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PHC (Painfully Human Chatbot)

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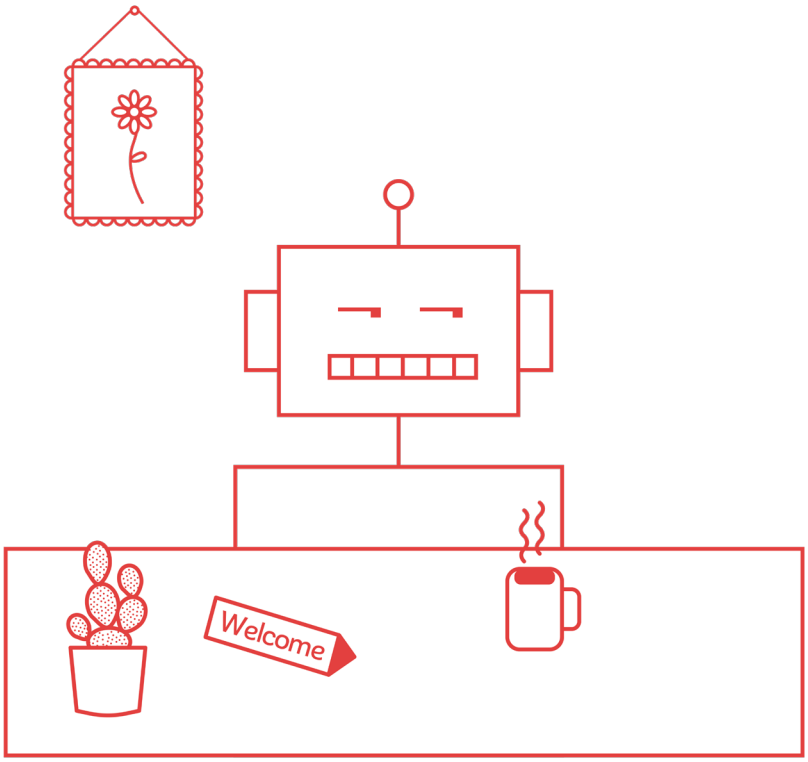
Welcome

Proofreading, Irati Iturritza

“Yo estoy muy capacitado para no hacer nada. Yo no soy una persona de esas de las que se dice que necesitan estar trabajando porque si no no se realizan. Si yo hubiera sido heredero habría estado perfectamente sin hacer nada.“ [1]

Fernando Fernán Gomez

1 [I am very qualified to do nothing. I’m not one of those people who are said to need to be working because otherwise they won’t be fulfilled. If I had been an heir, I would have been perfectly fine doing nothing.] https://www.youtube.com/watch?v=G8gz8bvgKg4

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Abstract

This thesis investigates technology as a key concept in which hopes and disappointments are loaded, as well as its role in changing the mindset of human beings, and the creation of new values. By exploring concepts from the areas of politics and economics, a conceptual framework begins to be created that enables the question of whether subjects are assimilating machinic values. Alongside this question, the corporate interests behind the development of new technologies and their social effects are also explored. The posing of these questions aims to explore projects that appropriate the strategies of these disciplines to resist increasing precarity, mechanisation and dehumanisation.

This thesis also shows the practical and conceptual research behind PHC (Painfully Human Chatbot) a chatbot that against its main goal, implements time awareness and tiredness, and changes its performance level depending on it. This artistic piece aims to criticise technology designed with a clear corporate interest, and aims to provoke a reflection on the machinic values that humans are increasingly assimilating, such as constant availability or hyperproduction. It also raises the question of whether the development of new technologies is serving society as imagined.

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My *ama* for being a healer
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Motivation

The origin of this work stems from a feeling that has grown in recent years. I had the perception, supported by what I observed, that society was in constant movement, without pause or rest. Life was a blur that could not be slowed down. This effect was observed not only in work, but also in leisure, in research, in culture... The subjective self-value was based on the quantity of constant chained acts, on the quantity of things created. This global attitude, which everyone seemed to embrace, began to seem artificial and difficult to bear. I noticed around me people falling into a state of perpetual anxiety, a mentality focused on the next thing. I began to talk to people who had the same feeling, and who, like me, did not know how to go against this increasingly widespread acceleration.

The subjectivity does not usually come out of nowhere, there are always external factors that slowly modify social perceptions. My research always stems from personal observations that I don't know how to deal with. It helps me to do research on the problems that concern me in order to understand the extent and depth of it. Understanding the origin and the mechanisms put in place clarifies them and makes it easier for me to deal with them in a realistic way.

With this feeling, I started trying to understand what were the factors that were slowly inserting in society this revalorisation of some machinic characteristics. It is not strange that a society in constant connection with technology has assimilated some behaviours from it, but how to control the unconscious assimilation of harmful values? What are the external demands that make human beings keep on changing despite their conscience?

From my point of view, I believe that modern technology is being overused for interests centred on production, multitasking and the pursuit of profit. I argue that the use of technology is not necessarily harmful, it has brought and will bring many benefits to humanity. But the lack of democratisation of decisions about the creation of new technologies and the objectives of these technologies is leading us to a society that uses devices that have corporate interests embedded in their code. To leave the creation of new technologies in the hands of corporations alone is to leave part of the creation of the future in their hands. A future in which, if there is no social perspective, will advance more and more towards a hyper-mechanised, hyper-productive and hyper-stressed future that will develop in spite of people and not together with them.

With this concern as the driving force of this work, and looking at it from the point of view of artistic creation, I will look for paths of resistances and interruptions.

Introduction

This master thesis is divided into three parts.

The first chapter of this thesis consists of a theoretical investigation starting with the idea of the saviour technology and reviewing the belief that the machine aims to save the human physical labour and time, it goes through the current interests, the evolution of work and the evolution towards automation. Focusing on the subject, it reviews the values of productivity, creativity or innovation, and analyses the effect of new forms of alienation on the human. The aim of this first part is to understand what state the productive individual is in right now, and what pressures he or she is under. It explores whether humans are beginning to assimilate machine values and how they affect them psychologically and socially.

The second chapter explores different strategies of resistance against technology designed with corporate objectives in mind. Through different techniques, these artists find ways to open up pasts and futures, timelines different from the present one, and to search among them for paths, solutions or resistances. Some artists who work on the concept of current and future work are also named.

In the third chapter of this thesis consists on the development of the artistic practice carried out. The work PHC (Painfully Human Chatbot), its development, objectives, obstacles and the final presentation of this project at Ars Electronica 2021 are presented.

0. Future promises, social disappointments

I believe it is important to begin this paper by reflecting on the future, on technology and on utopia. To speak of the creation of technology inevitably implies bringing up issues regarding the future; within the expansion of technology, humanity carries hopes and dreams of development, and trusts that its advances will make life easier. These hopes are further fostered by their creators, in order to get society to embrace their creations, to invest in them, --either with time or money--, and to use them.

"Utopia" comes from Greek: οὐ ("not") and τόπος ("place") which alludes to a place that does not exist, an impossibility. This word refers to an imaginary community or society that possesses highly desirable or nearly perfect qualities for its citizens (Mumford, 1922). Utopia is also a political issue. It is used as a slogan to energise the political perspective and also encourages hope for the future (Jameson, 2005). Nowadays, the word utopia is used as the idea or representation of a perfect, sublime and fantastic future (Mumford, 1922:183-185).

The prevalence of the idea of a perfect world with no ecological, social, ideological or political issues thrives on portraying technology as a saviour and objective tool that will solve such problems. However, awareness is gradually growing that this promise of development is not being fulfilled, and that, despite advances, life becomes increasingly precarious (Dyer-Witheford, 2015). This makes us turn our heads and reanalyse the concept of technology, no longer as an all-powerful tool, but as one that is rather part of the prevailing power dynamics, and which is developed with specific interests in mind (Suarez-Villa, 2009).

"I tend to think that most fears about A.I. are best understood as fears about capitalism. And I think that this is actually true of most fears of technology, too. Most of our fears or anxieties about technology are best understood as fears or anxiety about how capitalism will use technology against us. And technology and capitalism have been so closely intertwined that it's hard to distinguish the two."

