn't this why we do sightsinging in the first place?—simply by observing if they sing the right notes on some test because those "right notes" may be performed in the most antimusical way imaginable (e.g., as a series of flat, undifferentiated pitches unrelated—in their mind's ear— to any defining tonal grid and thus totally lacking any distinctive or individuated meanings of "tension and release" or of "leanings and resolutions"). And this is why an accuracy report as given in the experiments, just by itself, offers only an empty number.

In fact, we have all witnessed such monochromatic performances that plod stiffly and computer-like from note to note—either in the sightsinging class or more likely on the concert stage; we often begrudgingly have to give credit for such a theory performance even though the invisible threads of connection between pitches are missing. It is in this sense that this article misses the boat. The conception of the problem and the testing methods are just too primitive to distinguish between a performance that is correct (maybe even accidentally correct), yet mechanical, compared to one that is correct (for the right reasons) *and therefore musical.* From how the experiments have been designed, there is no way to tell what the reason might be for a "correct" answer.

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[2]See George Wedge, *Ear Training and Sight Singing*, Schirmer, 1921. This is still one of the best sightsinging books ever written.

3. One could argue that it doesn't make any difference which syllable system (fixed or moveable) is used, as the article seems to prove—and, for all I know, perhaps this was its goal—so long as scale-degree function is being encouraged or that we could teach several methods simultaneously. Although this attitude appears to promote an openminded and ecumenical spirit, in practice it produces a pedagogical nightmare. Once syllables (or numbers for that matter) are used to represent scale-degree tendencies (the moveable approach), they then become forever tainted, so to speak, for just simple objective naming purposes; in other words, once the functions have been let out of the bag and identified, one cannot so easily go back to the more pedagogically impartial "fixed-do" system—at least it will never have the same meaning. It would be like trying to put toothpaste back into the tube.

The reason for always calling the leading tone "ti" is to inculcate the sensation of tension (and its implied resolution to tonic) in the mind's inner ear; it's the special "feel" of the 7-1 pattern that is being associated with a specific name (ti-do). To suddenly call other scale-degree patterns, with their different sets of encoded meanings, by the same name is to court disaster; confusion will reign (maybe even rain) in the classroom. All the other basic patterns (5-1; 2-1; 6-5; 4-3; etc.) have their special "feels" or flavors, too. Tonality is simply the sum of all these special flavors with its own composite overall "feel," which in turn is different from modality, expanded tonality (of the early 20th-century kind), and atonality.

Of course, the meanings or "roles" of pitches change according to their surroundings. For example, the tendency of scale degree 4, in the company of 7, is to pull *down* to 3 (operating as part of a dominant function), whereas the tendency of 4, in the company of 6, is to pull *up* to 5 (operating as part of a predominant unit). Many dozens of additional examples could be cited. This is what sightsinging is all about: finding, understanding, hearing, and finally being able to recognize, contextualize, and perform, from one's mental stockpile, these many dozens of patterns. It's certainly *not* about fussing over what to call each note.

4. The goal of sightsinging, then, is to learn what it feels like to move about within the tonal universe—tonal bearings again—and the reason for naming individual notes is to help remember what *role* they each play. It's the roles themselves, not the names, that count. You could make up words from a fake language if you wanted to name the notes. The reason the results are about the same in every case in the experiments reported on in this article is obvious: the students were probably all thinking about how to locate their bearings within a key in about the same way—they were using scale-degree function whether they knew it or not and perhaps even independently of their naming system in some cases. Most bright students will figure this out on their own from cultural conditioning and trial and error *in spite of whatever official system of labels is being taught by the teacher or being used on a test or in an experiment.*

One glimmer of insight along these lines peeps through in the article when the authors admit that "it is impossible to know what may be taking place at some cognitive level" and that the students singing "la-la-la" could have been thinking functionally all along (although they call it "subvocalizing" rather than "thinking functionally" as that term may not be part of the operational vocabulary of this research.) Of course! In fact, we hope they *were* thinking functionally! We don't need an experiment to figure this out. The students singing in "fixed do"—or any of a hundred different naming styles—could have been thinking functionally too. Why not use a system—like "moveable do" or numbers—that will actively force them to do this in the first place instead of making them overcome the inherent limitations of non-moveable approaches (*aka* inflexible, non-functional methods). In addition, the authors comment that many students sang correct notes but with the wrong labels—further proof of the frequent mismatch between what comes out of the mouth and what is going on inside the head.

