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Guy Ben-Ary and Kirsten Hudson, in-potentia, installation view, SOFT CONTROL: Art, Science and the Technological Unconscious, Kibla, Maribor, Slovenia, November 2012. Photo: "Where Dogs Run"

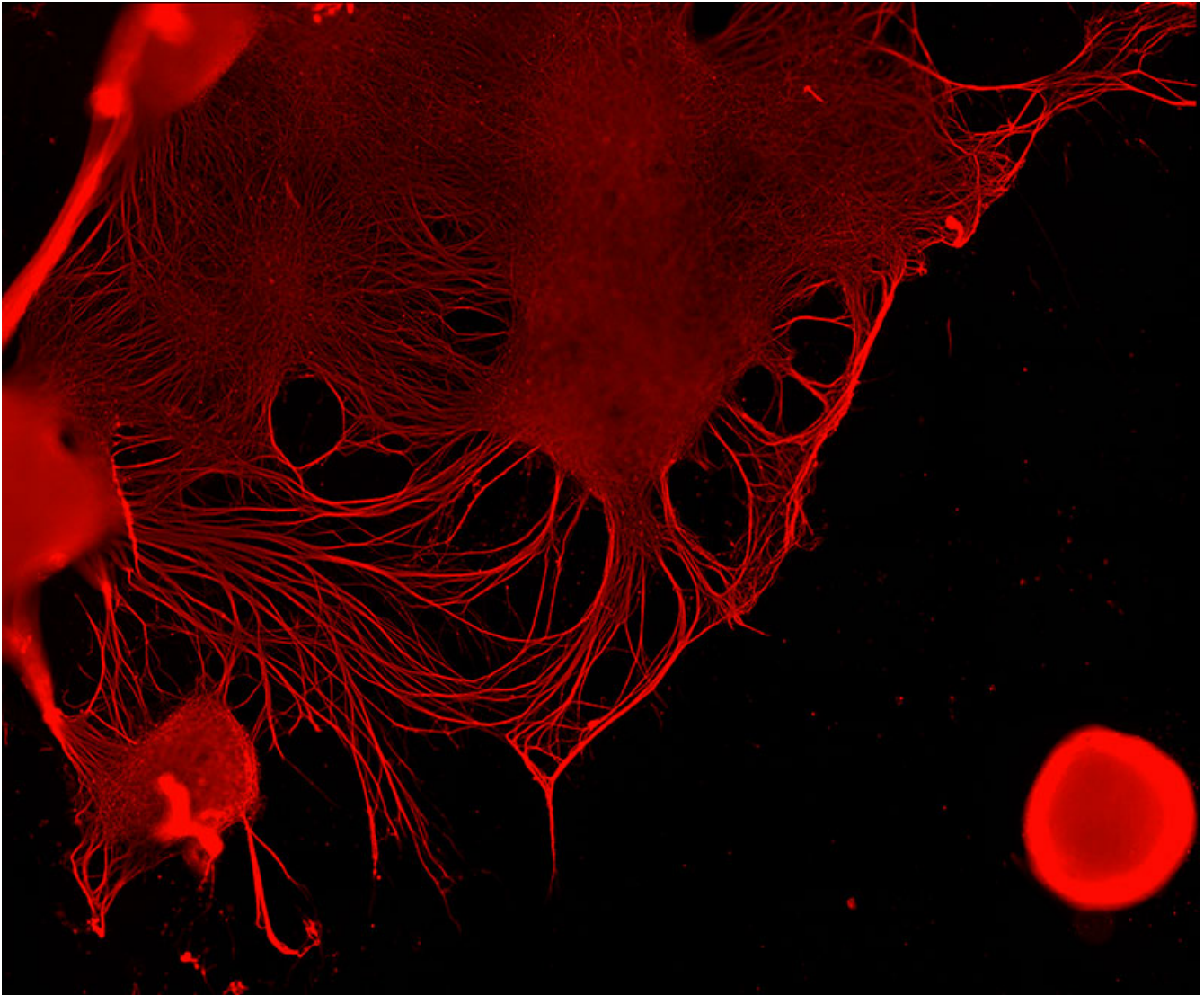
Guy Ben-Ary: Brain-body compatability for the 21st century

*Kirsten Hudson interviews interdisciplinary bio-artist and
researcher Guy Ben-Ary*

KIRSTEN HUDSON | FEATURE



Silent Barrage by Neurotica, Installation view at Translife: International Triennial of New Media Art, National Art Museum of China, Beijing, 2011. Photo: Phil Gamblen.



Guy Ben-Ary, *cellF*, Neural Network Prototypes, differentiation of neuro-spheres (neural stem cells) to neuron and glia cells at day 14. Courtesy the artist

Internationally renowned for collaborative projects such as *MEART*, *Silent Barrage*, and *in potentia*, Guy Ben-Ary has been a core researcher at Symbiotica – the Centre of Excellence for Biological Arts at the University of Western Australia since 2001. In 2012, he proposed a truly 21st-century self-portrait, aptly named *cellF*, which involves bio-engineering Guy's own cells into a "brain" that is then interfaced with an interactive sound-producing "body". Kirsten Hudson sits down with Guy to discuss how *cellF* is critically engaged in thinking about life, materiality and ultimately, what it means to be human.

