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The Leonardo Electronic Almanac is proud to announce the publication of its first LEA book, titled "Red Art: New Utopias in Data Capitalism." The publication investigates the relevance of socialist utopianism to the current dispositions of New Media Art, through the contributions of renowned and emerging academic researchers, critical theorists, curators and artists.

RED ART

New Utopias in Data Capitalism

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Editorial Address
Leonardo Electronic Almanac
Sabanci University, Orhanli – Tuzla, 34956
Istanbul, Turkey

Email
info@leoalmanac.org

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LEONARDO ELECTRONIC ALMANAC BOOK, VOLUME 20 ISSUE 1

Red Art: New Utopias in Data Capitalism

BOOK SENIOR EDITORS
LANFRANCO ACETI, SUSANNE JASCHKO, JULIAN STALLABRASS

BOOK EDITOR
BILL BALASKAS

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Figure 1. Entrance of the hacker space Kiberpipa, Kersnikova Street, Ljubljana, Slovenia, 2012. Photograph by Boris Magrini. Used with permission.

Hackteria: An Example of Neomodern Activism

by

Boris Magrini

PhD Candidate
University of Zurich, Faculty of Arts and Social Sciences
Institute of Art History
borismagrini@yahoo.fr

ABSTRACT

As a platform for knowledge sharing and artistic exploration, Hackteria constitutes a network of artists and researchers that merges the use of biotechnologies with hacking and do-it-yourself strategies. Its process-oriented and performative approaches, which oppose the materialistic imperatives of the art market, follow the tradition of political art. In this paper, I argue that Hackteria embodies what could be considered as a neomodern activism, other recent examples of which are emerging within the new media art field. Instead of rejecting controversial new technologies, they propose a vision of a society that is propelled by a more democratic use and discussion of these technologies. The activities of Hackteria are examined through the presentation of a bio-lab created in Ljubljana.

A BIO-LAB IN LJUBLJANA

At the end of the stairs leading down to the underground Slovenian hacker space Kiberpipa, in Kersnikova Street in Ljubljana, there is a light box displaying the words: "All our code are belong to you [*sic*]." The slogan is a reference to the well-known phrase from the badly translated Japanese videogame Zero Wing, that quickly became a favourite sentence among the global Internet and hacker fraternity. The light box at Kiberpipa states exactly the opposite of the famous meme. However, it conserves the syntactic errors that generated its appeal, and affirms that, instead of taking possession of a remote machine, they are sharing their software and knowledge. The idea of hacking is commonly associated with the image provided by Hollywood movies and the activities of Anonymous and their denial-of-service attacks (DoS) in the name of a free Internet. For this reason, hacker spaces like Kiberpipa make it clear that they consider hacking as a service to society, and distance themselves from the stereotyped image of the hacker as a cracker or pirate and align with the tradition and ethic described, for example, by Steven Levy in his survey on the history and philosophy of hacking. [1]

Invited to set up a temporary hacker space for biotechnologies, namely a bio-lab, and to coordinate a series of workshops at Kiberpipa, Marc Dusseiller added his touch to the light box slogan by writing the word 'gene' before the word 'code.' Based on the collaboration between Hackteria | Open Source Biological Art, the Kapelica Gallery and Kiberpipa, in November and December 2012, the BioTehna lab offered visitors and participants the opportunity to experiment with biohacking while also providing an example of laboratory created on a low budget and using some do-it-yourself solutions. Between the numerous tools, cables, electronic devices and PET bottles containing algae, the book *Unscientific America* written by Chris C. Mooney and Sheril Kirshenbaum lay on a shelf in the lab. [2] At the time of its publication, the book warned about the high level of illiteracy in relation to scientific education in the United States, an illiteracy that ultimately harms the population while benefiting the private corporations engaged in scientific research, which derive advantages from the general lack of interest in and understanding of their activities. The authors consider the government and the media responsible for this situation to a certain degree. The presence of such a book in the lab clearly suggests that Hackteria considers workshops and knowledge-sharing as part of a broader political agenda.

