

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

Data Union Fork → Tools for data strike is a participatory artwork created by Larisa Blazic (Artist) in collaboration with Waag (Producer) society and Dyne.org, supported by STARTS Residency programme and hosted by DECODE project (Technical Partner). The work produced during a year and a half long residency consists of an interactive installation and workshops that together create a narrative supporting DECODE project's argument for algorithmic sovereignty and data commons on one hand and more broadly it advocates for a fair and sustainable digital transition, putting data and innovation at the service of the people. The design and implementation for the artwork was structured in three development stages, each focused on the completion of specific components of the work. The second of these stages involved public participation facilitated by Waag Society. Dyne.org (DECODE project's technical lead) Free/Libre/Open Software (FLOSS) culture and practice enabled remote collaboration through publicly released materials and code. Contributions to the project brought by the Artist and the Technical Partner were mutually beneficial, each gaining new knowledge and perspectives for their own ongoing work in artistic and technological fields. The work produced during the residency have an immediate and long-term impact for the Artist and Technical partner in their aspirations to transform and create new FLOSS infrastructures to increase data sovereignty of European citizens.

Index Terms — Collective response, Data, Personal data, Privacy, Union-tradition.

I. INTRODUCTION

Data Union Fork → Tools for data strike is an art project inspired by labour union tradition, exploring a collective, creative, and democratic response to the social, economic, and cultural implications of mass scale predatory and exploitative data collection. Originally conceived by a group of artists, activists and academics in the wake of **Snowden revelations** as Data Union, the Fork was developed in relation to the technologies explored and created by Dyne.org within the DECODE project. The Fork sets out to encourage audience's reflection upon critical issues and impact arising from persistent personal data harvesting, digital surveillance and profiling as well as creatively engage in thinking how collective action could help regain control and re-define the value of collected data whilst promoting solidarity and mutual aid. Data Union Fork's technological focus was on Dyne.org (DECODE project's technical lead) proposal for privacy-by-design operating system as well as their exploration of the Blockchain smart contracts that were later incorporated in pilot projects in Barcelona (DDDC-Decidim and Barcelona Now) finally resulting in a range of DECODE tools. The secure operating system - Decode OS, Zenroom – human readable contracts, data commons dashboard used to shape the city's policy agenda, had an important impact on development trajectory of Data Union Fork thus strengthening argument for continued effort to develop tools for organising and mobilising general public that support DECODE project's aims and objectives. The residency was an opportunity to bring these ideas to the public, to engage in co-creation and testing them together. Main goals of the residency can be summarised as:

- To enable artist to test and experiment with critical collaborative processes within DECODE project;
 - To provide a framework within which audiences may engage in self-reflection;
 - To educate, inform and inspire audiences about relationship between digital rights and personal data;
 - To create a new artwork.
-

II. ARTWORK

The artwork in its current form, an interactive installation on trolleys, a mobile interface, DUF.img (a modified Devuan image/distribution with Data Union Fork setup and database) and workshops, in its totality is an invitation to reflect on digital innovation impact on their lives as well as a call for action to defend and manage personal and population-wide data. The workshops developed, subvert known UX design and software design methodologies creating an entry point for audience. These have been developed inspired by participatory design methods used by DECODE partners in Barcelona, recognising importance of accessibility and transparency of the process. The workshops had formative influence on shaping the artwork, as public engagement helped create a body of evidence leading to experimentation with technologies that are easily accessible, thus easily reproducible for the general public. All workshop pads will be released under a copyleft license for free remix and re-use by audience. The installation created is using recycled monitors, shopping trolleys (that itself are a symbol of an ordinary citizen) and cheap microprocessors: Raspberry Pis. All raspberry Pis run Devuan operating system – base of DECODE OS, with one of them running Apache server, MySQL database, and PHP as well as a WIFI hotspot. 4 Raspberry Pis are attached to 4 recycled monitors and fixed to individual trolleys. 3 Raspberry pis are connected to the one running server and they all display one page each to spell: Mobilise-Organsie-Set target-Strike. Meanwhile, audience connecting to Local Area Networks (LAN), access Data Union Fork mobile web pages in order to add ideas for the same sequence as above as well as access PHP pages displaying audience's input. All is being collected anonymously – no personal data collection at all in the process of interaction. Interaction here is as unassuming as possible, mostly typographic visual communication employed, to create interaction experience with least possible control of Artist, allowing audiences' room for independent thought and idea development.