KH There is much discussion at the moment on new materialism, an emerging trend in 21st-century thought, which grapples with the crucial issues of materiality, embodiment and subjectivity, and involves an orientation of the creation of the new into an unknown future, a movement of becoming-more, becoming-other. To take a

new materialist approach seems to indicate a critical engagement or concern with embodied modes of agency that exceed the intentions of human subjects: where matter is considered “lively” and capable of posing questions on its own terms. How do you see your creation of “brains” housed in robotic forms as raising fundamental questions about the place of embodied humans in a lively material world?

GB-A I want to start by stating that I don’t grow real brains in vitro, rather two-dimensional neural networks that consist of around 50,000 neurons. Brains consist of an average number of 100 billion neurons interconnected via trillions of synapses. The living neural networks that I create are purely symbolic gestures, intended to force viewers to think about the future possibilities that neuro-engineering and stem-cell technologies present. But regardless of how simple these brains are, they do produce large amounts of data and respond to stimulations. For me matchmaking these “brains” with the most appropriate robotic forms or bodies originated from the urge to highlight the liveliness of these almost invisible neural networks and to manifest their erratic existence through movement and behaviour.

cellF started with what could be seen as a new materialist question underpinned by the belief that artistic practice can act as a vector for thought: What is the potential for artworks using biological and robotic technologies to evoke or elicit responses in regards to shifting perceptions surrounding understandings of life and the materiality of the human body? It was also inspired by an ultimately narcissistic desire to re-embodiment myself. Although over the last fifteen years I have been engaged in the process of developing robotic bodies whose aesthetics and function are informed by the specificity of each bio-engineered brain, I have also been playing around with the idea of exploring new and novel robotic self-embodiment strategies. But when thinking about what kind of body to design for myself, the idea of working within a humanist paradigm made me almost die of boredom. In *cellF*, I am using Induced Pluripotent Stem Cell technology (iPS) – a method of coaxing cells back into their embryonic state – to reprogram my own skin cells and transform them into a functional neural network.

I find the alchemic transformational potential of iPS inspiring, and combined with my naive childhood dream of being a rock and roll star, I decided to create a sound-producing robotic body that houses a mini bio-lab that hosts my external brain. Although still in development, the intention for *cellF* is that human-made music will be fed to the neurons as stimulations, and the neurons will respond by controlling an array of analogue synthesisers to create live, reflexive, improvised sound pieces (or jam sessions) that are not entirely human. The aesthetics and function of analogue synthesisers fits this vision perfectly as aesthetically

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complex data sets, and by their very nature, the analogue synthesisers are well suited to reflecting the complexity and quantity of information via sound.

KH It seems to me that *cellF* (as well as your other living brain artworks) opens up the wonders of alternative embodiment proposed by Jussi Parikka, which has more to do with modes of sensation, perception, memory and embodiment that are not focused on the priority of beings with two legs, two eyes and two ears, but instead emerges out of paying attention to developing a sensitivity to the ways in which surfaces, sounds and visuals provide affordances for our sensations. How do you see your creation of alternative forms of embodiment as challenging the idealisation of the human?

GB-A Essentially, the brains I have been involved in growing and matching to robotic bodies over the last fifteen years, have all emerged out of a desire to scramble habitual categories of thought – active versus passive, inert versus animate, political versus ontological, causality versus spontaneity, human versus non-human, forcing the viewer of those artworks to think materially as well as ethically about our anthropocentric take on the world. Positioned at the intersection of art, science and society, I have spent years messing around with biological and cybernetic technologies to examine processes involved in the transformation of bodies or living biological material in order to re-evaluate our understanding of life, the human body, and most importantly, how we interact, develop and maintain meaningful connections in a world where we are constantly barraged by information and idealisations. In the catalogue text for *Silent Barrage*, Oron Catts, co-founder and Director of SymbioticA, asks: Can the pairing of cells and audience help make ‘meaningful’ connections that will quieten the barrage?” This question of Catts is vital to my work as it points to my desire to match the most compatible robotic body to a bio-engineered brain in order to create the potential for new forms of interaction, or what could be called a kind of mediatic co-constitutional site of engagement. I see these living/robotic entities as sites of post-humanist performance that call into question the givenness of the differential categories of human and non-human, subject and object, knower and known.

KH Your use of the phrase “messing around” reminds me of Erkki Huhtamo’s term, “thinkerer” – a combination of thinking and tinkering – which describes a trans-disciplinarian with a curiosity for technological knowledge, underpinned by a tinkering spirit which approaches the exchange of ideas, influences and directions in order to investigate the conditions of the visible, the material and more broadly,

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GB-A Throughout my artistic career I have embraced an interdisciplinary position that involves in-depth collaboration and research with a variety of people in various disciplines. By engaging in an art-based methodology that distils disciplinary knowledge and practices, and allowing them to interact in synergy, I strategically create absurd scenarios in order to problematise the very technologies, materials and practices I am using. Forcing viewers to look forward at possible future implications of technologies, as well as to look backwards in terms of how technologies have informed our belief in the givenness of categories, I create artworks that (I hope) critically question the practices through which distinctions and categories are materially and discursively produced. Philosophically, I feel a sense of discomfort in working with dissociated neurons, or bits of brains as I am constantly confronted by ethical questions regarding past, present and future understandings of consciousness, intelligence and sentiency. By “messaging around” or what you describe as “thinkering” with neuroscience, cybernetics and art in order to match-make neural networks to compatible robotic bodies, I seek to open up the possibility to question how modern Western culture’s institutionalisation and fetishisation of consciousness has significantly contributed to historically distinctive forms of being human.



