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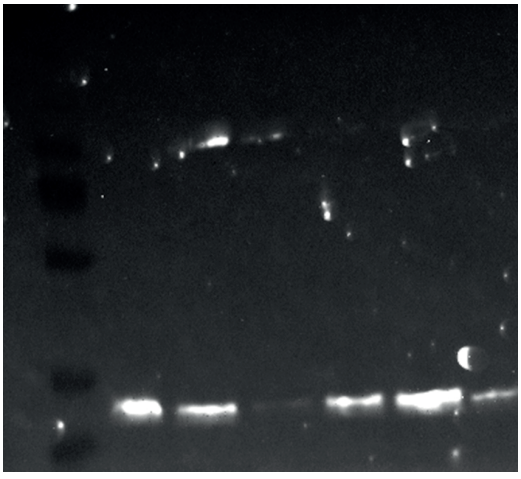
P. JÓŹWIAK

The project "safe suicide" – tombstone photos showing the death of previously immortalized B lymphocytes collected from the body of the author (Karolina Żyniewicz)

The Artistic Value of Laboratory Artifacts



Art and science employ different languages, but they both strive to get to know and understand the world.

Karolina Żyniewicz

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For many years, I have been working at the intersection of art, biology, humanities, and anthropology, simultaneously combining these diverse fields. My multidisciplinary approach involves overcoming various sorts of communication difficulties. Building a new, shared language that makes it possible to think and act in a way that transcends disciplinary divides poses a tough yet fascinating challenge.

The language of art

Art is understood differently in different places, and the language of art, just like any other language, needs to be learned. Unfortunately, educational systems (at least in Poland) often overlook the importance of studying the language of art. Not everyone has the opportunity to experience art exhibitions starting in childhood, or to participate in workshops and museum lessons. Contemporary art, in particular, causes a certain anxiety and therefore can be challenging to understand and interpret. Art is associated with beauty, and beauty is perceived as synonymous with visual appeal. Even individuals with a quality education in non-artistic fields may think of art as something that, to put it colloquially, is "pleasing to the eye" and requires certain manual skills to create.

My purpose in this article is not to cite and analyze all possible definitions of beauty. Suffice it to say that it has no singular definition. I can only share my understanding of the concept and the implications it has for my work at the intersection of the previously mentioned fields.

How do biologists working in a lab react, if they are approached by an artist seeking to collaborate? In most cases, the moment I enter a lab, I am told, "But we don't have anything beautiful here." Such declarations typically mask a sense of concern and confusion.

ADAM BOGDAN

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is an artist and researcher, a liminal being existing and performing "in between" various areas of culture. She graduated from the Department of Visual Arts, Strzeminski Academy of Fine Arts in Łódź and defended her PhD in the field of cultural sciences at the Artes Liberales Faculty, University of Warsaw. While realizing art&research projects, she also runs ethnographic observations that are the basis for her consideration of the role of human and non-human actors in the production of contemporary culture. She currently lives and works in Berlin.

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The result of a test performed using the Western Blot technique, confirming that the present author's genetic material is actually present in the alcohol produced by the yeast strain that was "humanized" using that material

"How should we scientists react? What could we possibly offer her? Perhaps we have some petri dishes with multicolored bacterial colonies or appealing photos taken with a microscope – the kind of visuals an artist should appreciate. She's surely looking for something that is visually interesting and pleasing." However, this particular artist is not solely interested in pretty things. I seek authenticity, something that captivates me enough to decide to tell others about it using the language of art. I seek topics that hold importance for individuals and communities, ones that are worth discussing, even if – or especially if – they may be inconvenient (or "not pretty").

Beauty from the lab

Convinced that they had figured out what I was seeking, many biologists have eagerly presented me with various laboratory artifacts, which could be succinctly defined as "errors in laboratory art." These artifacts often hold great visual appeal. They include bacterial cultures that are additionally overgrown with mold, photos of air bubbles instead of cells (captured by a misaligned microscope), overexposed films from tests performed using the western blotting technique of protein detection and separation. All these mistakes made during experiments could be considered as pretty pictures that can be displayed in a living room. They reveal the beauty inherent in life, scientific thinking, and broadly understood laboratory aesthetics. However, when removed from their broader contexts, they may seem shallow and silent.

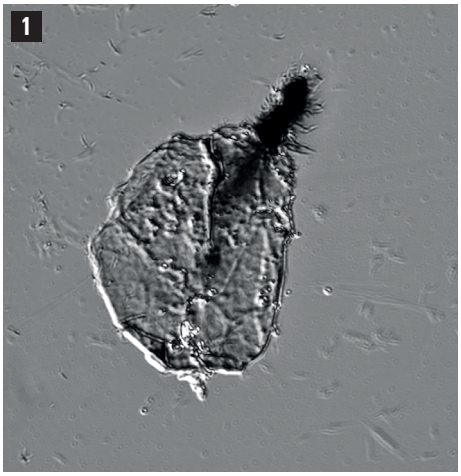
While I collect artifacts in my laboratory work, I don't treat them as separate art objects, instead, I view them as valuable ethnographic field material. I don't use them to make paintings or drawings. When I present these artifacts, I do so in their true form – as laboratory artifacts.