The activities performed by Hackteria, of which the BioTehna lab is an illustration, are exemplary of a recent form of activism in the joint artistic and scientific environment. Instead of producing artworks

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Figure 2. Workshop BioHacking Vs. BioPunk at the I'MM_Media lab, Zagreb, Croatia, December 2012. Photograph by Deborah Hustic. Used with permission.

as commodities to be commercialized or consumed, Hackteria creates workshops for sharing knowledge and bridging art and science in an alternative and participatory way. While the creation of projects relating to art and science appears to be a current trend, especially in the artistic field, the activities of Hackteria differ from the many art and science exhibitions, conferences and events that often involve larger production costs and the participation of many celebrities. Rather than an artist group or a collective, Hackteria is a community platform that connects artists and researchers from several different fields and countries – although, for practical reasons, it is also officially constituted as an association. The activities are inevitably coordinated through the website, which states its mission as follows:

> *As a community platform Hackteria tries to encourage the collaboration of scientists, hackers and artists to combine their expertise, write critical and theoretical reflections, share simple instructions to work with life science technologies and cooperate on the organization of workshops, festivals and meetings.* [3]

The diversity of the members involved makes it difficult for them to effectively position themselves in one particular field, be it as researchers, hackers or artists. In this sense, Hackteria challenges the concept of identity and the implicit code of conduct determined by each specific field. Nevertheless, the role of Hackteria is pertinent in the existing artistic context and significant in the context of the new media art field. Hackteria provides examples of activities that push the boundaries of artistic practice in the tradition of performative and process-oriented art; moreover, it also illustrates a form of activism, or 'hacktivism,' that differs from the tactical media positions of the late 1990s which strongly characterized and contributed to the definition of the new media art scene.

THE ROOTS OF HACKTERIA: FROM PERFORMATIVE ART TO TACTICAL MEDIA

The events organized by Hackteria are rooted in a long tradition of media art as well as process-oriented and performative approaches. Performative art is not equivalent to process-oriented art; as Andreas Broeckmann correctly pointed out, "it only makes sense to speak of process-orientation in cases where the evolving process itself is a main factor of the aesthetic experience of the work." [4] Nonetheless, neither performative nor process-oriented art focus on the creation of a finite product – a distinctive trait of the activities run by Hackteria. Furthermore, the BioTehna project, for example, combines performative, interactive and process-oriented qualities as it is not the lab, as such, that is meaningful to the artistic intent of the group, but the process involved in building and running it.

From the flourishing years of performative art in the 1950s and '60s to the most socially engaged actions of the '70s, as exemplified by Joseph Beuys's work, performative art became established over the decades as an important artistic practice of the 20th century. New technologies such as video recorders and computers were already incorporated into the performative practices of the early years, most notably by Fluxus. It is interesting to note, however, that performative art was often driven by a strong rebellious impulse directed at the art market, the authorities and private corporations. The use of new technologies was often subordinated to the provocative or dissenting character of the performances and happenings. Among the factors that made performative practices the ideal tool for engaging in political discourse was the fact that the performing artists did not aim to produce commercial goods but to engage, quite often, in close interaction with the audience. Lucy R. Lippard, for whom "activist art is, above all, process-oriented," analyzed the close relationship between political art and performative or collaborative practices. [5] Among the most radical protagonists of performative art with a strong political agenda, Alexander Brenner and Barbara Schurer were

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not being rhetorical when they called for the rejection, subversion and destruction of the works of commercially successful artists and the leading art institutions, both of which were viewed as symbols of the hegemony of a capitalist, globalized culture. In their eyes, "the demolishing of serious culture should be taken literally." [6] If performative, process-oriented art were the appropriate political step for opposing the creation of commercial value, the destruction of physical works and institutions would be its logical final act.

During the 1990s, new media art became the popular expression for the identification of the field that emerged from the long tradition of artistic experiments with new technologies. New media art was certainly shaped in the 1990s by the development of the Internet on a global scale, however it was also one of the possible evolutions of the application of media tools to the documentation of the ephemeral actions of the performative and process-oriented art of the previous decades. [7] Together with the process-oriented approach, new media art inherited the militant peculiarity of performative works. More specifically, as asserted by Tilman Baumgärtel, net-art – probably the most significant emerging new media art practice of the 1990s – presented similarities with the hacker ethics and approach. [8] It is not surprising that terms like 'tactical media' and 'hacktivism' were used to describe the cluster of works that would characterize new media art in the late 1990s. The leading art critics and curators engaged in new media art – such as Christiane Paul, Inke Arns, Geert Lovink, and Joline Blais and Jon Ippolito, who helped to develop a vocabulary and a theoretical frame – stressed the fact that new media art was more about addressing questions relating to technology and society rather than creating works with fascinating new tools. Hence, for a new generation of artists engaging with technologies, particularly computers and the Internet, it was clear that to use them in an artistic context would mean adopting a subversive strategy and working against them. In this context, the use of simple tools, do-it-yourself strategies and low budget productions were favoured by media artists, coupled with the drive to oppose the leading companies that governed the information technologies on a global scale and, more generally, capitalistic ideology. To infiltrate the Internet search engines (*Digital Hijack* by etoy), to hack commercial products (*The Barbie Liberation Organization* by RTMark), to challenge and alter the codes of software applications such as browsers and videogames (*Wrong Browser*, *Untitled-Game* by Jodi): these were the strategies that brought media artists to the international attention at the turn of the millennium.