Ted Chiang (The Ezra Klein show, 2021)

0.1 The human machine

The development of machines and technology points towards a possible world without labour, where human beings devote themselves to thinking and drawing and have no other concern than their mental cultivation. As explained by Arendt, labour and work are differentiated on the basis that labour arises from the need for survival and the creation of basic consumer goods (Arendt, 1998) whereas working creates objects

through modifying nature (Arendt, 1998).

Lewis Mumford points out that the first utopia was the city, more specifically the ancient city. The creation of the ancient city fulfilled the planned expectations and fantasies and sometimes surpassed them. “What institutional apparatus made it possible to organise and build these vast ideal structures?” (Mumford, 1965:V).

According to Mumford, the idea of the machine emerged prior to the industrial revolution. The first machine was conceived by the royalty, and consisted of a collective human machine transmitted through a historical institution: the army. This machine employed the energy of large formations of men. “Each of the units of this machinery was configured, classified, trained, organised and articulated to perform its particular function in a unitary whole of work” (Mumford, 1965:V). The division of labour was already manifest in the age of the pyramids through this collective machine based on slavery and forced work.

From this archetypal machine, most of the dehumanised routines applied at the present time were inherited. The suppression of human autonomy was imperative for its proper functioning and the creation of utopia would be imbued with an authoritarian nature. The archetypal machine was thus an ambivalent triumph. It brought the awareness of human capacity and the exaltation of the human spirit but also the pressure of unreal collective ambitions coupled with fantasy. It developed the idea of construction as a creative act and the maintenance of this constant creation at the expense of destruction and the conquest of other territories, cementing the military machine and the labour machine. Utopia and dystopia at the same time.

The connection between utopia, machines and repression is especially relevant for this interpretation. Achieving perfection, reaching an ideal, would require a workforce that functions as a single entity, and so the creation of a human machine calls for its dehumanisation.

Nowadays this human machine is still necessary to achieve these ideals of society, but in the pursuit of it, brutally alienating systems are put into practice. As a society we should start identifying and resisting the acceptance of big compromises in order to achieve impossible ideals.

1. MECHANIZED HUMAN

In order to understand how the values of machines are assimilated by human beings, it is necessary to reflect on the social, economic and political reality such individuals face. This chapter identifies some factors that affect and promote assimilation for various reasons and interests, and on which the use of technology plays a fundamental role. The aim is precisely to find signs of the growing sense of human anxiety and powerlessness in the face of a system that seems to be created in spite of its subjects.

I will encompass this conceptualisation in two parts: within the productive being, I will explore the factors that focus on increasing the productivity and performance of the subject; as for the individual being, I will analyse the strategies of growing individualisation and dehumanisation.

1.1 Productive subject

To understand the pressure of the individual's need to produce, we must look at the economic factors of modernity. Today, the capitalist system calls for constant creativity, continuous innovation and production (Suarez-Villa, 2009). The feeling of an accelerated time pressures the subjects to constantly produce and to value themselves through it.

1.1.1 Value/Utility

Production is an action that creates value; before elaborating on other concepts, it is necessary to define what value means. In this chapter we will talk about three types of value: market value, social value and individual value.

Market value is measured by the factors of production of a good. The value of a good is also influenced by demand, required labour effort, and availability. Adam Smith distinguishes two types of value: use value (the amount of labour used for the good) and exchange value (the price paid to acquire a good) (Smith, 1776).

Defining social value is more complex. It considers all possible forms of utility for society as a whole (communities, organisations, groups, individuals) and its value resides in the benefit for society, even if it has no surplus value or practically no market value. It confronts economic profit, leaving it in the background. Without social need, there can be no social value, and at the present time social value is often controlled by market value.

Finally, individual value refers to personal value measured by productivity,

and in this thesis will appear closely linked to production capacity and work. Work is currently seen as a criterion for the definition of social status. It is a means for achieving personal fulfilment, and appears inherently linked to self-worth and the image of the “self”. It transitions from instrumental value, which conceives work as a means of survival, to a post-materialist value, which is linked to ambition and social development (Busquet, 2020).

1.1.2 Production and the evolution of capitalism

When assessing the subject through the lens of productivity, it is inevitable to talk about the prevailing and current economic system: capitalism.

The capitalist system appeared in Europe in the 13th century, replacing feudalism. Whereas in the feudal system labour derived from the bonds of feudal servitude, capitalism promoted labour in exchange for capital (Durand, 2021).

Capitalism is a social and political system that appears to be in constant motion. It is based on the fact that the ownership of resources is mostly private. Resources belong to individuals or to companies which are usually represented by individuals, rather than to organisations such as the state. The production of goods is carried out independently and relies on a consumer market for resources exchanged through free trade. This system promotes competition, and economic activity is organised in such a way that the people who manage the means of production can make an economic profit and increase their capital. Prices are mostly set in a market that depends on the interaction between supply and demand given by the choices of producers and consumers. It further proposes that people are legally in possession of their labour power and free to sell or retain it.

Thus, under capitalism:

1. Ownership of means of production is private.
2. People own their labour power and are free to sell it.
3. Production is profit-oriented with the aim of satisfying human needs.
4. Goods and services are distributed through market mechanisms.

But how could capitalism be defined at present? What changes have taken place during modernity?

Recent changes are associated with the emergence of new technological sectors, the growing power of corporations and new forms of organisation. Luis Suarez-Villa points to the origin of a new version of capitalism that generates new corporate organisations designed to exploit intangible entities such as creativity

or new knowledge (Suarez-Villa, 2009). This new system focuses on technological research and on the appropriation of research results as intellectual property. Suarez-Villa defines experimentalism as: “experimentation for the sake of corporate power and profit, as opposed to experimentation for its own sake or for the sake of attaining new knowledge” (Ibid : 8).

Indeed, technology is not purely neutral or cultural, but rather the result of human actions and decisions, and the current creation of technology being in the hands of corporations makes it inevitable that some interests are embedded in its development. The fact that decisions about the creation of technology are in the hands of private entities alone has social, political and economic consequences. This power of corporations over society is called corporatism (Suarez-Villa, 2009:25).

The term technocapitalism refers to a capitalism centred on corporate power and the exploitation of technological creativity (Ibid: 29-30). “The tangible resources of industrial capitalism, in the form of raw materials, production hardware, capital, and physical labour routines are thus replaced by intangibles, research hardware, experimental designs, and talented individuals with creative aptitudes”. (Ibid: 4). In the pursuit of profit and power through the commodification of creativity, research is subordinated to corporate power.

Suarez Villa notes the growing registration of patents as a sign of the accumulation of technological knowledge. “An example of this new kind of corporatism can be found in companies that are solely dedicated to decode genetic information to patent and retain the property claim. The early genetic decoding companies- such as Incyte and Celera Genomics- were built on this model and demonstrated a corporate path that other companies followed” (Suarez Villa, 2009: 21). The purpose of these companies is solely to claim intellectual property rights when used in the development of a product or service. We could state that the search for truth is subjected to the pursuit of commercial value.

Technocapitalism uses society as a laboratory. It bypasses or overrides constraints that might help society to resist this new order, or else assimilates them. One of the tools or resources this system uses is the accumulation of technological infrastructure. Experimentalism thrives on the creation of various facilities for experimentation in science and engineering, in addition to communication such as the internet or the web. It is also nourished by the technological infrastructure of education which, in relation to higher education being massified, has invested in the expansion of the public university and its resources. All of this social investment has a single destination: companies. Public investment in this type of research facilities that does not fall within education is reduced every year leaving it under the market

influence and depending on what is profitable and what is not. “In a society where, corporate power tends to decide or co-opt most any aspect of the public domain, the large historical cumulation of public spending on infrastructure was a boon to its power”. (Suarez Villa, 2009: 23). In this system, technological innovations are shaped by capitalist needs and corporatist values are integrated into research programmes.

This creative imagination is nourished by relationships and social contexts, and therefore networks have the capacity to constitute a space where people can think differently and break pre-existing dogmas and conventions. Some resistance to this system could be given through the creative potential of social networks, but these same networks have made it possible to create new hierarchies and control mechanisms. Open Source initiatives have served as an outlet too, as ownership is ignored in favour of collaboration and the free use of results. But this initiative also benefits experimentalism: the available results are integrated into corporate products and services, and some free softwares are used to reduce profits in the creation of new products that are then sold for a profit (Suarez-Villa, 2009:41).

