

# Variations on the Theme of Musical Similarity

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## ABSTRACT

I will take a number of musical examples and explore the question of how far away a variation can be from a theme and still be considered "the same theme". Some of my examples will, naturally, be taken from well-known (or possibly not-so-well-known) classical sets of variations on a theme (e.g., Rachmaninoff/Paganini, Bach/Goldberg, Beethoven/Diabelli, etc.), but I will also use some other kinds of variations on a theme (e.g., different popular musicians performing the same popular song).

## BIOGRAPHY

*Douglas Hofstadter is College of Arts and Sciences Professor of Cognitive Science at Indiana University, Bloomington, where he is also Director of the Center for Research on Concepts and Cognition. In addition, he is a professor in several departments, ranging from Computer Science (to which he sees himself as only marginally connected) to Psychology (which he feels comes closer to his core), and Comparative Literature (to which he also feels a strong affiliation).*

*Hofstadter is "pi-lingual", in his own joking words – meaning that aside from being a native speaker of English, he is fluent in French and Italian, both of which he has spoken for decades, and has quite good though sub-fluent conversational and reading knowledge of German, Spanish, and Russian, as well as five years of intense study of Mandarin Chinese under his belt.*

*His first book, "Gödel, Escher, Bach: an Eternal Golden Braid", won the Pulitzer Prize for General Nonfiction in 1980, thus providing a very salient jump-start to a career that by now includes many well-known books and contributions in a remarkable spectrum of widely separated areas. Aside from his pioneering work in cognitive science and the philosophy of mind (focusing on computational models of the fluidity of human concepts, the creativity of analogy-making, and the revelations that come from the study of error-making, as well as a novel theory concerning the key abstract structure whose presence gives rise to a sense of consciousness and of being a "self" or an "I"), Hofstadter has done research that has had a wide impact in*

*theoretical physics (his 1975 Ph.D. dissertation, on what was later dubbed the "Hofstadter Butterfly", which in fact was the first fractal ever discovered in physics, led to a famous article and hundreds if not thousands of subsequent citations that continue unabated to this day), has done work in various areas of mathematics (he has made many small contributions to number theory and geometry, as well as logic), has written about and composed music (he has a compact disk with roughly 40 of his pieces for piano), has created many idiosyncratic types of visual art (he has had numerous one-person exhibits in the U.S. and Canada of his art, which is inspired mostly by alphabets, music, and the play of symmetry and asymmetry, and he has published a book on the unusual art form that he dubbed "ambigrams"), has been deeply involved for many years in poetry translation and other creative types of translation (his longest and perhaps most original book, "Le Ton beau de Marot: In Praise of the Music of Language", published in 1997, is an extremely far-ranging exploration of the intertwinedness of form and content throughout language and art in general, and then, only a couple of years after it came out, he published a remarkably sparkling verse translation of the undisputed peak of Russian literature, Alexander Pushkin's novel-in-verse "Eugene Onegin"), has made noteworthy contributions to our awareness of the pervasive sexism in our society, especially in the American language (he has published influential articles on sexist language and more recently co-written a novel about sexism in America) -- and there are yet other areas that could be mentioned.*

*One of Douglas Hofstadter's lifelong passions is to explore and characterize the many unconscious cognitive mechanisms that collectively underlie human creativity (to which he incidentally prefers the term "discoverativity") -- and indeed, the fact that Hofstadter's major focus in cognitive science is human creativity makes perfect sense for the precise reason that he is himself a genuine innovator and creator in many diverse fields, ranging from art to science to literature.*

*Hofstadter's own dozen-word self-characterization is that he is someone who is "forever in love with and in search of deep and hidden beauty".*

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Theme And Variations. It's important to understand how musical form works because it's the basic structure of an entire work. In this article, we'll analyze each form, give a clear definition, look at a few specific examples, and also the purpose of each musical form. Let's start off with strophic form. What Is Strophic Form. Strophic form is one of the most common musical forms. It's also referred to as song form or verse form. Now that you have a grip on the main different musical forms, it's important to understand that there are other variants of each form. Each form can be adjusted to expand, condense, or in a way switch to a new form. Below is a list of some other forms you may run into in musical compositions that you analyze. The notion of musical similarity is particularly complex because there are numerous dimensions of similarity. If similarity takes place between different fragments from one musical piece, a musical similarity implies a repetition of the first occurring fragment. As well, eventually, the similarity does not occur by direct repetition, but by presenting in two (or more) set of relations, some common values or patterns. Objective musical similarity can be based on musical features such as Musical Devices Poetry obviously makes a greater use of the "music" of language than does language that is not poetry The poet, unlike the person who uses language to convey only information, chooses words for sound as well as for meaning. The poet uses sound as a means of reinforcing meaning.

4 Repetition An essential element in all music is repetition. All art consists of giving structure to two elements: repetition and variation Our love of art, then, is rooted in human psychology. We like the familiar, we like variety, but we like them combined. 5 Repetition The poet likewise repeats certain sounds in certain combinations and arrangements, and thus adds musical meaning to verse. Musical variation, basic music technique consisting of changing the music melodically, harmonically, or contrapuntally. The simplest variation type is the variation set. In this form of composition, two or more sections are based on the same musical material, which is treated with different. The art music of southern India, for example, is built on the concept of a string of pieces, each a variation on a given "theme." Together they make a complete musical structure. The "theme" in this case is a raga. Conceptually more complex than a theme in Western music, the raga consists of a particular scale pattern, various melodic formulas, and melodic relationships and fragments peculiar to this raga.

PDF | Electronic Music Distribution (EMD) is in demand of robust, automatically extracted music descriptors. We introduce a timbral similarity measures | Find, read and cite all the research you need on ResearchGate. We introduce a timbral similarity measures for comparing music titles. This measure is based on a Gaussian model of cepstrum coefficients. We describe the timbre extractor and the corresponding timbral similarity relation. We describe experiments in assessing the quality of the similarity relation, and show that the measure is able to yield interesting similarity relations, in particular when used in conjunction with other similarity relations. We illustrate the use of the descriptor in several EMD applications developed in the context of the Cuidado European project.