

CAN ART PREVENT MALARIA?

When art meets science, opportunities arise to impart thought-provoking messages and communicate concepts about challenges that exist in society. Bio-art offers new ways to bridge the gap between scientific research and society's understanding of it.

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The arts hold a mirror up to society, reflecting the harsh truths of humanity's impact on nature. While artists' contemplation of the relationship between humans and their environment stretches back to the beginning of time, bio-art is a growing creative art practice that uses bacteria, living organisms, life processes and live tissues as its medium.

Through my master's research at the University of Pretoria's (UP) School of the Arts, I produced a body of bio-artworks to evoke an affective response to research being done in the field of malaria. Malaria remains a major public health concern despite being both preventable and treatable.

My research project was a transdisciplinary collaboration between researchers from the School of the Arts and the UP Institute for Sustainable Malaria Control (UP ISMC). The research and artworks aimed to show the importance of the environment's ecological sustainability and well-being, a core part of the UP ISMC's vision, by artistically looking at the

impact of certain malaria-prevention strategies on nature and humans.

Visual entry point

I first started using bio-art in 2018 to impart thought-provoking messages and raise awareness about malaria, with a specific focus on the impact of dichlorodiphenyltrichloroethane (DDT). I was interested in viscerally exposing the relationship between malaria and the use of the controversial DDT insecticide and its toxic, long-term trans-generational consequences for both humans and animal species. Practically, this artistic theme was envisioned as a video-art installation titled *Biocide*, which amplified the effects of DDT on four living specimens: a bee, a small bird, abstracted plant life and food crops, exposing the often-unseen effects of biotechnology on life.

For decades, DDT was – and still is, in about 10 countries – used as an insecticide in indoor residual spraying. Despite its effectiveness in controlling mosquito vectors, DDT is considered an endocrine-disrupting chemical: there is evidence that DDT

alters and disrupts hormones that are important to reproductive health, and immunological and neurological development and functions. Researchers at the UP ISMC have been looking into the health impacts of insecticides such as DDT for almost two decades. They have been advocating the need to find safer, more sustainable means to control malaria while using DDT in a more conscious way towards elimination of the disease.

Getting Nature's feedback

More recently, I expanded my investigations into the relationship between humans, the mosquito and malaria by adding more themes to my bio-artworks. The body of work ranged from representing photo-realistic to manipulated realities, and included media installations of living biological matter emanating from scientific research and exploration.

In 2021, I curated these artworks in an exhibition titled *After Nature*, constructed around four major themes: harmful control (*Biocide*, 2018), climate change (*Dangerous Game*, 2021), the mosquito (*Khosi khadzi*

wa lufu, 2021 and *Lufu kha a kovhela*, 2021) and bio-acoustic soundscapes (*Anopheles*, 2021). They evoke specific concerns and create provocative, informative messages about malaria, humanity and the environment, while allowing the audience to explore their own ethical position towards these issues.

After Nature explores the symbiosis between humans and nature, meaning that what we put into nature, nature will feed back to us. The exhibition looked at this cycle with a special focus on malaria.

How is this research transdisciplinary?

This research shows how transdisciplinary relationships between the arts and sciences allow for the exploration and growth of bio-art. The humanities and sciences need to work together to bridge the gap that exists between scientific and environmental research and society's understanding of it. The artworks should be seen as more than a tool to communicate the scientific processes involved. The malaria awareness messages communicated through this art are another tool that can be used towards malaria elimination, while drawing attention to the need for safer malaria control methods to ensure human and environmental well-being and sustainability.



Good health and well-being

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FAST FACT

Bio-art remains a largely unexplored practice in South Africa. The phrase, coined by the artist Eduardo Kack in 1997 in relation to his own practice, aims to expose controversy or blind spots posed by scientific exploration. Bio-artworks allow audiences to experience important ideas and knowledge unearthed by the sciences in visual and affective terms.

View the collaboration between art and science here.