What then are the options to prevent a technocapitalist future? Greater corporate accountability would be needed, but we cannot ask for accountability from companies when their sole purpose is to increase profits. We are at a time when we have to decide as a society whether technology is to be used for the benefit of humans or whether it will continue to serve corporations.

1.1.3 Accelerationists and the choice not to decelerate

The first and most obvious solution to counteract the effect of this continued acceleration is doing the opposite, decelerating. “The general reasoning is that if modernity=progress=capitalism=acceleration, then the only possible resistance involves deceleration”[1] Avanessian,Reis, 2017:11).

In the process of making up for acceleration, I find it interesting to mention the Manifesto for an Accelerationist Politics. It provides a different view on the issue, as it is one of the only theories that considers development and technology as an equally useful tool to resist corporate domination, and not just as a threat (Avanessian,Reis, 2017:12-13).

The failure to deliver on the promises of capitalism has entailed expectations to be lower. The first reaction is to slow down or to get out, to seek an escape, and to be wary of the technological infrastructure tainted by capital. Accelerationists, nonetheless,

1 [El razonamiento general aqui es que si modernidad=progreso=capitalismo=aceleración, entonces la única posible resistencia supone la desaceleración].

see this choice as the prerogative of a privileged, individualised bystander who is unlikely to suffer the consequences of leaving technological intelligence in the hands of others. They believe that "there is a lack of pragmatic criteria for identifying and selecting the elements of such a system that can be effective in a specific transition to another way of life, beyond the inequities and shortcomings of capital" (Avanessian, Reis, 2017:12)[2].

Accelerationists point out that there is often confusion between speed and acceleration. Rapid movement is only carried out within strict and defined capitalist parameters; accelerationist consider recent speed to be a local prospect. Progress is only measured through surplus value and this is how modernity is reduced to measures of economic growth. Moreover, neoliberalism represents itself as the sole vehicle of modernity, "while promising a future that it is constitutively incapable of delivering" [3](Avanessian,Reis, 2017:37).

They argue there are two distinct types of political left. One revolves around folk politics, direct action and uncompromising horizontalism, which is based on creating small temporary spaces of non-capitalist relations "shying away from the real problems of confronting enemies that are intrinsically non-local, abstract and deeply rooted in our everyday infrastructure"[4] (Avanessian,Reis, 2017:39). The second form of political left, the accelerationist policy, seeks to preserve the "gains of late capitalism while going beyond what its value system, its control structures and its mass pathologies allow"[5](Avanessian,Reis, 2017:39).

Alternatively, accelerationism suggests that the radical political response to capitalism is not to protest or wait for its collapse, but to accelerate its uprooting, alienating, decoding and abstractive tendencies (Avanessian,Reis, 2017:9). It conceptualises the future outside of traditional, regressive critiques and restorative decelerationist "solutions" and bases this thinking on the idea that "machinery does not exclude the possibility of other relations of production under which it can be employed" [6](Avanessian,Reis, 2017:15).

Despite being an interesting position, accelerationists still lack realistic

2 [Faltan criterios pragmáticos para la identificación y la selección de los elementos de ese sistema que pueden ser eficaces en una transición concreta a otra forma de vida, mas allá de las inequidades y las taras del capital] .

3 [Mientras promete un futuro que es constitutivamente incapaz de proporcionar].

4 [Rehuyendo los problemas reales que conlleva el enfrentarse a enemigos intrínsecamente no-locales, asbtractos y profundamente arraigados en nuestra infraestructura cotidiana].

5 [Las conquistas del capitalismo tardío al tiempo que va más allá de lo que su sistema de valores, sus estructuras de control y sus patologías de masa permiten].

6 [La maquinaria no excluye la posibilidad de otras relaciones de producción bajo las que puede ser empleada]..

proposals for implementing this response; but they open up the range of possibilities in another way, by accepting that resistance to this type of development does not necessarily revolve around going back in time, but on modifying the tools and systems already available.

We should mention, withal, two fundamental problems with embracing acceleration. One, which we have already referred to, is that machinery and technology include specific intrinsic values from their very creation, having been developed with certain objectives in mind. “Machines sophisticated themselves beyond the possibility of a socialist use, embodying the mechanics of the market within their nano-assembled interstices and evolving through quasi-Darwinian algorithms that create hypercompetition within “the infrastructure””[7] (Land in Avanessian and Reis 2017: 67).

Another issue is that our society relies on factors that cannot be easily accelerated. Time can’t be accelerated; physiology can’t be accelerated. Even democracy is resistant to time, as it constitutes a slow process. It advances through debates, finding solutions, compromising... It is too time consuming for this increasing rhythm of life.

How can we embrace acceleration without faltering in the process?

1.1.4 Labour, proletariat and group power

Between this capitalist acceleration that seeks the constant increase of profits, and the pursuit of personal fulfilment through production, lies labour.

As we mentioned earlier, as stated by Arendt, labour and work are two different terms. The author defines labour as a force that arises from the passionate struggle for freedom by overcoming needs, and the rejection of all effort that does not leave a trace, producing basic consumer goods. To labour means to be enslaved by necessity. The subject driven by this force is called “animal laborans”. Work, however, focuses on making objects of use, transforming matter (Arendt, 1998).

Despite the perception that labour does not create commodities, Arendt identifies that, if work produces new objects, labour generates a surplus, an excess of credit. Consequently, the productivity of labour constitutes an excess of production itself. It is at this point that basic consumer goods are no longer created, but exceeded. Today, production is focused on surplus, and that is where the value of a company

7 [Las maquinas se han sofisticado a si mismas mas allá de la posibilidad de uso socialista, encarnando la mecánica del mercado al interior de sus intersticios nanoensamblados y evolucionando mediante algoritmos cuasidarwinianos que crean hipercompetencia al interior de “la infraestructura”].

lies (Rosa, 2016). Capital is not interested in innovation, but in the extra value it can extract. If that is the goal, there is no possible end to it; production will never stop, and we will never stop being animal laborans because the new “need” might never be met.

“The vast increase in productivity, enabled by the compacting of labour in the machine system, must, of course, also free up time. How is then possible to reconcile this emancipatory vision of the socio-technological process with the fact that the worker becomes more and more a mere abstraction of activity...”[8](Avanessian,Reis, 2017:16). Where does this fact leave the idea that the development of technology and the machine will reduce the workload? What is the future of the worker?

As Marx observes, capitalism continues to pretend that the theft of labour time is a necessary evil when machine production supposedly provides the material conditions necessary to blow that basis out of the water. Thus, he “distinguishes the machine system as a manifestation of the illusory autonomy of capital, which confronts the worker as an alien soul whose desires he must facilitate (...)” [9](Avanessian, Reis, 2017:16).

The quest for constant growth brings an increased workload along, and this requires new time and attention management techniques. Multitasking becomes another necessary value within this work and information society. At present, the exploitation and depersonalisation of work processes has increased considerably through the shift from mass production to flexible production. This has led to the disappearance of groups of workers as such. The worker is currently lost without the strength of the group. (Dyer-Witheford, 2015)

With the insertion of flexibility in work “the human being no longer has a direct connection with production, but a relationship mediated by an objective social apparatus, accumulated, ramified and constructed through communication, technological embodiment, replication and augmentation of knowledge and skills”[10] (Avanessian, Reis, 1017:15).

Thus, the worker is slowly evolving into one who is external to production,

8 [El vasto incremento de la productividad, posible gracias a la compactación del trabajo en el sistema maquinico, debe, claro, también liberar tiempo. ¿Como entonces reconciliar esta visión emancipadora del proceso sociotecnológico con el hecho de que el trabajador se convierte cada vez mas en una mera abstracción de actividad].

9 [Distingue el sistema de máquinas como manifestación de la autonomía ilusoria del capital, que enfrenta al trabajador como un alma ajena cuyos deseos debe facilitar(...)].

10 [El hombre no tiene ya una conexión directa con la producción, sino una relación mediada por un aparato social objetivo, acumulado, ramificado y construido a través de la comunicación, la encarnación tecnológica, la replicación y el incremento del conocimiento y las habilidades.].

flexible, isolated and precarious. (Dyer-Witheford, 2015)

Leaving aside the reduction of human labour as the ultimate goal, what is the interest of the development and implementation of technology in these areas?

