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Interview with George Legrady, chair of the media arts & technology program at the University of California, Santa Barbara

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Abstract

This interview with George Legrady, artist, researcher, and chair of the Media Arts and Technology program (MAT) at the University of California, Santa Barbara, examines his approaches and methods from his starting point in documentation photography in the 70s towards digital and algorithmic works from the 80s onwards. In addition, it highlights the MAT program and the conclusions George Legrady draws so far, and what possible directions he sees for the future.

The hybridization of art-science has recently led to new university departments that place inter- and transdisciplinary research and education right at the centre of their programs. A successful example is the Media Arts and Technology graduate program, which was established in 1999 with the collaboration of four UCSB departments: Art, Computer Science, Electrical and Computer Engineering, and Music. We are grateful to have been given the opportunity to interview Professor George Legrady, Chair of the program, and an artist and researcher who consciously works in these different domains and studies interactions between them.

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Q: George, the title of your homepage (http://georgelegrady.com) is "[Interactive | Algorithmic] Visualization Research." It's a little surprising that, at first sight, the word "Art" is missing. Where would you position art and your artistic practice with these terms? And similarly, what role does "Science" play in your work?

A: I have two lives – one as a media artist with a forty plus years of making art, the other as a professor in an engineering-situated multimedia graduate program (MAT). The intent of the website is to reach out to two communities Art and Art-Engineering academia. My artistic work is very much present, for instance the "Projects"sub-menu features most of my artworks going back to 1973. MAT belongs to two colleges: Engineering, and Humanities and Fine Arts. Science is a broad area that some of my colleagues have been reaching out, we have been engaged in conversations with biology physics, and genomics to see how we can interface. Our artistic approach is rather investigative, and research based, where we will take a problem, and see what kinds of insights and new perspectives we may arrive at. The crucial contribution that an artist may provide in an engineering, or scientific research situation is to ask questions, and have perspectives that an engineer or scientifica may not come to. In essence we are products of our individual disciplines and whereas research is very specialized, the artist tends to have a generalist perspective that allows for raising "out of the box" questions.

Q: Your work in the 70s used the photographic image as a starting point. Early on you started combining journalistic explorations (e.g., "*James Bay Cree Documentary*") and formal investigations (such as semiotics of objects or systems of classification in "*Catalogue of Found Objects*"). Were you consciously evaluating different methods to combine, or were the chosen forms merely appropriate 'tools' that, when combined, resulted in hybrid works?

A: I began as a documentary photographer and very quickly realized that the images I created were part of a cultural language and constrained by convention. This led to questions about the nature of the photograph: How is it constructed, why is the photograph so convincing as true and neutral even though we tend to know that it is not.

This led to studies in semiotics which at that time in the 1970s was very much part of the extensive activities of French analysis of Cinematic representation. Artist/theorists such as photography-based conceptual artist Victor Burgin, brought the conversation to the photograph. I then integrated this

critical approach to how the medium impacts on the content that it processes to my works in computational-based visualization.

Q: While we may easily recognize the hybrid nature of your works, the processes you used during their realization are less obvious. How did you choose your methods? Were they defined early on, or developed during emergence of a work? Is your current methodology different compared to earlier works?

A: At first this was a struggle as I did not have any methodological training to guide me. It was a fast-paced learning experience, partially as photography was undergoing a self-reflected analytical approach. Over time, through the process of creating and thinking of what may be conceptual underpinnings to a particular work, a tool-set of methodological approaches evolved. There is a detailed online interview with Iker Gil who edits Mas Context (http://www.mascontext.com/tag/george-legrady/) where I believe I mention that each project creates solutions and simultaneously creates questions which then lead to the next project. Over time, I can see this conversation between the projects, conversations with the state of the field, and with works produced by others.

Q: In mid-80s you moved increasingly towards the digital and started investigating algorithmic processes and data visualization. What triggered this shift? What new possibilities did information technology offer to you that photography did not?

A: In 1981 I met the painter Harold Cohen who was writing a computer program that would paint like him. He was interested in the study of his own behavior as an abstract painter. This approach touched on artificial intelligence. I learned programming in his lab, and was wondering how to integrate such an approach into photography. My work was conceptual in direction and it was clearly apparent that computer programming with its rule-based description had strong affinities with conceptual art. In 1986 the first affordable video digital capture system came on the market called the AT&T Truevision Targa system, and this led to my work in computational based photography and data visualization which has been the focus of my attention ever since. I have followed in Harold's footsteps recently with the "Swarm Vision" installation where I collaborate with my PhD students Danny Bazo and Marco Pinter to train the computer through algorithms of how to look around a space

the way I would as a photographer.