It seems only natural that when biotechnologies became accessible to artists, similar strategies began to flourish. The Critical Art Ensemble, for example, approached biotechnologies by developing critical works and instruments for educating the public. Oron Catts and Yona Zurr from The Tissue Culture and Art Projects clearly affirmed their intention to reveal the hidden faces and real costs of tissue culture. [9] In his process-oriented work *Suspect Inversion Center*, Paul Vanouse recently recreated the Orenthal James Simpson gene-code from his own to demonstrate how easily DNA could be manipulated and suggest that it should not, therefore, be considered too hastily as objective proof, particularly in legal actions. Meanwhile, curators such as Jens Hauser strongly oriented their curatorial practice towards bio-art while critical theorists like Eugene Thacker and Alessandro Delfanti analyzed the political challenges of biotechnologies and the development of related hacking activities, thereby providing a theoretical vocabulary for the artists.

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BIO-HACKING ON A LOCAL SCALE THROUGH A GLOBAL NETWORK

Hackteria certainly grew out of the new media art tradition coupled with the recent interest in biotechnologies while, at the same time, inheriting the tradition's do-it-yourself approach, critical attitude and hacking strategies. During the press conference for the opening of BioTehna, Marc Dusseiller explained that, having obtained his Doctor of Sciences degree at the Federal Institute of Technology Zurich in 2005, it took him several years to find out what he wanted to do. [10] Having developed artistic projects alongside his academic career, he eventually decided to dedicate his time and energy to art without necessarily abandoning the knowledge and experience he had gained as a researcher, but bringing it to bear instead in a more creative context. However, he was quickly dissatisfied with the artistic production and 'buzz' surrounding the flourishing art and science milieu; the emerging bio-art movement, above all, appeared to him as being overly compromised with the logic of commercial production which regulated the more traditional contemporary art scene. [11] Having co-founded the Swiss Mechatronic Art Society (SGMK) with Markus Haselbach in 2006 and created a hacker space in Zurich, together with artists Andy Gracie and Yashas Shetty,