The technologisation of labour is primarily aimed at reducing costs through automation (Dyer-Witheford, 2015:3). Robotisation could reduce entire sections of manual labour. In order to delve into the social effect that an “automation” of work can have, we have to slightly explore the social stratification first.

Class designates the division of the members of labour society according to the place they occupy in the system of production. These days, one could designate various fluid intermediate strata or “middle classes” and proletarians, and there are those who insist that class no longer exists or point to it as reductionist. Class analysis, however, is an “instrument required to recognise the inhuman, abstract and unearthly reductions forced onto people and planet by an economic system”(Dyer-Witheford, 2015:8). The polarity between workers and owners has been blurred, and we have moved to gradations of income and status, with the industrial city’s sense of solidarity itself dissipating. To keep denying the existence of class is to insist that the world be understood as a group of individual projects, but there is a difference between saying that something has mutated and saying that it has disappeared. Class “is a transfer of energy, time and consciousness- aka the extraction of surplus value- from one section of a species to another”(Dyer-Witheford, 2015:8).

One of the reasons for arguing that class no longer exists relies on the fact that technologies are increasingly more available. Personal computers and smartphones seem to have put the means of production in the hands of everybody, but this is a novelty for the working class. It has opened up new possibilities for acquiring education and knowledge and providing opportunities for upward mobility. Yet, Harry Braverman pointed to the loss of worker skills through the use of computerisation. In accordance with him, technological development became part of capitalist planning to disempower workers .

The origin of the word proletariat traces back to the poor individual who only had the ability to reproduce himself. According to Marx, the proletariat is the class that can live through work. Individuals are free to sell their labour power for a wage, but, as he clarified, they are also “free to starve if this sale fails”. Subjects have no control over the labour process or over what is produced.

Growing differences now emerge between the needs of capital and those of the proletariat. In a system focused on growth, automation and globalisation, the

dynamics of capitalism intensify; and we can observe an advance towards a working class immersed in the immaterial labour of networked production, with its respective communicative and affective dimensions.

As Dyer-Whiteford points out, we are faced with a contradiction in motion, which manifests itself in the following way: "(...)on the one hand, the encompassing of the global population by Networked supply chains and agile production systems, making labour available to capital on a planetary scale, and, on the other, as a drive towards the development of adept automata and algorithmic software that render such labour redundant." (Dyer-Whiteford, 2015:15). He raises the possibility that the working class has the task of putting itself out of work. But is that possible?

1.1.5 Heteromation and the human as a component

Within the area of labour, and focusing on the relationship between technology and the human being, it is worth mentioning the fact that there has been a change regarding the machine and its function: while it started off being an assistant, and even a substitute for the worker, it currently needs for the mediation and help of the human being. Hamid Ekbia and Bonnie Nardi introduce the term "heteromation" and contrast it with automation, in order to emphasise the difference between the automatic action of the machine and the action that requires several heterogeneous actors. "There has been a shift from technologies of automation, the aim of which was to disallow human intervention at nearly all points in the system, to technologies of "heteromation" that push critical tasks to end users as indispensable mediators."(Ekbia and Nardi, 2021:1).

Heteromated technology is technology that needs a human being as a mediator, thus filling the gaps formed by automation. This new role turns human beings into computer components. For less than the minimum wage, it also uses the labour of the precarious - unemployed, underemployed, or unemployable workers- by means of identifying these jobs under the label of micro-jobs. "They hide asymmetric labor relations in which benefits are significantly greater for enterprises". (Ekbia and Nardi, 2021:2). Within these heteromated systems are works in the area of video games, social media, certain crowdsourced applications, systems of microwork such as Mechanical Turk, personal health records, devices that require intermediation for some users (such as cellphones), and the quantified self inasmuch as insurance companies".

Ekbia and Nardi quote Simon bringing up the fact that he was aware that what determines the relationship between humans and technology are not be the technical capabilities, but the socio-economic system that implements these capabilities:

"... that computers and automation will contribute to a continuing, but not greatly

accelerated, rise in productivity, that full employment will be maintained in the face of that rise, and that mankind will not find life of production and consumption in a more automated world greatly different from what it has been in the past. [8]"

To examine the way labour is divided between human and machine, they define three phases: automation, augmentation, and heteromation. In the automation phase, the machine takes centre stage; in the augmentation stage, the machine comes to the aid of the human; and in the heteromation stage, it is the machine that asks for help.

Automation focuses on the idea of relegating tasks previously performed by humans to machines. Examples of this automation are the fantail to control the direction of a windmill, the Jacquard loom to automate weaving or the thermostat to control temperature. Yet, large-scale automation became possible with the arrival of digital computers in World War II. Dertouzos defines automation as "the process of replacing human tasks with machine functions". This process was expected to apply not only to manual work but also to cognitive tasks such as data processing, decision-making, organisational management, etc.

Augmentation is based on the idea of the amplification of intelligence. Instead of using machines solely in terms of their "physical power", the aim is to also make use of their "intellectual power" to amplify human capabilities; thereupon creating a machine-human symbiosis to create a successful collaboration.

Finally, heteromation involves, as expressed above, the use of the human as a mediator between machines. In today's economy, labour is cheaper than using automated systems. Making use of all the new information provided by electronic devices and through a global communication infrastructure, heteromised labour is available 24/7. The issue is no longer that certain tasks that are not machine-performable, but rather that it is not worth investing in the necessary research to develop them. That's the case of repetitive tasks such as image identification. Consequently, new forms of work emerge, such as Mechanical Turks, who perform microtasks for micro-payments. This makes workers start to consider themselves as part of the infrastructure. In addition, "profits are increased through low wage labor and avoidance of costs such as health and retirement benefits". (Ekbia and Nardi, 2021:8). These micro-workers have no social representation or regulation and are therefore at the mercy of employers. Capitalism pushes the employment relationship into new realms of objectification, where employees are now almost invisible.

This work based on a repetition of a task is considered easy, and as some workers stated, it helps them "kill time". Yet, as Irani and Silverman disclosed, if killing time is an affective reward, it is also an immiserated one, and the very idea of killing

time through repetitive action is itself a symptom of alienation or anxiety.

Another field where heteromation is inserted is in the social sphere. Heteromation also occurs through the Internet, where users become one of the largest unpaid labour forces in history. As Suarez-Villa pointed out, this is how society is used as a laboratory, and in this case, as a factory. This effect can be illustrated by analysing the correlation of the number of users with the profit creation of high-tech companies. “User data generated at almost no cost are overproduced, giving rise to vast amounts of wealth concentrated in the hands of proprietors of technology platforms”. Ekbiand and Nardi, 2021:12).

An example of this is found in The Completely Automated Public Turing Test(s) to Tell Computers and Humans Apart, or CAPTCHAs: “Google has embarked on a project called reCAPTCHA where this labor is used to match a scanned image of a word from a book (for Google Books’ digitisation initiative) or a photographed image of a street name or traffic sign (coming from the Street View imagery used on Google Maps)” (Gizmodo referenced by Ekbia and Nardi, 2021:8). It is in this way, and through the celebration of “participatory culture” or “peer production”, that labour relations are lowered and costs are reduced through free or low-cost labour.

Without any contribution from heteromated labour to social security, public services or unemployment benefits, these social protection resources are doomed to failure. This total deregulation of employment puts at risk the only public security there can possibly be. It is “necessary to consider the socioeconomic trajectory that unpaid labour or poorly paid microwork entails for our collective future”. (Ekbiand and Nardi, 2021:12).

In the quest for automation, it is the human being who has been left at the mercy of machines and the organisations that own them. Capitalism has found an effective instrument in digital technologies, and it is at this point that the importance of analysing the role of economic forces in technological creation lies.

1.1.6 The social acceleration

One of the characteristics of modernity that we have mentioned is the acceleration. The sociologist Harmut Rosa defines an existential acceleration, which does not affect things but life and is therefore not measurable (Rosa, 2016).