Q: Today, the digital photographic image may be seen as a hybrid of analog photography and digital algorithmic processing. In "Swarm Vision" you combine photography and visualization, and push the algorithmic further by replacing the photographer by autonomous cameras. What are the present possibilities of merging the "sensed" and the "generated"? Where are the limitations? Where do you see future directions?

A: Getting a computer to fully learn how to look around like a human photographer and make formal and aesthetic decisions as to what to visually record is still in its infancy but we do have a solid history of industrial-based machine vision that generates a lot of research for automation. An artistic approach to the topic is considered highly esoteric, as the funding resources want a solid answer to "what is it for." Syntactic recognition can be explored through Computer Vision processes such as object segmentation, feature extraction, face recognition, texture analysis (what it looks like) but their integration with semantic recognition and analysis is much more difficult (We can automate what to look for, but cannot at this time qualitatively evaluate what it means, or what may be a good visual composition).

Q: You are the chair of the Media Arts and Technology graduate program (MAT) at UC Santa Barbara. Both the faculty and students come from different backgrounds, such as art, engineering, music and computer science. What is the general approach you take to create a curriculum that nurtures a "melting pot" from so many fields?

A: Most incoming students do have computational backgrounds, and to a lesser degree aesthetic backgrounds, but they are all hybrids of sorts between computation, visual, spatial, sound technology and composition. The goal of the program is to ensure that further hybridization occurs. Through joint projects, attending courses together, working with faculty on research projects, and multi-disciplinary Masters and PhD committees ensures that the process takes place. Our expectation of a student thesis is that it advances the arts-engineering transdisciplinary direction.

Q: One of the courses you teach is "Arts and Engineering Research." In the today's Art-Science dialogue, engineering is often ignored. In your eyes, what is the role of engineering and how can engineers contribute to either

Art or Science?

A: Science and Art may have common approaches that one can pursue an open question. Engineering is much more functional-based. It is about problem-solving, but that is not the save that creativity and exploration are not present. Our program is engineering based rather then science based. UC Santa Barbara has a strong research approach to engineering, as opposed to applied. In MAT we prototype and create projects, and there is software and hardware development work, but in the end, the expectation of research guides the production process. The course you mention is one where we visit science labs on campus. In these visits the intent is to ask the scientists how they arrive at discovery. I quote from the website:

> How do scientists get from analysis of data to discovery? What is the methodology and what is the process by which that happens? Do artists proceed in a similar or different way? 2) What are the methods of representation? To what degree does aesthetics play a role in the process of scientific discovery and representation?
> To map out the process by which data collection leads to discovery
> To study the role of tools, technologies as means to discovery
> To what degree is the representation a neutral process?

The impetus to visit the labs comes from curiosity as science labs tend to be closed off from the world. I am also in the process of co-organizing a symposium that addresses the question of by what methodologies do researchers, artists and scientists carry on their explorations. The event has an interesting format: Each panel is led by an arts affiliated person, and is made up of a broad range of experts that under normal conditions would not be interacting on their own, highly. The link to the schedule is: interrogating-methodologies.org

Q: This year, MAT turns 15. What are your conclusions so far? What's next and what would you like to see after the next 15 years?

A: Our goal to create a computationally based interdisciplinary program that reaches out to experimentation, prototyping, and artistic project development has proceeded successfully. We are proud of this. The composers, artists, architect, computer scientists have managed to carry on the conversation, which is a major challenge as in the US everyone is trained to be a specialist, whereas my sense is that in Europe there is a desire to extend one's

knowledge base beyond one's own field. For instance, I remember talking with a French industrial controls engineer, whose conversation was primarily about 5th century BC Greek culture. I cannot say what it will be like in 15 years, but we have already begun to reach out in conversation with science research such as Physics, Bio-Informatics, etc. In engineering, we are at this time engaged in projects that have machine learning, robotics, telecommunications, sensor technologies, etc. Down the road, we may then reach into the Humanities to bring in the philosophical analysis of how hybrid disciplines are evolving.

Q: We are looking forward seeing how MAT evolves in the coming years. Thank you for your time, George.

Biography

George Legrady (Budapest, 1950). Canadian and American citizen. MFA San Francisco Art Institute (1976). Currently Chair of Media Arts & Technology graduate program, and director of the Experimental Visualization Lab at UC Santa Barbara. He has a background in fine arts photography and digital interactive installation. His current work is in data visualization, robotic computational integrated photography, and digital visual ethnography funded by National Science Foundation. His artistic works have been exhibited internationally.