Outcomes

Installation and workshop kit

- The workshops developed:
 - Example mapping for collective bargaining
 - Ceci n'est pas un contrat; Pseudocode for Data Union contracts
- Installation:
 - Raspberry pis (running Devuan, DECODE OS base operating system)
 - Recycled monitors
 - Trolleys
 - Web interface
- D ◦ UF.img (a modified Devuan image/distribution with Data Union Fork setup and database)

III. METHODOLOGY

Combination of broad discursive critical engineering, participatory art and software studies, some techno-political and some socio-technical, constitute Data Union Fork's hybrid research, development and production methodology. Employed over period of year and a half, and in 3 phases: discovery, workshops and installation, these methods still seem appropriate to explore Data Union Fork as well as DECODE project, with their attention to power, ethics and accessibility, all of which mirror the core aspirations of the project itself.

Discovery:

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

Study of DECODE publicly accessible published written material and code: publications on interface design, decode OS white papers, co-design papers, data commons, ARM boards survey, zenroom&zencode, Barcelona pilot, Github code for coconut, zencode, wallets, Barcelona Decidim platform, etc.

Workshops:

Focusing on gathering information on general public's level of understanding the problem: the surveillance, data collection, profiling, GDPR, education about historical unionising methods, software design methods and generating ideas for collective response in such-a circumstances. Making time to examine what are "rules" & how do they manifest in political, social, economic and legislative contexts.

Installation:

Participation taken from analogue (workshops) to digital domain – as understanding of "tools" has changed during the residency – it has become more pressing to raise issues of self organising, mobilise public and focus on people rather than on snazzy technical wizardry.

IV. CO-CREATION PROCESS

Although the current iteration of Data Union Fork takes form of an interactive installation, co-creation with audience was at the hart of research and development process on which production and the final outcome is based. In the early stages Larisa subverted UX and software design methods such as Example mapping and pseudocode through which audience participation was facilitated, to gain better understanding of how public perceives the problem. The installation is set up to collect audience's ideas for collective action via browser-based interface on mobile phones.

The original residency proposal consisted of a menu of activities which was revised at the inception meeting leading to a process and final outcomes more suitable for the size and scale of Decode project as well as producer's programme, availability and location. Waag had agreed to host a number of workshops that have served as a way to bring in Dyne.org as well as expose the ideas to the wider public, an invaluable element of the work. Moreover, immediately after the inception meeting, I was invited to Decode Symposium in Barcelona that was an incredibly useful and intense introduction to the people and the project. Following this, I have spent a couple of months studying Decode's partners prolific output via their website as well as their Github materials, that have to be hailed as excellent examples of good practice for remote work and participation. Meanwhile, I had regular online meetings with Christine Van Den Horn, Merel Boes, Miha Tursic, Gijs Boerwinkel of Waag and Jaromil Roio, Ivan Parazyd, and Frederico Bonelli of Dyne.org through which the outlines for the workshops have emerged, had been clarified and promoted via Waag society.

Waag team hosted 2 workshops on 28th February 2019 and 25th April (details above), helped with promotion and documentation of the work, as well as supported presentation of work in progress at the STARTS Residency days in Paris on 27th and 28th March 2019. I have established contact with ThoughtWorks and organised a closed workshop in London on 23rd

July and was invited by Decode project to participate in their closing symposium, Our Data, Our Future: Radical Tech for a Democratic Digital Society, at The Role of STARTS (Science, Tech and the Arts) for a Human-centric Digital Future panel, hosted by Marleen Stikker (founder of Waag) on 5th November 2019 in Torino.

The last part of the residency was mostly an independent endeavour.

V.IMPACT

A. Research Impact

The concepts, metaphors and interventions of the work add for a general audience an almost tangible layer to technology that is by nature and design very invisible, complex and almost magical. The turn out of audience to both workshops is a reflection of the value of this approach and this was also the feedback of people who attend these events. This artistic research aiming for removal of veil of magical thinking that is often laid over new technologies such as blockchain, encryptions and AI is very important.