The question is, how much acceleration can humans endure? When train travelling came into being, studies showed that the speed humans could endure without getting sick was between 50-60 km/h. Researchers learned that, to avoid

dizziness, the key was not to look at the ground but at the horizon. This little anecdote perfectly defines the problem of this characteristic, the sight being focused not on the surroundings but on the infinite, on the horizon.

Modernisation is a process of dynamisation, and causes a change of temporal structures. This vital acceleration, according to Rosa, is similar to a hamster running on a wheel. It consists of going faster and faster without moving from one's place (Rosa, 2016).

Capitalism, despite being adapting, flexible and fast changing, has one value that does not change: constant growth. The value of the companies is quantified based on growth, which is compared to the previous year. This is what Rosa calls "dynamic stabilisation" (Rosa, 2016), keeping a structure through increase. The goal is not, like in the past, to escape necessity, but to keep a constant increase.

Culturally, there has been a shift . Formerly, capitalism included a promise of progress. You will not have to struggle. It didn't come true. Now, the same or bigger amount of productivity and dedication is required, but without people seeing the end of this effort and without noticing any major improvements in daily life. We have already looked at various technical factors that have been transformed with the objective of acceleration, but what are the psychological effects on the subjective? How does this constant acceleration affect the minds of the people involved in it?

1.1.7 Individual productivity and the violence of positivity

When time can't be accelerated, productivity will. A system that thrives on originality needs more from the individual. This means asking for an increasing psychological energy to be innovative. "From a pathological standpoint, the incipient twenty-first century is determined neither by bacteria nor by viruses, but by neurons. Neurological illnesses such as depression, attention deficit hyperactivity disorder (ADHD), borderline personality disorder (BPD), and burnout syndrome mark the landscape of pathology at the beginning of the ninety-first century." (Han, 2015: 1).

One of the ways in which this acceleration is assimilated by the human is through an excess of positivity, resulting from overproduction, overachievement or overcommunication. This overabundance produces reactions of exhaustion, fatigue and suffocation. The violence of positivity, as reported by the philosopher Byung-Chul Han, does not presuppose any enmity, the body does not identify it as an attack because it lacks negativity. Moreover, it is a force that is created from within, and that keeps the human being at war with himself. Examples of this are empty motivational phrases such as: *Nothing is impossible* or *If you work hard enough, you will succeed.*

These phrases, besides increasing the individuality of people, generate the value of self-demand, a form of alienation in which subjects believe that self-exploitation is something chosen by themselves. Thus, “the positivity of Can is much more efficient than the negativity of Should. (Han, 2015: 9).

There are two forms of power. The positive one is the power to do something. The negative one is the power not to do, to say NO. The latter differs from impotence, which is the inability to do something. “If one had only the power to do (something) and no power not to do, it would lead to fatal hyperactivity. If one had only the power to think (something), thinking would scatter among endless series of objects. It would be impossible to think back and reflect [Nachdenhen], for positive potency, the preponderance of positivity only permits anticipation and thinking ahead.” (Han, 2015:23).

It is this excess of positivity that drives humans into a constant state of hyperactivity, which does not allow for a pause, or any hesitation. This acceleration also affects thinking and creativity. Culture requires an environment in which deep attention is possible. This accelerated society does not allow for deep boredom, a necessary state for the creative process. According to Walter Benjamin, if sleep constitutes the peak of bodily relaxation, deep boredom corresponds to the peak of spiritual relaxation.

“Especially whatever is floating, inconspicuous, or fleeting reveals itself only to deep, contemplative attention. Likewise, it is only contemplative lingering that has access to phenomena that are long and slow.” (Han referencing Benjamin, 2015: 14)

As Arendt explained, labour society reduces humans to animal laborans. Accordingly, deep thought is reduced to a simple exercise in calculation. She considers that activity does not necessarily lead to freedom, and that hesitation is indispensable so that action does not decline to the level of labour. The machine is not capable of stopping, it lacks the capacity for hesitation. Arendt believes that modernity will end in a deadly passivity. However, against all odds, in today’s society of performance and activity, the human being is not passive but hyperactive and hyper-neurotic.

1.1.8 Effects of hyperproductivity: tiredness and anger

Let’s talk then about a profoundly human effect, tiredness. This performance machine has a body and a mind with limited energy. The tiredness of the performance society would provoke a lonely, isolating and dividing exhaustion. It would be a violent tiredness that destroys all community, all closeness.

Handke, in his Essay on Tiredness, differentiates between two types of tiredness. The tiredness of exhaustion incapacitates and individualises. It is a tiredness of the self which, moreover, is nourished by the guilt of the one who is not capable, by the feeling of being the only person who cannot constantly produce, who is not able to keep up with the vertiginous rhythm of the system. It isolates from the group, it individualises. We are now at the point where the achievement-subject is no longer able to be able (nicht mehr können kann). (Han, 2015: 10)

However, he distinguishes another type of tiredness which is more useful: eloquent tiredness. It is able to look and to reconcile, and it finds a deep cordiality that makes the conception of a community that does not need belonging or kinship possible. One exhausts and the other inspires. Consequently, two types of use of tired time are also differentiated, that of care, which remains connected to work, and that of play, which is a real break from it. The last type of tiredness may be one of the subjective resistances that could arise through this global hyperactivity.

Another effect of this hyperactivity that could cause a halt in this acceleration is rage. As Han comments, rage has a particular temporality. It constitutes an interruption, an arrest of the present. “The general distraction afflicting contemporary society does not allow the emphasis and energy of rage to arise. Rage is the capacity to interrupt a given state and make a new state begin.“(Han, 2015: 23). Rage is an energy of negativity, a negation in a positivist world. This positivisation disclosed above mitigates all negative feelings such as fear or sadness, turning the human into an autistic performance machine. Anger can be a useful tool to counteract this growing impassivity and emotional disconnection.

1.2 Isolated Subject

1.2.1 Individualization

To understand the increasing individualisation, it is necessary to explore the change in perception of the human being from being an element of a group to an isolated entity. As an animal, and in the face of a higher power such as nature, human beings imitate nature’s behaviour and group together in order to survive. This is how relational identity arises; it derives from the inability to conceive oneself outside the relationships in which one is inserted. This attitude has to do with lack of control and aims to make subjects feel secure.

Hernando connects the growth of individuality with the substitution of the myth for history. Myth legitimises the idea that the key to survival is the absence of change, and that security lies in repeating the way of life handed down from generation

to generation. It is a discourse that societies that did not have a high technological level used to promote; in such societies, change was considered a risk. During the Renaissance, when technological control reached a higher level, the understanding was that security depended on increasing change. Thereupon, change began to be valued as a means for survival. Whereas in myth the surviving groups have been chosen to survive, within history they are seen as the ones who have most and best developed the traits valued in the present (technology, power, individuality, reason). Humans then begin to see their own actions as what moves them forward. "Myth is based on a communitarian and relational conception of identity, and history on an individualised one"[11] (Hernando 2018:81).

Individuality, therefore, is a trait of someone who possesses knowledge, and thus power over the world. By controlling some phenomenon of nature, one objectifies and rationalises the world, establishing an emotional distance. In today's society, where the division of roles and the specialisation of work causes people to acquire different levels of knowledge and control, individuals begin to feel different from each other, and individualisation increases. It is this distance that creates an "I" where the totality of who we are resides. "As humans became more empowered, they took power away from god, considering themselves more and more the architects of their own destiny, until by the seventeenth century they began to see themselves as individuals, isolated and self-sufficient instances of identity. It was then that the term individual became aligned with the term person" [12](Hernando referencing Mauss, 1991; Elias, 1990 and Weintraub, 1993, 2018 : 98). Trust in destiny is now placed in initiative and personal work.

An increase in socio-economic complexity then carries with it an emotional distance, a dissociation between reason and emotion. Identity in modernity rests on two pillars, the objectification of the world through technological control; and individuality, with its reflexive counterpart, where a core of repressed emotions is concentrated. By telling history from the values of rationalisation and individuality, the importance of emotional dynamics is denied. "Understanding the rational mechanics of the world empowers, but emotionally isolates, leaving a cold, metallic taste" [13](Hernando 2018:107).

Moreover, that individuality connected to the quest for security through

11 [El mito se basa en una concepción comunitaria y relacional de la identidad, y la historia en una individualizada].

