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Introduction: Musical Research at IRCAM

This issue presents a snapshot of *Musical Research at Ircam* between 2008 and 2011, following the very first issue of this journal in 1984 on *Musical Thought at IRCAM* (Tod Machover, Editor). Within this time span, whereas the role of Ircam as an institution dedicated to scientific research for artistic creativity has remained unchanged, the context of such innovative endeavors, the role of the institution in the new social context, and its impact in the ever-democratized access to new technologies for the arts have changed considerably. A comparative study of this global evolution in the life and orientations of the institute, and within the larger context of musical research between the two issues is thus the subject of this editorial note.

In contrast to the 1980s, computer music and technological approaches to music composition and practices have now become highly democratized and are no longer in the hands of, or led by a few funded institutions. This is to a large extent due to the wise politics of such institutions in the cultural, educational and technological dissemination of their findings to the greater music community. Innovation in the arts and technologies is thus no longer a specific privilege, and the role of institutions has changed accordingly. On the technological side, innovations for the arts can take place in small laboratories or at home and on all continents, to the extent that dominating patterns have diminished despite varying qualities of work. On the artistic side, dominating schools of thought have become rare and plural artistic currents share the global common space. It is thus important to note the shift from 'musical thought at Ircam' in the 1984 issue, to 'musical research' here with corresponding connotations.

The role of institutions such as Ircam in this global and social context is to foster creativity at the intersection and union of artistic, imaginary, and scientific discovery. Such mutual impact is not only a matter of inspiration but also a consequence of physical laboratories where artists and scientists can collaborate on common goals despite their cultural differences. In a global context, where scientific and cultural institutions have uniformly acquired their own identities and independent workflows, the role of Ircam as an institution is the *coordination* of communities towards a common goal for the arts by constituting and providing playgrounds for such heterogeneous workgroups.

The common ground between the sciences and the arts can be the world of new technologies, provoking innovation in both fields; or it could take the form of concepts, analogies, or art-science challenges involving parallel and concurrent mechanisms of thoughts and their convergence. The 'C' in Ircam historically refers to this coordination effort, but in our contemporary context it does also refer to *Concurrency* and *Contestation* between various disciplines and cultures.

Musical Research at Ircam finds its place right at the intersection of artistic creativity and scientific discovery. It aims at elevating interaction between various scientific and artistic projects and departments at Ircam, and offers experimental laboratories where composers strive to enlarge their musical experience on the one hand, and scientists aim at extending research and technological paradigms on the other. In its merit and structure, musical research is different from both scientific research and artistic production. Its subject neither pre-exists prior to its inception (such as in classical music productions), nor is it a posterior reflection on pre-existing material (such as in music theory). Musical research consists of joint projects that culminate in the creation of new art works, as well as the development of polyvalent tools and concepts that make the communication and inspiration between the two worlds possible. The gathering narrative in a musical research project is the *process of innovation* in respective fields that goes beyond conventional collaborative schemes. Musical research in this sense becomes a favorite basis for balance between hard and human sciences. The starting article in this issue by Andrew Gerzso discusses such aspects of *Musical Research at Ircam*.

The present issue constitutes a witness to several musical research projects between 2008 and 2011, as collaborative works between various composers and scientific researchers. Each article is authored by the composer who acted as the initiator of the project. The pool of composers present in this issue constitutes long-time collaborators with the institution, as well as young composers, through Ircam's compositional courses, and composers from the yearly, open-call Musical Research Residency program. This issue thus does not represent any view of music at Ircam, but exposes the institute as the necessary infrastructure in realizing such works. The diversity of topics, approaches and outputs, is evidence of the emergence of innovation between the arts and sciences which is at the very foundation of Ircam.

Benjamin Hackbarth's article is the result of a one-year musical research residency at Ircam, providing compositional insights into concatenative synthesis techniques commonly used in mash-up cultures and in collaboration with several researchers. Andrea Agostini and Daniele Ghisi expose their aesthetic and technical solutions to the division between compositional and performative aspects of computer music, by exploring the capabilities of algorithmic composition and computer-assisted composition in live instrumental interaction. Florence Baschet's review of her piece *StreicherKreis* for augmented string quartet and live electronics (2008) gives an account of early explorations of gesture technologies for instrumental and electronic interactions that led to the creation of various gestures dedicated technologies at Ircam, used by composers and artists from various disciplines. Andrea Cera discusses his compositional approach

in creating an interactive installation that brings in various disciplines such as popular music, audio gaming and sound design. Yan Maresz exposes the roots of the Computer-Assisted Orchestration, as one of the main instigators of the project, which has found itself in the hands of various composers and which has led to several world premiers. Finally, the composer Philippe Manoury discusses compositional procedures in *Tensio* for String Quartet and live electronics (2010), which has led to significant contributions in physical modelling of sound and musical synchrony in instrumental electronic music.

Despite the heterogeneous artistic background and focus, the common factor between each article is the landmark nature both in scientific discovery and artistic creativity of each work, not only for their authors, but also for the greater contemporary music and computer music communities.

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