

Following this line of thought the dissertation considers the poetics of Voren Neidich and Arvo Pärt, authors who use specific 'subversive' strategies of an 'ascetic' relation to the system. Another part of the dissertation is devoted to the concept of 'second modernism', the only manifestly proclaimed movement that can be registered in the post-postmodern period that is related to music. After presenting its characteristics and a case analysis, the conclusion is drawn in the form of the last subsection which is called the "Theory of the Period after Postmodernism". Through a critical examination and re-examination of Mikhail Epstein's idea of *postmodernity* and Terry Smith's idea of *contemporaneity*, this dissertation proposes a new theoretical paradigm – Shilly-shally-ism – (shilly-shally: irresolute, undecided manner)³, as a kind of interregnum period, marked by a general social fluctuation and stylistic instability in arts.

The paper thus outlines a map of divergent theories and artistic practices in an attempt to position music in a complex social and cultural environment, as well as in an attempt to offer a clearer understanding of the period after postmodernity, and to formulate a new term that would be adequate for defining it.

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DIGITAL TECHNOLOGY IN SERBIAN ARTISTIC MUSICAL OUTPUT (1972–2010)¹

The main subject of this work is the analysis and contextualisation of changes in the implementation of digital technology in compositional practice in Serbian artistic music. The aim of the text is to form a musicological narrative about Serbian computer music based upon the succession of technological and musical innovations, relying on the general progress in this domain and related theories worldwide.

The thesis starts with a review of the period preceding computer music, presenting details about early electroacoustic

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¹ The dissertation was produced under supervision of Dr. Vesna Mikić, Professor at Faculty of Music in Belgrade and defended on March, 1st, 2018 before a committee comprising, apart from Dr. Mikić, following members: Dr Mirijana Veselinović-Hofman, retired professor at Faculty of Music in Belgrade, Dr Miško Šuvaković, Professor at University 'Singidunum', Dr Biljana Leković, Professor at Faculty of Music in Belgrade, and Dr Mladen Marković, Professor at Faculty of Music in Belgrade.

³ [Ahttps://www.merriam-webster.com/dictionary/shilly-shally](https://www.merriam-webster.com/dictionary/shilly-shally)

music that would lead to the idea of the implementation of digital technology in compositional practice. This introductory chapter is followed by a segment dedicated to terminological issues, such as computer, hardware, software, program, code etc., as well as a historical overview of theories on computer music allied with the questions of modernism and postmodernism. Based on this theoretical standpoint, the rest of the work is dedicated to the historicisation of the most resonant events in computer music's general development as well as a detailed analysis and portrayal of these kinds of works produced in Serbia.

Beginning with the alteration of military digital hardware by enthusiasts and amateurs after World War II, through institutional development in the 1960s and 1970s and its global expansion in the eighties and nineties, computers have travelled a long way since the experimental stage to an implicit means of production in virtually every human activity, today. Parallel to this development, this thesis follows the threads of its 'intersection' with the field of artistic music that manifested itself through the formation of an interdisciplinary artistic practice of computer music during the 1960s and 1970s, created by *musical engineers* (term by Otto Laske) – composers who possess skills of programming and digital synthesis as well. In order to translate musical systems and theories into computer programs, it was necessary to collect and process a large amount of data, which is why a common discipline in the humanities was formed – *computational musicology*.

During the eighties, a new generation of authors stepped out on the artistic scene, authors who used computers to complete

an ever increasing number of compositional tasks, so the appearance of 'household' computers coincided with the 'transition' from modernism to postmodernism, and the idea of *musical engineering* underwent a transformation as well – from an objectivistic, systematic autonomous and autochthonous artistic practice into one of many technocultural platforms that equally formed a web of digital 'symbols', that is to say, information which was at the authors' disposal. This period also saw the coming of age of the first generation of 'digital natives', authors whose work implied the use of computers, and who would resolve the entire process of the evolution of computer music during the nineties and early two-thousands, in a specific, post-digital scepticism towards digital technology that is still implied, but is now being approached from a critical aspect, not so that it will be superseded by a new paradigm (which does not exist), but in order to be rid of illusions of the constant progress of technology and its 'perfection'.

The general development of computer music did not fail to reverberate in Serbia, given that the production of computers in SFRY was, from today's perspective, on a high level and powerfully aligned with leading foreign companies. In spite of that, the first implementation of the modernistic concept of *musical engineering* in the Electronic Studio of the Third Program of Radio Belgrade was done on a hybrid system without a computer, mostly for financial reasons. Consequently, we can only provisionally speak about computer music in this period in Serbia, even though numerous strategies of work with digital technology were used in local works – such as stochasticity, algorithm composition, soni-

fication etc. – demonstrating in this way the maximum potential of the digital sequencer on Synthi 100. Referring to the high level of development of compositional techniques despite the scarcity of hardware, is Vladan Radovanović's *Computoria* – a result of his visit to the Institute of Sonology in Utrecht.

In the mid-eighties, we can observe a more significant breakthrough of household computers being used in local compositional practice, as well as the digitisation of the Electronic Studio of the Third Programme and the opening of a new, completely digital Tone Studio at the Faculty of Music in Belgrade, offering opportunities for creation to an increasing number of mostly young composers, who began to discover different strategies for the use of sampling, generating and administering databases of sounds and data. Other than Radovanović and Hofman, during the eighties, computer music was in the focus of interest of Marjan Šijanec, Miša Savić, Vladimir Tošić, Milimir Drašković, Milica Paranosić, Vladimir Jovanović and Zoran Erić, who were joined by Miroslav Štatkić, Slavko Šuklar, Boris Despot, Tatjana Milošević, Ivan Božičević, Goran Kapetanović, Jasna Veličković and others in the nineties.

Irrespective of the fact that there is quite a large number of authors listed here, not everyone used computers in the same way and to the same extent, which is why their compositional practices moved from

'classical' musical engineers, like Šijanec, who focused exclusively on working with a computer in one period, via studio electronics, viewed as an equally important genre in the works of Radovanović, Hofman, Tošić etc., and the live electronics of Hofman, Erić, Veličković, back to the musical engineering 'after musical engineering' of Vladimir Jovanović.

In the conclusion of the thesis it is emphasised that *musical engineering* in Serbia travelled a path which can largely be compared with the general tendencies abroad in both musical achievement and technological mastery. However, circumstances in society and the financial situation seriously challenged the ability to keep up with the general development of digital equipment. Even so, Serbian authors proved that this was not necessarily an obstacle to producing innovative and creative works with digital equipment, which were regarded as superb achievements by both domestic and foreign critics, and received several important international awards.

The dissertation consists of 323 pages (Times new roman 12, 1.5 spacing), 12 chapters with 437 footnotes and 39 graphical and notation examples. The literature contains 224 entries in the Serbian, English, German, Croatian and Slovene languages, with a list of websites containing 23 addresses. The thesis also includes a brief glossary on computer music related terms.