12 [A medida que los hombres se empoderaban, iban quitándole el poder a dios, considerándose cada vez más artífices de su propio destino, hasta que al llegar al siglo XVII comenzaron a si mismos como individuos, instancias de identidad aisladas y autosuficientes. Fue entonces cuando se identifico el término individuo con el de persona].

13 [Comprender las mecánicas racionales del mundo empodera, pero emocionalmente aísla, dejando un frio y metálico sabor]

change, as we have explained above, brings a constant degree of anxiety along: “One never ends up becoming, since existence is defined by change” [14](Hernando, 2018:106). A society that values change demands that subjects innovate, transform, advance, generate new ideas and technologies etc.

Hernando analyses in her book *La fantasía de la individualidad* the subordination of women as an effect of the development of an apparently individualistic society. The researcher argues that any struggle for equality that focuses exclusively on discussing reasons without considering the need to reclaim the value of emotions will not be effective. She argues that the dominant social discourse denies the existence of other dimensions of reality and sustains an order that pretends it can do without emotion in its security mechanisms (Hernando, 2018:108).

It is this point that we are interested in stressing: we claim the need to recover dimensions that are removed from a system that insists on telling a single and restricted history, as well as to defend the possibility that another form of social order is possible, one that revalues emotion, group identity and empathy, not as features of old-fashioned societies but as necessities for an increasingly isolated and lost subject.

1.2.2 Dehumanisation

The exercise of power “requires objectifying to a certain extent those over whom it is exercised, assuming a subject position in a relationship in which others are objects of one’s own desires”[15] (Hernando 2018 : 95). That is, it demands that we see people as fungible, interchangeable with others of their kind.

Dehumanisation is another characteristic that feeds on the constant use of technology. This effect reduces empathy for the other, eliminates the feeling of dealing with an equal. Datification, for example, would increase this effect. Datification is the process by which a phenomenon is captured in a quantified format for tabulation and analysis. It aids instrumental efficiency and standardisation and in some areas it is necessary and very useful, but to apply it to all areas would generate a reductionist view of reality. The reduction of humans to machines is aimed at the pursuit of efficiency, regularity and conformity.

Dehumanisation involves denying a person “identity” – a perception of the person “as an individual, independent and distinguishable form others, capable

14 [Nunca se acaba de llegar ser, ya que el cambio define la existencia]

15 [Exige cosificar en cierta medida a aquello/s sobre lo/s que se ejerce, asumiendo una posición de sujeto en una relación en que los otros son objetos de los propios deseos]

of making choices" – and "community"- a perception of the others as "part of an interconnected network of individuals who care for each other". (Haslam referencing Kelman, 2006 : 254).

To understand dehumanisation requires an insight of the concept of humanity as a characteristic. What do we consider to constitute us as human? Nick Haslam defines two distinct senses of humanity, where dehumanisation occurs when its characteristics are denied. He distinguishes between uniquely human and human nature.

Uniquely human (UH) defines the boundary that separates humans from animals, that is, those characteristics that are typically or centrally human. Among the attributes that are considered uniquely human are language, higher order cognition, and refined emotion. These include traits that imply openness to experience such as imagination, intelligence and culture, and traits that allude to "conscientiousness" such as industriousness, inhibition and self-control. It is all these traits that develop cognitive refinement, socialisation and moral sensitivity. All these characteristics are inherently linked to the creation of a culture.

Human nature (HN), however, is formed by those characteristics that link human beings to nature and to their biological disposition. "HN characteristics should be seen as deeply rooted aspects of persons: parts of their unchanging and inherent nature". (Haslam, 2006 : 256). While the characteristics of the uniquely human (UH) are acquired, those of human nature (HN) are fundamental, inherent and natural.

It is in denying either of these types of humanity that the dehumanisation of the subject takes place. When UH characteristics are denied, the subject is seen as uncivilised, immature and backward. If the difference between human and animal is not perceived, humans are lowered to the level of the animal. When NH is denied, others are seen as lacking in emotionality, warmth, cognitive openness, individual agency and depth. They are seen as inert and cold. "Denying them cognitive openness will give them the appearance of rigidity, and denying them individual agency represents them as interchangeable (fungible) and passive, their behaviour caused rather than propelled by personal will." (Haslam, 2006: 258). In other words, the subject is identified as machinic, automaton-like. The former conceives the person as sub-human, while the latter would be non-human. The first form of dehumanisation causes contempt and disgust, and the second induces emotional distance.

The increasing use of technology gives rise to this latter dehumanisation, the feeling that the person is an inert, emotionless object, and therefore not worthy of empathetic treatment. It facilitates indifference towards the other. This dehumanisation also eliminates intergroup dynamics; it promotes a distance, feeds on asocial and

non-existent relationships and makes people ignore the existence of others as social interlocutors. It aids in “standardisation, instrumental efficiency, impersonal technique, causal determinism and enforced passivity” (Haslam, 2006 : 260). Dehumanisation occurs in the areas of medicine and technology.

When technology is inserted into the area of work -as it is being done nowadays, as relationships are made through technology- the worker also begins to suffer from this dehumanisation. “If others are understood as skin to objects or artifacts, “which have no emotions or rights because they have no minds” (Haslam referencing Mithen), then they are free to be used instrumentally” (Haslam 2006: 261).

Throughout this chapter we have explored the role of the human as a productive being, as a component of the production chain, and its relationship with machines and technology in terms of labour. We have also discussed the dehumanising and individualistic effects of the insertion of technology in some areas. It is considered that these concepts are necessary to dismantle the idea of technology as an objective and saving tool, making it clear that, in the process of its creation, interests focused on corporate objectives that do not look after society as a whole are inserted. The aim of this chapter is not to demonise technology but to look at it from a realistic and critical point of view. The following chapter will show works that understand technology for what it is, a tool that is used for a variety of interests. These works appropriate it and use it also for their own interests.

2. RESISTING STRATEGIES IN ART

The following part of this research makes use of artistic references in order to identify and illustrate some of the resistances put into practice against the alienations analysed in the previous chapter. These strategies focus on resisting or criticising technology designed with corporatist interests in mind. It is a set of proposals made by artists from diverse backgrounds who have encountered worrying applications from their own disciplines, and have thereupon come up with different ways of designing new technologies. In this way, they open up the perspective of diverse futures that do not seek a single objective

2.1 Opening the perspective

2.1.1 Deactivation - *Breaking the machine*

The first strategy that comes to one's mind is to disable or deactivate a machine, that is, to force it to stop in order to escape from it. It is the most direct strategy to end a problem, getting rid of its source.

From the perspective of this work, the strategy of deactivation consists of using one technology against another, employing the opportunities provided by acquired technical knowledge to disable and break devices. It is a strategy that requires an understanding of the technology to be disabled, a struggle on a shared terrain.

Critically, one could wonder about the use of investing time in something that does not contribute, and rather suppresses. The destruction of devices and machines, though, is an equally valid strategy, a way of expressing that one does not agree with the conditions embedded in the technology. If devices have functions that have not been explicitly accepted and that violate peoples' rights, users should be entitled to protect themselves and express their disagreement.

Pointing out flaws and gaps in designs risks identifying problems that can be corrected in subsequent products. It is in this way that companies thrive on the creativity of resistance. One of the works that exemplifies this approach is that of Bjorn Karmann and Tore Knudsen.

Project Alias (2018) is a "parasite" that latches onto smart home devices and takes them over. Using speakers and microphones, it is able to act as a mediator between the user and the device. The user can use an app to indicate the necessary words to activate it, and when it is not in use, Alias plays a constant low noise into the assistant's microphone to make sure it is not listening. It aims to delegate more power

Figure 1. Project Alias (2018), Bjorn Karmann and Tore Knudsen

from the designers to the products' end users.

This project is not intended as such to destroy, but to obstruct or disable as long as the device is not needed. It is a counterproductive parasite to the function of the main device. It is also a way not only to reclaim the right to privacy and intimacy, but also to reclaim ownership of unknowingly extracted data.

2.1.2 Media archaeology - *The reunion of the past and the future*

This strategy focuses on rescuing past, abandoned or neglected technologies in order to give them a new use or to open up past futures and possibilities that could have happened. Through this research, past utopias and imaginaries are explored by countering them with current reality, using the energy of what could not be. Time is opened up so that the past and the future can communicate.