Silent Barrage by Neurotica, installation view at Translife: International Triennial of New Media Art, National Art Museum of China, Beijing, 2011. Photo: Phil Gamblen

Kirsten Hudson is a trans-disciplinary artist-philosopher whose research and practice explores the philosophies and histories of the body, informed by queer theory, psychoanalysis, phenomenology and post-humanism. She currently lectures in the School of Media Culture and Creative Arts at Curtin University, Western Australia.

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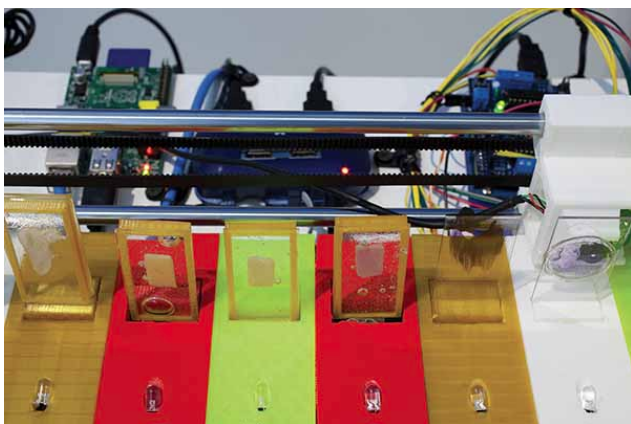


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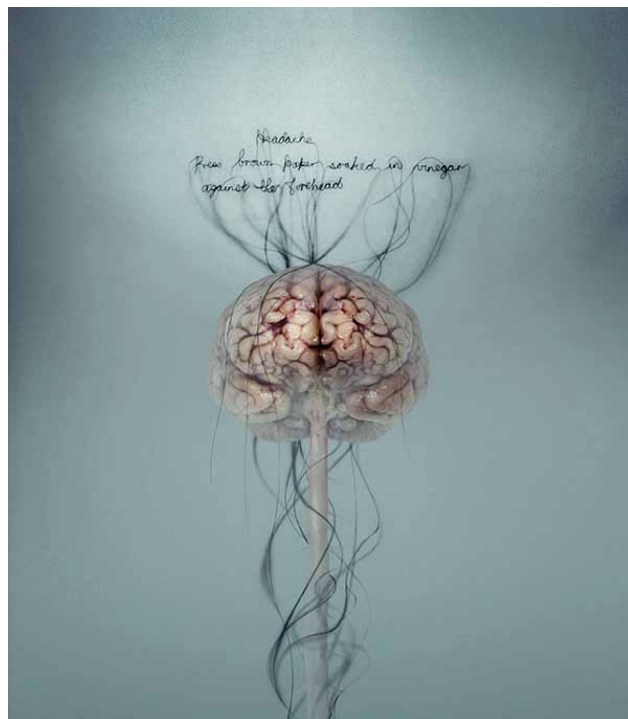
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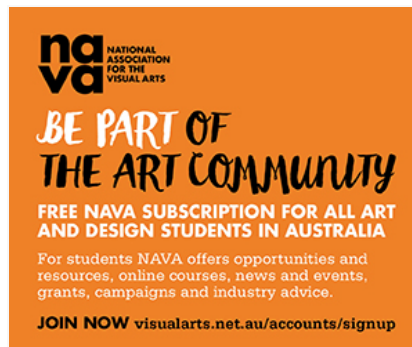
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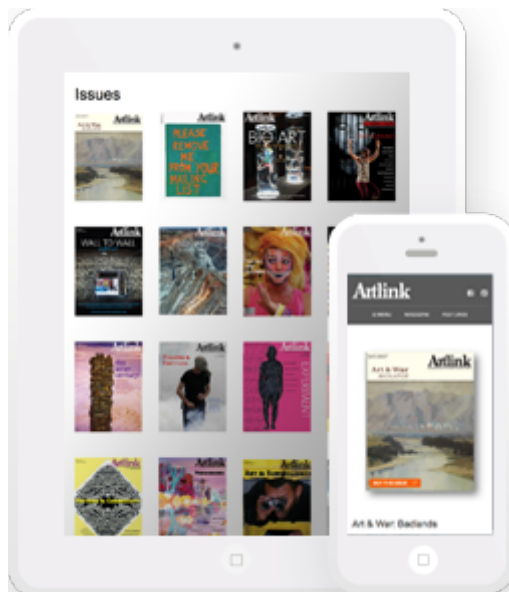
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