

Principles of Indeterminism

Heimo Ranzenbacher

Code–Notation

With software, graphic artists have at their disposal for the first time a tool comparable to musicians' systems of notation, a tool that not only is able to bring production and performance into congruence but also one that intensifies the process of bringing the two disciplines methodologically into line with one another and thereby formalizes interdisciplinarity beyond the interaction of diverse interests through a grammar shared by their various languages. Thus far, the clearest manifestation of this phenomenon has emerged within the framework of the open source movement with the development—motivated (in no small measure) over the course of art projects—of separate programming languages that, as publicly available reference sources, have become the basis—the source code—of other individual applications. However, an additional consequence of codes binding among disciplines is the dynamization of the systems involved, and this is precisely the constitutive core of the concepts and undertakings subsumed under the heading media art.

Ars Electronica is staging *Principles of Indeterminism* as an evening spent concentrating on the theme of this year's festival, "Code—The Language of Our Time." With its primary focus on music, the program will attempt to take a historical approach to identifying principles of media art in paradigmatic works of modern classicism and to establish their affinity to current strategies of real-time processing in the graph arts. The leitmotif here is the principle of transformation and metamorphosis alluded to in the title, which, as the artistic credo of composer, tonal experimenter and architect Iannis Xenakis, also applies to the concept underlying art forms characterized by interdisciplinarity, synesthesia and technique (or interactivity, generativity and multimediality). The evening's program will range from analog to electronic to digital music, from composed to programmed music, from orchestral and instrumental ensemble playing to live electronics and digital sound synthesis, as well as from sound to image. Xenakis' ideas are both the crux and the point of departure of these concert and performance events.

Parametrization

Iannis Xenakis (1922–2001) is considered a creative pioneer and is much admired by many contemporary digital musicians for his inimitable electronic worlds of sound that reflect his radical understanding of music as an algorithmically based, open process. But even beyond the approach of this conceptualization whereby music is to be understood as a sort of software, not the least of the reasons why Xenakis' oeuvre continues to fascinate is the psycho-acoustic, spatially formative dimension of much of his music. Xenakis, in his work as a composer, utilized his competence as an architect to create, as it were, acoustic metaphors for conceptions of space that have been thematized and formalized in the media arts repeatedly since their inception.

The search for a leading light from the century just past was substantially motivated by

the festival's intention to document the fact that the process of opening up the uncharted territory of digital code did not in fact represent the invention of a whole new world. Rather, the concepts that constitute what is tantamount to a leitmotif running through the works of the current generation of digital artists most certainly do have a past history, and, in point of fact, many of the concepts dating back to the '50s and '60s were not able to be implemented in suitable fashion until the advent of the instruments and tools of information technology and the development of the computer as a freely programmable device. Thus, with its focus on the role of software in art, the didactic arc of the program lined up for presentation in conjunction with *Principles of Indeterminism* begins with the parametrization and production of sound, and ranges over developments in the thematic context of the parametrization of interpretation including its ultimate phase in which performance too mutates into a real-time process. It proceeds from the instrument to electronics to the laptop; from the composer who works "offline" with notation systems recorded on paper, to the composer who indeed does work with the computer but does so offline, and all the way to current tendencies—represented by programs like Supercollider and various configurations of MAX—that set up a sort of real-time developmental environment in which the composer's work in writing software and performing music are blended together into a single process and distinctions between the disciplines of music and media art start to become obsolete.

Principles of Indeterminism takes a number of different approaches to spanning this arc with illustrative pieces by Edgar Varèse, Morton Subotnick and Iannis Xenakis, Steve Reich—in light of his iconic role for minimal music, which can be interpreted as a forerunner of generative music—and Marco Stroppa. These are pieces that, analogously to the paradigmatic strategies of composition, have, on one hand, been remixed by representatives of the digital music generation, and, on the other hand—as illustrated by the work of Bill Viola, Sue Constabile, Lia, Martin Wattenberg, Marius Watz, Justin Manor, Gerda Palmethofer and Stefan Mittlböck—are accompanied by visualizations that exemplify, as it were, the affinity of the strategies. For the lineup of digital musicians, Rupert Huber / Tosca, Ryoji Ikeda, Otomo Yoshihide and Naut Human have been engaged. Their advancing, enhancing remixing of these remixes is, in theoretically consistent fashion, just as much a part of their work as the performance of their own pieces, which draw their principle conception of self from precisely this sort of metamorphosis. Didactic intentions are likewise behind the shifting of performance venues—from the Main Hall of the Brucknerhaus to its Middle Hall, on to the Klangpark and back again—that go along with these changing strategies.

Visualization

Synaesthesia is one of the leitmotifs of media art and probably the quality in which the fundamental principles that differentiate it from the traditional arts stand out most strongly. So then, if one's goal is to design an evening's program featuring statements that deal with the essence of the current state of media art, then synaesthetic qualities are by definition among one's central intentions, and these are manifested in *Principles of Indeterminism* in the form of perceptual and strategic linkage of sound and image.

The second matter of concern has to do with a question that has been addressed over and over again in the context of the discussion of the role of software in art—whether software is merely another system of notation, and, if it is, then at what point does it become an artistic work in its own right? In principle, notation functions only when there is general agreement about it or—with respect to new systems—when it is so meaningfully expressive that it produces general agreement.

In this connection as well, the history of music delivers analogies based on the development of new systems of notation. These were born of the necessity to come up with a corresponding set of characters to record in writing its newly discovered tonal worlds and to provide for a suitable expansion of interpretational latitude. Prominent examples are to be found in the work of Iannis Xenakis and Varèse as well as that of Ligeti, for instance, and, more recently, Logothetis, who took notation far beyond its conventional function of an exact or even merely associative set of instructions to become a largely autonomous graphic vocabulary.

Nowadays, the question of notation systems is simultaneously a question of visualization, or rather one of the power of expression of visual or—in the realm of software—text-based systems for the resulting sensorially determined processes. To what extent is the graphic quality of a score in a position to no longer be just an explanatory adjunct to the music but rather to expand or possibly even to replace it? Thus, artists who work with (real-time) software—that is, those who program their graphics and how they behave—have also been invited to visualize pieces of music. An additional precondition for this engagement was to showcase their work live on stage as an integral part of the musical performance.