Artists working with media archaeology "seek hope for change in the past, rather than in the utopia to come, identifying what could have been, the future that inhabited the past, the unfulfilled possibilities. It is about working with the latent energies, the frustrated dreams, the utopias of the past, a kind of archaeology of the past that never happened"[1] (Hernandez, 2020:24). It is about re-asking the questions that others have already answered for us.

1 [Buscan la esperanza del cambio en el pasado, en lugar de en la utopía por venir, identificando lo que pudo haber sido, el futuro que habitó el pasado, las posibilidades no cumplidas. Se trata de un trabajo con las energías latentes, los sueños frustrados, las utopías del pasado, una suerte de arqueología del pasado que nunca sucedió].

As Hernandez points out, in a world without a future, the gaze becomes nostalgic, and looks to the past for that dreamed-of future and those unfulfilled possibilities. This strategy is used with corporate interests when it assimilates the rhetoric of obsolescence and develops a trade in nostalgia. The difficulty here lies in identifying which uses of obsolescence are productive and transformative, and which fall into the realm of retro. "Some of these practices show a naïve, nostalgic and sentimental celebration, without actively relating this past to our political present".[2](Ernst van Alphen referenced by Hernandez , 2020:49). It would be a matter, as Hernandez says, of overcoming the blind belief in the past and becoming aware that this is where the power for transformation truly lies.

"Obsolete objects showed better than anything else the darkening of the shining dream of the commodity and the unfulfilment of capitalism's promise of happiness"[3](Walter Benjamin referenced by Hernandez, 2020:44).

Using this tactic, it is interesting to mention the project *BITTERCOIN, the worst miner ever (2016)* by Martín Nadal and César Escudero Andaluz. In this work, an old calculator is hacked to be used as a miner that validates pending bitcoin transactions on the blockchain. As it implements the operation of the most basic computer, it needs an eternal time to produce bitcoins. The operations carried out are recorded on the screen and then on the printed paper.

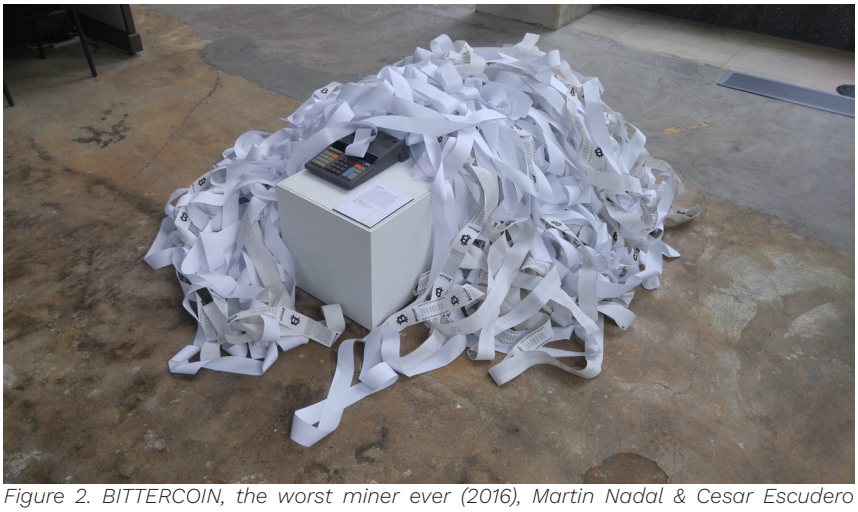

Figure 2. BITTERCOIN, the worst miner ever (2016), Martin Nadal & Cesar Escudero Andaluz

The use of an old mining device makes it possible to understand these processes by slowing down the operation and showing the amount of calculations and resources required in a more visual way. It demonstrates in a physical way the expense of these

2 [Algunas de estas practicas muestran una celebración ingenua, nostálgica y sentimental, sin relacionar activamente este pasado con nuestro presente político].

3 [Los objetos obsoletos mostraban mejor que ninguna otra cosa el oscurecimiento del sueño brillante de la mercancía y el incumplimiento de la promesa de felicidad del capitalismo].

operations, extracting them from the digital world. It also provokes reflection on the power of a small device like this calculator against something as large as mining farms.

2.1.3 Speculative design - *The creation of the future*

Another way to claim control over the creation of the future would be through speculative design. Speculative design set out as a leap into the future by imagining probable realities and creating tools for future dilemmas. A creation from the position of the future that focuses not only on creating objects but ideas. It puts into practice the accelerationist mentality we mentioned in the first chapter, embracing the present without resisting it and speculating future solutions. Instead of going after the problem, it gets ahead of it.

Speculative design is designing with a high component of uncertainty in order to unsettle our relationship with the present. By taking us out of the system of habitual consumption, it can transform our consciousness from consumer citizens to visionary citizens. “We are interested in liberating this story making (not storytelling) potential, this dream materializing ability, from purely commercial applications and redirecting it toward more social ends that address the citizen rather than the consumer or perhaps both at the same time.” (Dunne, Raby, 2013 :88)

They propose changing the focus of design, for it to be no longer in the current world but rather on a possible future word. For doing so, artists put the limit on scientific possibility, stretching everything else (ethics, psychology, behaviour, economics, and so on) to the breaking point.

In practising speculation, however, there is a danger of considering fiction as unreal. “The idea that something is not “real,” when real means it is available in shops, is not good. Yet designers participate in the generation and maintenance of all sorts of fictions (...) (Dunne, Raby, 2013 :88). Design is so closely linked to the product, and in the same way, to the industry and its dreams, that it forgets to dream in other ways. Therefore, design needs to separate itself from industry in order to find other possibilities.

One of the most interesting examples of this approach I have found is Manuel Beltrán’s *Data Workers Union (2017)*. With this project, Beltrán proposes a union to “demand an end to the limitless exploitation of our production of data and to fight organisations seeking to pursue data labour rights as citizens of a datafied society.” Taking into account that humans are nowadays constant producers of data, he defines all citizens as unrecognised data workers and proposes to regain control of what is

produced. His project includes collective ownership of data, the creation of a data tax and basic data income, public infrastructure for digital services such as social networks, etc.

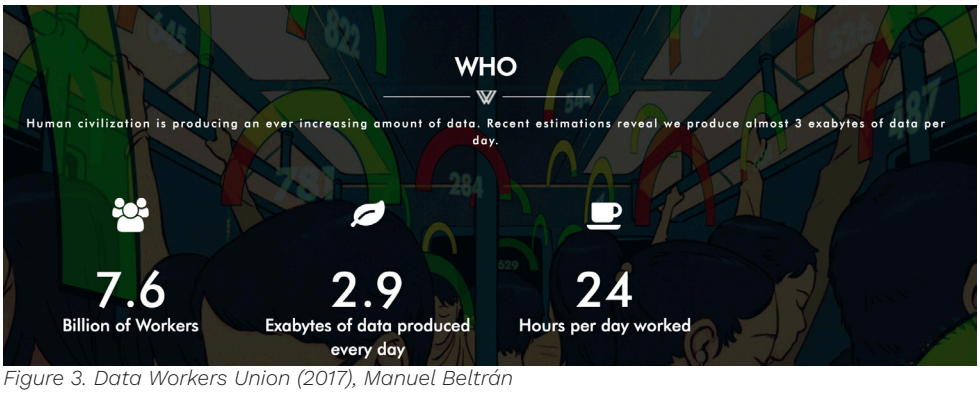

Figure 3. Data Workers Union (2017), Manuel Beltrán

This project illustrates the value of future fiction, creating a tool that can become very useful. The reinterpretation of data as a public resource can trigger that its use and exploitation are reclaimed with public and social interests in mind. Understanding data as an exercise of global creation and currently free of charge, which is exploited with commercial interests and only brings benefits to a few can lead to the creation of a legal framework around the use of data and the social responsibilities attached to them.