This points out, by the way, the folly of Study #4, which compared "moveable do" with numbers: they are, in fact, the same thing!—two different labeling systems for *the same methodology* (scale-degree function). Again, the error of mistaking labeling systems for teaching approaches arises. Equally pointless would have been to compare "fixed do" with letter names (also identical systems, although intervallic ones in this case).

5. Nothing I've discussed up to this point in my review is really controversial among most serious teachers of sightsinging—and I stress the word "serious" here. In other words, there is nearly universal agreement about the superiority of *scale-degree function* (regardless of the names put to the notes) for the kind of tonal music that is the foundation of most undergraduate aural-skills programs. [The pentatonic and modal repertoire associated with the Kodaly system is another matter.] The reason for this is simple and it has nothing to do with teaching style, preference, or background experience. The argument would be made on musical grounds, not on pedagogical or philosophical grounds.

The reason for the superiority of scale-degree function is because it is the perfect match—a parallel system—for how tonality itself actually works: tendencies and aversions of pitch patterns work for or against the possibility of particular notes assuming tonic status. Activation—or denial—of latent potentiality is what tonality is about. Fetis, the 19th-century theorist, was the first to make this understanding explicit. *We should be getting our clues and signals for teaching sightsinging, then, from the structure of music itself, not from the kind of empirical research represented in this article.* I am, therefore, in basic disagreement about the whole premise and value of this experimental approach. To me it is a dead-end street.

6. The final proof to me that the authors have not sufficiently thought through the ramifications of their approach is that some of the real controversies of sightsinging regarding solfege methodology are barely alluded to. One example is the so-called problem of "do-based" vs. the "la-based" (or Kodaly) systems of singing in minor ("do-re-me" vs. "la-ti-do"). Perhaps an experiment involving that comparison would have been more revealing. But, of course, the same problem of not actually knowing what was going on in the student's mind and ears during the act of sightsinging would still remain. I don't see any way around this problem. I think it is just a basic design flaw of the research methodology. The names a student uses when sightsinging may or may not correspond to the actual grooves that you want your students' hearing to be channeled into.

I won't get sidetracked discussing the "pros" and "cons" of singing systems for minor since the authors do not open this can of worms. I will mention, however, that the series of articles in this journal by Tim Smith[3] is definitive, in my opinion—and he argues, notice, from musical/structural grounds, not empirical research. The authors compare, in their introduction, the wealth of publication about sightsinging based on musical arguments with the paucity of research based on empirical research. Perhaps there is a lesson to be learned from this statistic. Perhaps we now can understand why not many experiments are done: they are not very revealing.

Appropriate design, in my opinion, for a proper empirical research study—if one is needed at all—almost demands interviews with students after their performance (or perhaps some kind of running commentary, with brief stops and starts, during the performance) so they could discuss how they were hearing and judging where the next pitch was. How did they find their bearings? What were they thinking or feeling? How did they recognize mistakes or get back on track? And so on. This could be fascinating and meaningful.

Gary Potter (Indiana University) used this method (called "naturalistic inquiry") very effectively for research into dictation strategies.[4] And this is how research into strategies for how grandmasters make good chess moves has been done as well. Frequently, these expert chess players, who were interviewed while they were

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[3]See Michael Houlahan and Philip Tacka, "Sequential Order for the Preparation, Presentation, Practice and Evaluation of Rhythmic and Melodic Concepts," *Journal of Music Theory Pedagogy* 4/2 (Fall 1990); Timothy A. Smith, "A Comparison of Pedagogical Resources in Solmization Systems," *Journal of Music Theory Pedagogy* 5/1 (Spring 1991); Micheal Houlahan and Philip Tacka, "The Americanization of Solmization: A Response to Timothy A. Smith," and Timothy A. Smith, "The Liberation of Solmization: Searching for Common Ground," *Journal of Music Theory Pedagogy* 6 (1992). [The authors of "To Doh . . . ," by the way, only cite a portion of the debate with Houlihan and Tacka in their references.] This complete series of articles is by now so well know in theory pedagogy circles that I imagine most teachers have the references memorized.