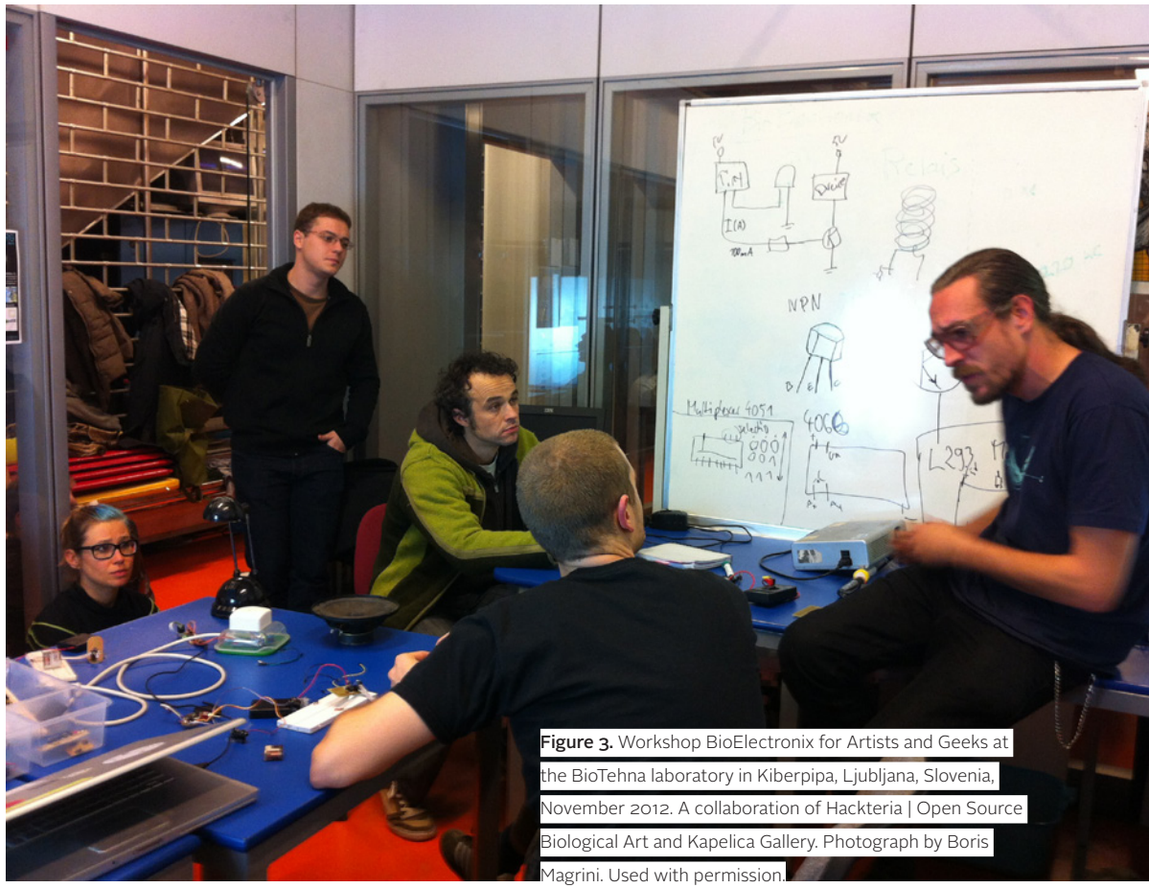

Figure 3. Workshop BioElectronix for Artists and Geeks at the BioTehna laboratory in Kiberpipa, Ljubljana, Slovenia, November 2012. A collaboration of Hackteria | Open Source Biological Art and Kapelica Gallery. Photograph by Boris Magrini. Used with permission.

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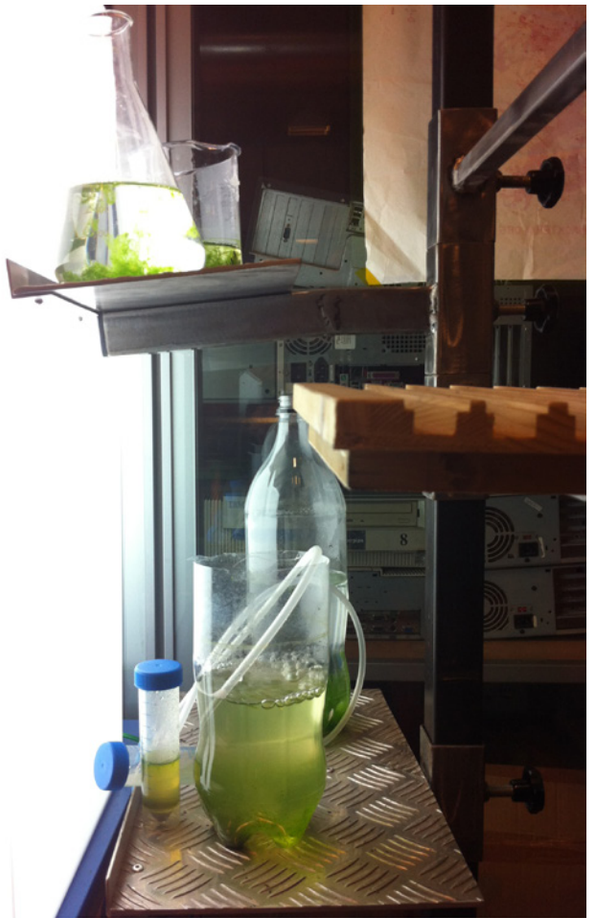

Figure 4. Detail of the BioTehna laboratory in Kiberpipa, Ljubljana, Slovenia, November and December 2012. Photograph by Boris Magrini. Used with permission.

he started Hackteria in 2009 during the *Interactivos?* workshop at Medialab-Prado in Madrid. The goal was to "develop a rich web resource for people interested in or developing projects that involve DIY bioart, open source software and electronic experimentation." [12] Today, Hackteria has become a global network of people sharing similar ideas and goals around the application of hacking principles to biotechnologies; current members and collaborators include Nur Akbar Arofatullah (artist and student in microbiology and agriculture), Timbil Budiarto (civil engineer), Špela Petrič (microbiologist and media artist), researchers Brian Degger, Urs Gaudenz, Sachiko Hirosue, and Rüdiger Trojok, and the institutions Lifepatch and Kapelica Gallery.