B. Artistic Impact

Decode overall and more specifically Waag's and Dyne.org's support have been an invaluable in enabling this deep and rigorous study of very complex issues as manifested in tensions between the need of privacy and personal data (with economic and social repercussions) on one hand and a range of software developed as part of Decode project, that gave an insight to a computer science practice enriched by interdisciplinary approach thus giving a more wholistic overview and direction towards software design, development and implementation far more suitable for a fair and democratic digital society. This benefited the artist's understanding and ideation needed to design workshops as well as work towards successful completion of the interactive installation.

VI. ART-SCIENCE INTER-RELATIONSHIPS

Computational concepts, technological language specific to digital medium and hybridisation of creative practice have been successfully explored in the Media arts for decades by now. Digital was a narrative, a tool and a concept, aesthetic and political playground of sorts. These experiments created a notion of digital artisan and a creative technologist on one hand and enabled a new view of intellectual property on the other. They widened a pathway to participation, collaboration and co-creation in creative software development, looking critically at the software as cultural production as well as technological advance. Pioneering critical study of digital innovation and its impact, artists have been of forefront in the last 25 years, often flagging problematic areas of technological development and have found a way into Digital Humanities in academia in form of Software studies, Media studies, Critical studies and emerging technologies, but often ignored by the industry and largely ignored by Computer Science. STARTS Residencies help remedy this problem, creating a space where collaboration leads to shared language enabling further conversations that benefit society at large – for a fair and sustainable digital transition, putting data and innovation at the service of the people.

VII. FUTURE DIRECTION AND ACTIONS

In my recent work, I've studied the Blockchain technology on conceptual level, examining its attention to power, ethics and accessibility, all of which mirror the core aspirations of the technology itself. I now wish to take this insight further and start

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

making artistic software experiments, using complex algorithmic techniques such as peer-to-peer computing and cryptography, leading to the creation of new body of work. It is my aim to go beyond cryptocurrencies and raise questions about how the Blockchain's embedded values play out when technologies based on it are deployed. This way I will confront the dream of decentralisation and test the myth of techno-liberation.

VIII. CONCLUSION

From the get-go work on Data Union Fork was tightly connected to and inspired by DECODE project's proposal for a robust overhaul of how control of personal information on the internet is understood and therefore implemented in our daily life impacting social, economic and environmental justice. It is within the Data Union Fork, I explore ways in which ordinary people can assert their rights to privacy, dignity, equality and freedom in digital domain. Data Union Fork experiments with the right to freedom of assembly and association, including the right to form unions, affirming they are necessary in a democratic society. Encouraging tech innovation that is deliberate, focused on public benefit and protection of human rights, Data Union Fork contributes to the most progressive developments of European culture, society, art and technology furthering ideas such as data commons, algorithmic sovereignty and techno-ethics.

Despite the increase in educational efforts in critical media arts and through the activist tradition, lack of visibility of persistent data harvesting and ever increasing complexities of such systems have been forbidding and alienating to the wider public. Mounting evidence growing exponentially day-by-day, only strengthen the argument for bottom-up self-organising, founded on Free software culture and practice, an uncompromising philosophy and ethics focused on knowledge sharing, collaboration and participation, making Data Union Fork small, but valuable contribution through which rigorous and critical engagement with technology is encouraged. Moreover, it advocates for a fair and sustainable digital transition, putting data and innovation at the service of the people.

In my opinion the collaboration with Decode project has been a very fruitful and rewarding experience. I am proud of the artwork we will exhibit soon. This project and the insights it offers will continue to emerge over time.

APPENDIX

N/A

ACKNOWLEDGMENT

DECODE IS FUNDED BY THE EUROPEAN UNION'S HORIZON 2020 PROGRAMME, UNDER GRANT AGREEMENT NUMBER 732546. THE PROJECT WOULD NOT HAVE EXISTED WITHOUT WORK OF DR AMIT RAI AND SMON CRAB, WITH WHOM I HAVE WORKED ON THE ORIGINAL DATA UNION IDEA IN 2012/13. SPECIAL THANKS TO FRANCESCA BRIA AND JAROMIL ROJO FOR OUT-OF-THIS WORLD INSPIRATION AND DEDICATION TO THE FREE SOFTWARE CULTURE AND PRACTICE AS WELL AS ALL IN WAAG SOCIETY FOR CONTINUED SUPPORT THROUGHOUT THE RESIDENCY. MANY THANKS TO ILZE BLACK FOR HER VIDEO DOCUMENTATION DIRECTION AND

P

R

O

D