[4]See Gary Potter, "Identifying Successful Dictation Strategies," *Journal of Music Theory Pedagogy* 4/1 (1990): 63-71.

playing, could not say why they made a certain move ("it intuitively felt right" was a standard response). This different and more subjective research paradigm that values trustworthiness, credibility, transferability, dependability, and confirmability over the more traditional objective virtues of reliability and validity (mentioned in my opening paragraph) is what would be required, I believe, for meaningful results to be produced. I am not saying that quantitative research is never of any value in doing research—only that, in this particular case, the qualitative approach may shed more light.

Potter does a masterful job of summarizing the merits of this approach and I quote (and sometimes paraphrase) from his article here:[5]

a) Naturalistic research should be done in its natural setting, not in a lab setting. Perhaps students could be tested in the place where they practice their sightsinging.
b) Data gathering and interpreting are done better by humans than by machines. We should gather data with our individual prejudices, strengths, and shortcomings influencing what we regard as important. To have a bias is not necessarily an undesirable thing.
c) Intuitive knowledge should be valued at least as highly as knowledge expressible in language or numbers. We should not merely record data but will pursue hunches and encourage responses which we feel to be important or useful.
d) Qualitative methods should be at least as valuable as quantitative. Relatively little of our data should be numerical.
e) Sampling should not be random but purposeful. We should choose subjects carefully. We do not wish to study the average musician but rather the expert. We should focus on those who sightsing particularly well (perhaps regardless of their specific methodology) and not just routinely test an entire class.
f) Data-analysis should be inductive rather than deductive, retaining the rich multiplicity of the data, exposing mutually

[5]Also see Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (Sage Publications, 1985), pp. 39-44, which is the original source that Potter draws from for his work.

influencing factors. We should not try to boil experience down to a few sightsinging "rules."

g) Our interpretational theory should arise from the data itself; the research is not conducted to prove or disprove a hypothesis (or a particular labeling system for sightsinging). Our question should be: how do experts sightsing? We will observe and find out.

h) Even the design of the research project itself should emerge from the data and might change as it goes forward. We do, however, have budget and time constraints; within these there is considerable flexibility.

i) Human subjects should have a voice in interpreting data about themselves. We should constantly be urging them to confirm or disconfirm what we think they are doing.

j) The research findings should be presented in a lengthy, inclusive "case study" format rather than in a summary which "averages away" some of the interesting aspects of the data. We should prepare the case study with input from all involved.

k) Generalization should be avoided.

l) Applications to other settings should be necessarily tentative.

m) Boundaries of the inquiry should emerge as research progresses. Width of focus should be indeterminate. We should continue until time and money run out.

I respectfully propose to the authors and to other interested researchers that the above model (based on Potter's dictation study but adapted here for sightsingers) would reveal more about how we should be teaching sightsinging than the kind of further studies suggested in the authors' concluding "Future Research" section, which would only recycle the same kinds of mistakes that I have already painstakingly identified in my review.

The understanding of sightsinging and its research requirements represented in this article are just too simplistic. Ironically, the authors have proven my case for me, but without realizing it. It truly may *not* matter what labeling system is used, as they say. But this is true *only if you are hearing "in the right way."* Hearing in the right way, for me, means hearing all the powerful implications, ambigu-

ities, and projections of the wonderfully rich and varied system of relationships that makes up functional tonality—that network of attractions, spoken about earlier, that defines the keynote as central and prior to all the others.

Thoughtful teachers will eventually have to decide what hearing tonal music *in the right way* means to them—and that has to consist of something more than matching, in pitch accuracy, to the answer key on a sightsinging test. As I say at the end of my Jersild article, "A sightsinging teacher should be more than an alarm bell for wrong notes." But the question of "how to hear tonal music" cannot easily be answered by the type of experiments identified in this article. The simultaneously simple and profound answer, of course, is that you must hear it *tonally* and *musically*—with all that implies. Regardless of one's individual answer to this basic question, however, once a detailed response is articulated, then you must choose your methodology accordingly—the appropriate teaching approach will be revealed from that considered reflection. Pedagogical choices should always flow directly out of thoughtful stances toward how music works. Music itself is our textbook and our best teacher for its own study. We only have to listen to what it tells us and be sensitive to its variegated shadings of pitch meaning.