It is well known that hacking is not solely related to software: hardware, wetware and even social dynamics are subjected to hacking. However, the prohibitive prices of tools, gear and products related to biotechnology research made it impossible for hackers to experiment in this field until very recently. Today, it is possible to create a bio-lab with just a couple of hundred dollars using cleverly hacked devices and applying do-it-yourself solutions. This explains, in part, the growing interest in bio-hacking and the flourishing of hacker spaces around the world, which are introducing wetware research along with the more traditional focus on software and electronics. As already stated, hacking is often associated with piracy and cracking; not by the members of Hackteria, however, for whom hacking predominantly means manipulating a device so that it can perform a different task to that originally intended: to make a boiler out of a toaster, for example, or a microscope out of a game console web cam. To them, hacking is also intended, however, as a service to a community by creating open source and do-it-yourself prototypes that are explained, shared and constructed in workshops organized with local partners. Working on a local scale is another characteristic of Hackteria; Marc Dusseiller often refers to the book *Small is Beautiful* by the economist Ernst Friedrich Schumacher, who defended the importance of developing small economies and activities on a regional level, as an important source of inspiration. [13] This book also provided some interesting prescriptions for scientists and researchers, considering that only a technology with a "human face" will be capable of countering the consequences of the materialistic ideology. As Schumacher affirms:

> *What is it that we really require from the scientists and technologists? I should answer: We need methods and equipment which are cheap enough so that they are accessible to virtually everyone; suitable for small-scale application; and compatible with man's need for creativity.* [14]

Instead of reacting against a technology that is often associated with capitalism, alienation or military warfare – for example by Herbert Marcuse, [15] Joseph Weizenbaum, [16] and more recently, Richard Barbrook [17] – Hackteria appears, instead, to put Schumacher's recommendations into practice. Through the creation of workshops and events that involve the local partners of artists and researchers with a view to offering them an opportunity to learn, share and discuss new technologies, as well as developing cheap and creative tools suitable for small-scale applications, Hackteria gives these technologies a human face. If some tools, such as glass-electrode micropipettes, web cam microscopes and hacked optical mice, are a way of approaching serious science, many other tools are developed in a more creative context, such as a Lo-Fi synthesizer created in a Tupperware container or an hybrid electronic-living system projector. As already observed by Denisa Kera, who affirmed that the "disruptive prototypes have simply a magical and anarchistic capacity to accommodate various uses, dreams, goals and needs and to connect people, contexts and various materials," [18] all of the prototypes, on the other hand, share a punky, rebellious and playful note. A good example is the device *Fish to brain interface circuit* conceived by the artist Antony Hall, who was invited by Hackteria to give a workshop at the BioTehna lab while he presented his solo exhibition at the nearby Kapelica Gallery. [19] The device is a fish-shaped circuit with two light-emitting diodes, which blink at varying speeds determined by the level of humidity of the fingers that manipulates the device. It is simply an amusing gadget to be placed in front of closed eyes so that one can experience a psychedelic, unpredictable sequence of lights and colours – a way of bridging technology, mysticism and subculture humorously and also suggesting that hacking is not necessarily always about saving the world.

However, the main objective of Hackteria is to demystify the technologies that contribute to shaping our society and are, nonetheless, still poorly understood by the majority of the population. Denisa Kera, Assistant Professor at the National University of Singapore, analyzed the recent development of hacker spaces, in particular in Asia, pointing out how they fulfil the role of informing civilians about scientific research, a role that the professional research laboratories have long relinquished due to being ruled by commercial and security imperatives. [20] Due the lack of knowledge about them, biotechnologies generate visceral fears in the population that range from the Promethean nightmare to the anthrax disaster; in the eyes of Hacketeria, it is precisely for these reasons that it is necessary to educate the general public. However, the task of communicating the choice of applying hacking to the field of biotechnologies and introducing it to local communities is a delicate one. The dangers of biotechnology – a research field that encompasses tissue culture, genetics and many other wetware activities – exist, although they are probably overstated. In this respect, the members of the Critical Art Ensemble collective have been very active in throwing light on fears relating to bio-terrorism, suggesting that its real dangers are exaggerated by the authorities – the artists refers here to the US government in particular – in the interests of their political agenda. [21] Lack of knowledge and personal experience on a specific matter not only leads to fear and repulsion, it also allows greater manipulation of the general opinion of the personalities and institutions that have a vested interest on the matter.