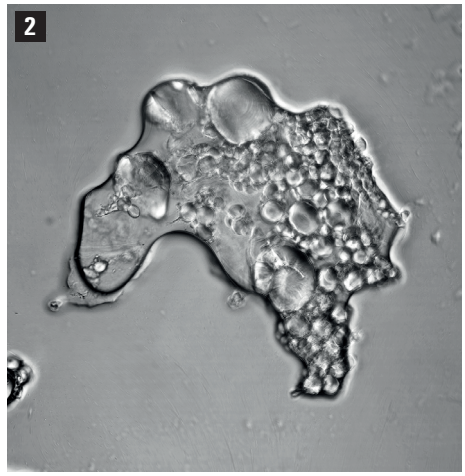
My approach to handling these artifacts mirrors that of biologists, treating each project as a research question to be explored experimentally. Consequently, I cannot accept experimental results that clearly stem from errors in protocol execution or device malfunctions.

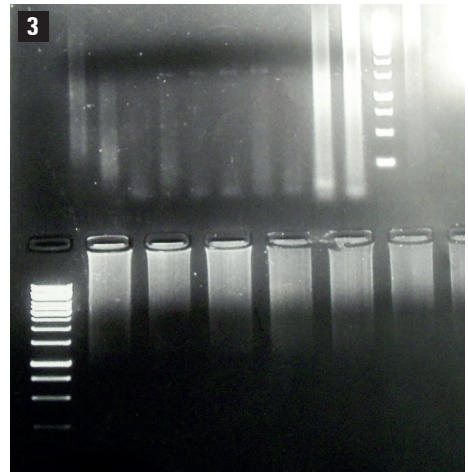
Design experiments

My project called "safe suicide," which involved single cells, focused primarily on microscopic images and recordings of cell survival observations. My main

"The Last Supper" – A performative dinner at the Institute of Genetics and Biotechnology, Faculty of Biology, University of Warsaw







objective was to induce apoptosis by administering various substances – such as sodium hypochlorite and doxorubicin – or by disturbing the homeostasis of the cell culture. Apoptosis, often referred to as "cellular suicide" in the scientific literature, is a specific form of cell death that has proved challenging to initiate with precise experiment parameters. It is much easier to induce necrosis, which is a violent death associated with inflammation in the body. Statistically speaking, I was a lot more likely to induce death through necrosis in my own my own B lymphocytes than to actually obtain an image of their death of by apoptosis. For my project, however, it was crucial that I select only those microscopic images that aligned with the project tenets. The final 10 photographs serve as representations of the project in the form of ceramic photos for tombstones.

Some might view my rigorous approach as pointless, arguing that art-gallery visitors lack the expertise to verify the photos anyway. For them, it is important to find something that "catches the eye." Being an artist, however, I find it important to remain honest, authentic, and consistent in the language I use.

I was guided by a similar principle in my project called "The Last Supper," which involved a laboratory reconstruction of the biblical miracle depicted in Leonardo da Vinci's famous mural painting. Collaborating with Dr. Jakub Piątkowski, I conducted a series of laboratory experiments with yeast, aiming to introduce one of my own genes (*GAP-DH*) to participate in the fermentation process carried out by these organisms. This humanized yeast was then successfully used to produce beer, and also to bake bread. A test performed using the Western Blot technique confirmed the presence of my protein in the alcohol produced using the yeast, but the test result itself is not visually appealing or very clear, in particular to those unfamiliar with laboratory work. Nevertheless, I include it whenever I present this project, as it serves as essential proof of the cognitive journey I took – a journey that held significant importance, possibly even greater than what is visible in the exhibition. As was the case with "safe suicide," some people suggested in the context of "The Last Supper" that I could have simply bought a bottle of beer and concocted a story about genetic modification of yeast, and no one would have been able to verify it. But I could never actually do such a thing. The beauty of these projects lies in experiencing them and sharing that experience at their every stage. The arduous laboratory journey played a crucial role, and the artifacts I collected along the way served as evidence of the numerous attempts and mistakes I confronted. However, I never show them without commentary.

In such types of projects, commentary becomes crucial as it infuses visual elements with content, transforming them into protagonists in a relatable story. Unfortunately, this commentary is not "pleasing to the eye"; it requires time and attention to read. As an artist, I invite you to interact with me and my projects, but I also expect a deeper engagement. Artifacts offer an easier viewing experience, requiring nothing from the audience. They can be seen and forgotten.

Importantly, however, even the results of experiments regarded as correct in a laboratory setting can become silent artifacts in an art gallery without accompanying commentary. Art not only produces knowledge but also demands knowledge. It invites us to embark on an intellectual adventure. Despite the numerous definitions of beauty, no one says that it is easily accessible or always enjoyable.

Endnote: Both projects described in the article were carried out at the Institute of Genetics and Biotechnology and in other labs of the Faculty of Biology, University of Warsaw, in collaboration with Prof. Paweł Golik, Dr. Jakub Piątkowski, Dr. Agata Kodroń, Dr. Magdalena Kaliszewska, and Dr. Bohdan Paterczyk.

Photo 1
Laboratory artifact – photo taken with a confocal microscope (Laboratory of Confocal Microscopy, Faculty of Biology, University of Warsaw). Accidental contamination floating in RPMI cell culture medium

Photo 2
Laboratory artifact – photo taken with a confocal microscope (Laboratory of Confocal Microscopy, Faculty of Biology, University of Warsaw). Cells hidden under a layer of air bubbles

Photo 3
Laboratory artifact – an abnormal result of an electrophoresis test

Further reading:

karolinazyniewicz.eu

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