Live science is a highly controversial and misunderstood field of research; by offering artists, laypersons and children the opportunity to experiment with a provisional bio-lab, Hackteria wishes to empower a larger community with some tools that will enable people to understand scientific progress and the current political discussion about new technologies. At the BioTehna lab in Ljubljana, artists, curators and amateur researchers learned to solder circuits, program

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the devices through the Arduino platform, and apply some simple tools to biological research. [22] But above all, they learned the possibilities offered by recent technologies for building a bio-lab on a small budget and hacking devices to replace otherwise expensive instruments. During the workshop, and the several coffee breaks, some of the artists discussed the *Soft Control* exhibition, which had opened earlier at Maribor and Slovenj Gradec and presented works by some of the most prominent artists involved in biotechnologies. [23] They asked themselves whether they wanted to belong to the kind of bio-art presented in the show and they questioned the necessity of such large exhibitions presenting works produced using expensive resources and complicated technology, but which were very often shallow in vision and significance. Does media art, and in particular bio-art, have to produce works that are commercially viable and aesthetically entertaining in order to appeal to a wider public? Apart from these questions, they also reflected more specifically on the meaning and utility of organizing workshops. At Ljudmila, the well-known media art space in Ljubljana, some institutions that regularly engage in similar activities met during the month of November 2012 to share their knowledge and experience on organizing workshops in the field of new media and art. [24] Among the variety of topics discussed, the question of the utility and the necessity of workshops was hotly debated. The members appeared to agree that their main goal is to empower people, to move society forward, a vision strongly supported by the members of Hackteria. However, apart from this perspective, some of the participants highlighted another important one: workshops offer the possibility of bringing people from different horizons together, i.e. not only scientific ones, but also cultural and ethnical ones, for example. Bojan Markicevic, a collaborator at Atelier des Jours à Venir, presented the case of a workshop he organized in a village in which tensions rooted in the conflicts in the former Yugoslavia were still perceptible. The workshop, which is offered to children from different ethnic groups, gives them a rare opportunity to meet and work together and its significance goes beyond the mere aspect of learning about hacking and do-it-yourself tools.

The BioTehna lab, and the workshops in Ljubljana, is only one example from a long list of projects and collaborations that have been organized by Hackteria all over the world in its few years of existence. The platform has participated in some important festivals related to new media art, such as ISEA and Ars Electronica. It has organized workshops and activities in Zurich, Ljubljana, Los Angeles, and Yogyakarta, for example. Instead of attempting to bridge the gap between new media art and the wider fine art market, as several artists evolving in this scene are struggling to do, Hackteria pursues its philosophy based on open source and collaborative projects. Marc Dusseiller admits to considering his activity a political one. As he states:

> *My hope is that by enabling more people to do science in their garages, kitchens and bathrooms, and by enabling more artist, designers and simply enthusiasts to work on various scientific projects, we will create a scientifically literate public, which can democratize decisions on stem cells, embryos, GMOs, nanotechnologies etc.* [25]

Elsewhere, he furthers explains that: "As a consequence of greater knowledge, people are also less susceptible to populistic ideas from politicians or empty marketing promises from the corporate world." [26]

Given that Hacketeria cannot finance its activities through the production of open source prototypes, it is strongly reliant on subventions from private and public institutions. The BioTehna lab and workshops in Ljubljana were financed through private and public funding with the collaboration of the Kapelica Gallery. The Swiss contribution to the enlargement of the European Union, a programme of the Swiss Federal Department of Foreign Affairs, the objective of which is to "help[s] to reduce economic and social disparities within the enlarged European Union," [27] while at the same time "laying the foundation for solid economic and political ties with the new EU member states" [28] was among the project's key financial backers. This is interesting as it indicates that Hacketeria's activities are recognized by the Swiss administration as eligible for support from a programme that focuses on social and economic development in foreign countries while also aspiring to establish new economic partnerships. On the other hand, it tells us that Hackteria must look for financial support in contexts outside the traditional

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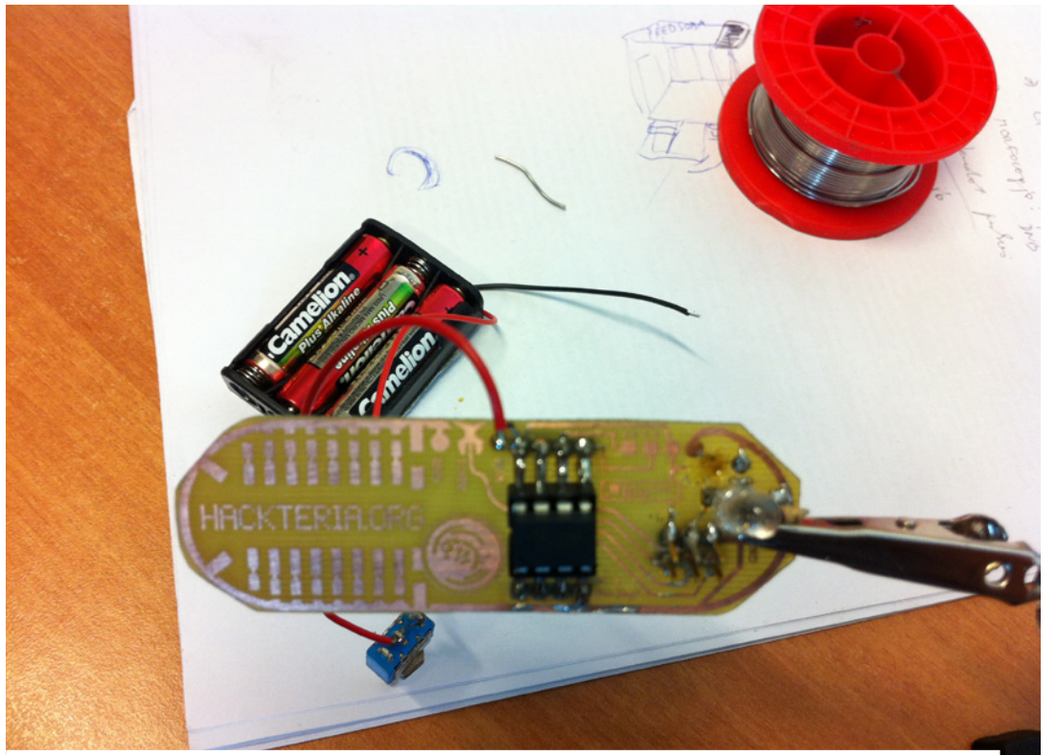

Figure 5. Detail of the BioTehna laboratory in Kiberpipa, Ljubljana, Slovenia, November and December 2012. Photograph by Boris Magrini. Used with permission.

subsidies that are usually solicited for cultural and scientific research. Hacketeria's previous activities in Switzerland were financed by Sitemapping, the funding programme of the Federal Office of Culture, which was dedicated to new media art and digital culture and ran from 2003 to 2011. However, the programme was recently closed due to a restriction on the budget allocated to culture by the parliament and the consequent re-assignment of the associated responsibilities to Pro Helvetia, the Swiss Arts Council. Some other private institutions still finance new media art projects in Switzerland, for example Migros, which dedicates one percent of its income to cultural support with the Migros-Kulturprozent programme. However, apart from the activities initiated by the institution itself in the field, only CHF 50,000 are allocated to new media art projects per year. For Migros-Kulturprozent, supporting Marc Dusseiller and Hackteria was a logical move because "his project is based on the Do-it-yourself philosophy and he is bringing biological insights and know-how in many different fields, also to the field of the arts," [29] as explained by Dominik Landwehr, Head of the Department of Pop and New Media, who edited several publications on Do-it-yourself culture. Hackteria does not always fit in the category of art, however, since it does not produce works in the traditional sense, and it does not necessarily always participate in exhibitions. Moreover, its activities are often overlooked by other institutions that support cultural projects which do not have an adequate knowledge of recent media art strategies. This explains why Hackteria needs to develop other funding strategies to support its projects, and appeal to institutions with a mission dedicated to scientific research, economical development or social utility. For these reasons, the autonomy of Hackteria regarding the commercial fine art market may be challenged by its dependency on justifying its activities to these public and private institutions, particularly in a period of economic crisis affecting the global cultural policy.

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ARTICLE

BIOTECHNOLOGIES AND UTOPIA

Numerous commentators predicted the end of painting during the 20th century, a prophecy that remains far from being fulfilled. Likewise, after the glorious years of new media art at the turn of the millennium, many theorists and historians consider today that strategies such as tactical media and hacktivism are coming to an end, while others question the future of media art per se. [30] If technologies are evolving and replacing each another at an exponential speed, it seems natural that a new generation of artists are inclined to appropriate them. Over the centuries, artists experimented with new techniques without necessarily discarding the older ones. There is nothing to suggest that artists will suddenly stop experimenting with new media in the future just as there is, equally, nothing to suggest that they will not draw, paint and photograph anymore, or even rediscover and appropriate discarded technologies in a 'media archaeology' fashion. Furthermore, there is no reason to believe that artists will stop addressing topics of relevance to society by subverting and hacking the future communication technologies. Hackteria is exemplary of a recent form of activism that uses and appropriates some of the most recently discussed and controversial technologies to develop performative and process-oriented activities addressing societal issues and bridging the gap between artistic and scientific research. Due to their multiplicity and variety of backgrounds, the members of Hackteria are difficult to classify under a single heading. Most importantly, Hacketeria resists traditional classification because it refuses to follow the conventional protocols of scientific research, on one hand, and artistic production, on the other. From a commercial point of view, it is neither a professional research lab nor an artistic collective. In spite of this, its participation in important cultural festivals and symposiums worldwide along with its success in obtaining public and private funding demonstrate that Hackteria is far from being an irrelevant underground organization and that it has, on the contrary, established a name for itself.

The fact that Hackteria is invited to festivals like Ars Electronica and ISEA, that it is discussed in cultural magazines, and actively collaborates with artists and exhibition spaces clearly situates it in an artistic field, more specifically associated to the clusters of 'new media art,' 'art and science,' and bio-art. It is not the first – or last – example of a collaborative project working on a performative and process-oriented basis in the history of art. However, what mainly characterizes Hackteria is the ideology that drives its activities. Hackteria is a cultural and artistic project because it is driven by the idea that knowledge sharing and open-source projects and prototypes will create a better and more equal society: a better society because the dialogue and the network facilitated between researchers and artists will open new creative applications in the use of technologies that would otherwise be restricted to commercial uses. However, also a more equal society because the wide-reaching empowerment of citizens with tools for experimenting with new technologies through cheap do-it-yourself and hacked solutions will enable them to participate better in the political debates about such technologies. It is a rather Utopian vision, yet one that is coupled with a pragmatic approach involving action on a local scale. This is in line with the previously discussed prescriptions by Ernst Friedrich Schumacher but at the same time involves the development of a global network of local projects and partners, who and which inherit the McLuhan vision of a global community made possible by modern technologies. The philosophy underlying the activities of Hackteria could be considered Utopian to some extent; indeed, the reality concerning the costs and the requirements of scientific research makes it difficult to believe that any do-it-yourself lab will ever provide a successful solution that an industrial laboratory cannot provide. As Marc Dusseiller admits: "It's improbable that ideas for developing new drugs or solving the problem of world hunger will come out of this scene." [31] In fact, the activism put forward by Hackteria is somehow more pragmatic then the majority of the tactical media activities of the late 1990s, which were strongly reliant on subversive strategies and confrontation. Despite providing an alternative to the dominant capitalistic system, the model of knowledge sharing and empowerment that it promotes is not incompatible with the current laws and economic regulations of our society. Indeed, even in the age of the Internet and even if open-source projects and free software are, in reality, a product of a free-market capitalist society, as lucidly analyzed by Lawrence Lessig, the consideration of knowledge and culture as something free is not as evident today as it might seem. [32] Another important and distinctive aspect of Hackteria, as opposed to the vast majority of activist practices of the 1960s and '70s and even some of the tactical media strategies of the '90s, is the belief that society does not need to refuse technological progress in order to improve. While technology has been considered by some critical theorists in the past as the tool of a capitalist society – as a means of improving productivity and attaining better control of workers and the consumers – Hackteria embodies a neomodern determination to merge technological progress and social equality. As Brian Holmes asserted in his contribution to the one hundred books of the thirteenth Documenta: "A movement without techné can't convince anyone of its capacity to materially reorganize society." [33]

One of the reasons why, following his involvement with the Swiss Mechatronic Art Society (SGMK), Marc Dusseiller decided to dedicate his time and energies to a project involving biotechnologies is that the tools for creating a bio-lab were becoming affordable to a wider public. Another reason could be that bio-art acquired international recognition during the first decades of the new millennium and is still considered the most avant-garde frontier in the new media art scene, hence the urge felt by younger artists to experiment with these technologies. Above all, however, Hackteria was created in the hope of responding to a growing discrepancy between the researchers developing new products and tools and the authorities who regulate the research and the consumers. Biotechnologies continue to be extremely obscure and controversial and trigger resistance from the general population which misunderstands them. To bring them closer to the citizens is a political act, regardless of the field in which it is performed, be it artistic or scientific. This position is defended by Alessandro Delfanti in his academic research on the bio hacking emergence. For him open biology "is open circulation of information that has important political consequences, and the role of new media as tools for democracy is an important discourse underlying the whole development of information societies." [34] The success of Hackteria since its creation, the number of workshops it has organized, the network it has created, and the conferences and festivals in which it has participated signal that this peculiar political act undertaken by its members has succeeded in arousing some curiosity among a growing network of artists, researchers and a variety of other participants. And if curiosity ultimately leads to knowledge, the neomodern hacker Utopia may eventually lead to a better world indeed. ■

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