2.1.4 Dystopia - *Embracing Alienation*

Applying a dystopian strategy is to embrace systems that increase alienation in order to precipitate system collapse. It is about drawing on the most dehumanising and cruel features of some technologies and exploiting them in the interest of provoking a reaction. “It fast forwards technologies being developed today by technology companies to the point at which the dreams behind each technology turn into nightmares with extremely unpleasant human consequences” (Dunne, Raby, 2013:74)

One of the works that exemplifies this strategy is Silvio Lorusso’s *Shoudn’t you be working (2016)*. This work is based on the StayFocusd application, which detects when the user uses social networks or other procrastination pages and displays this message when leaving them. Lorusso takes this message off the computer and turns it into a sticker to put on any place of leisure, thus spreading lazy-saming and productivity anxiety. Shouldn’t you be working reminds people to stay productive, and brings to mind that any time spent on something that doesn’t produce is wasted time.

This work marks that fine line between humour and dystopia, because one never knows who will take the message seriously, who will be affected by it. It makes one

think about where the line is drawn, and brings to the forefront values assimilated by individuals in pursuit of increasing productivity, as useful as guilt and self-exploitation.

Figure 4. Shoudn't you be working (2016), Silvio Lorusso

2.1.5 Time as material – *Contradicting singular times*

Time is a concept to be mentioned in this matter, even if it is not a central one. We have previously referred to the effect of acceleration on productive humans, on the use and awareness of it. This "material" is constantly used by visual artists.

Several artists, by moulding it, try to propose independent times in the face of a capitalised time. They try to "question the hegemonic temporality of the present, disfiguring and re-elaborating the experience of this linear, standardised and <<monochronic>> time of modernity" [4](Hernández, 2020:18). By slowing it down, an attempt is made to achieve a dilated, tangible and habitable time, in order to enact an awareness about the temporal experience.

"Stopped works, floating, in slow motion, in fast motion..., denaturalised movements, repetitions, interruptions, temporal jumps, discontinuities, anachronisms, asynchronies, desynchronisation... "[5]*(Hernández, 2020:18).*

When we talk about technology, we talk about possibilities, about utopias, about the future... These are topics intertwined with time, and deal with where we

4 [Cuestionar la temporalidad hegemónica del presente, desfigurando, y reelaborando la experiencia de este tiempo lineal, estandarizado y <<monocrónico>> de la modernidad].

5 [Obras detenidas, que flotan, a cámara lenta, a cámara rápida..., movimientos desnaturalizados, repeticiones, interrupciones, saltos temporales, discontinuidades, anacronismos, asincronías, desincronizaciones].

come from and where we are going. Quoting Antonio Negri, who points out that the rhythm of the assembly line and the factory have possessed the modern experience, to understand time as a working material is to understand that through its opening and alteration, what one creates is the possibility of breaking the global rhythms of circulation, that is, the power to subvert the temporal experience of power. Thus, "one begins to think of historical time as a multiplicity of lines, traditions and temporal experiences that no longer have a single centre or a single direction" [6](Hernández, 2020:25).

2.2 Focusing on productivity and labour

Looking at the concepts researched in the first chapter, we can also find some artworks requestioning labour and the effect of the insertion of new technologies in the work environment.

Figure 5. LAUREN (2019), Lauren McCarthy

Several works deal with heteromation, which is, as we have explained above, the evolution of the work of the human as a mediator between machines. In Lauren McCarthy's performance *LAUREN (2019)*, the artist replaces Alexa, the smart home device, and operates as a human version of her. With the help of cameras and microphones and other smart devices, a space is set up that can be controlled by the artist, and thus she watches over a person's home for 24 hours. According to the artist, her humanity makes it easier to anticipate the wishes of the person she is "looking after". LAUREN is a reflection on the access we give devices to our privacy and personal information, but it also makes us think about the role of the human in the future of automation. Similarly, in *SOMEONE (2019)* McCarthy opens up this experience to the public, leaving the control of four people's home in the hands of

6 [Se empieza a pensar el tiempo histórico como una multiplicidad de líneas, tradiciones y experiencias temporales que ya no tienen un centro único ni una sola dirección].

the exhibition visitors. In these two works, I believe, the consciousness of presence is also investigated. The feeling of being watched shifts from knowing that a device is watching to knowing that it is a human being who is watching, and makes one wonder how aware we are of that surveillance.

In another way, Silvio Lorusso and Sebastian Schmieg manage to illustrate the free heteromation work of one person. In *Five Years of Captured Captchas (2017)* they create five leporello books that span 90 metres and contain five years of Captchas they have solved. Thus, they demonstrate the amount of micro-work carried out in exchange for no benefit to the "worker". It also demonstrates how little awareness we have of our own production on the web and how useful it is for companies to break jobs down into tiny actions that seem to require no effort at all. Through this collaboration or exploitation, books are digitised, images are analysed, places are identified...

Figure 6. Five Years of Captured Captchas (2017), Silvio Lorusso & Sebastian Schmieg

Finally, I would like to mention two works focused, this time, on the use of the chatbot as an artistic element. The first artistic work to use this technology was Lynn Hershman's *Agent Ruby (1998-2002)*. This artificial intelligence agent learned from the questions asked, remembered information and changed its mood according to the web traffic. This work is a precursor to the use of artificial intelligence in art. It may seem a simple approach from our time, but we must appreciate the fact that since then there has been an understanding of the importance that AI would have today.

I would also like to point out Jonas Lund's installation *Talk to me (2017)*. According to the description, the piece is an intelligent conversational chatbot that seeks to imitate the artist. The chatbot answers using the synthesised voice of the creator. In this way, the user can have a conversation with the artist without him being present. In reality, it is actually the artist who is impersonating a chatbot. When

someone uses the website, he is alerted by a message and answers it himself. Users, however, are often convinced that they are talking to a programme, as the answers are repetitive and simple. What is interesting about this work is the path of imitation. It is a human imitating a bot, imitating a human. “It’s thanks to this endless, flexible play on identity that Talk to Me becomes an apt metaphor of the human-software continuum that we experience online on a daily basis, with all its consequences and biases: the end of truth, the exploitation of AI to fake human communication, and the exploitation of humans to fake automation.” (Domenico Quaranta, 2019).

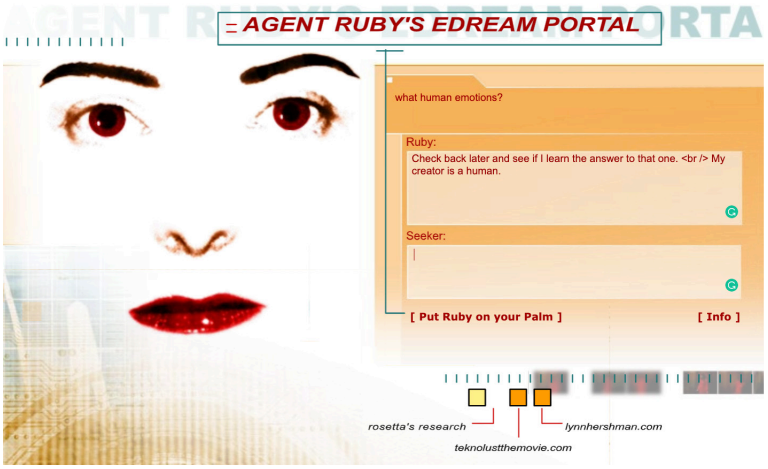

Figure 7. Agent Ruby (1998-2002) , Lynn Hershman

3. (PHC) Painfully Human Chatbot

3.1 Chatbot as media

3.1.1 Definition and etymology

A chatbot is an application created to simulate human conversations, and is usually constantly available to the user. The aim of this technology is to answer questions quickly and efficiently, as well as to gather information. The construction of this application is based on predicting the questions that the bot will be asked, and preparing the necessary answers. By means of pre-programmed answers or Artificial Intelligence, human mediation is usually not necessary, and so companies often can save time and money. It is commonly used to automate customer services.

The word bot or robot was first coined by the Czech author Karel Capek (Rossums`s Universal Robots, 1923), and it comes “from robotnik “forced worker”, from robota “forced labour, compulsory service, drudgery”(...)”. Thus, in its etymology it is implied that the robot will be a servant of the human, primarily focused on helping and saving the human workforce. The term ChatterBot was introduced by Michael Mauldin, the creator of the first Verbot in 1994 to refer to this type of conversational programme.

There are two main types of chatbot.

One is the rules-based chatbot. These are the simplest and most basic chatbots. They carry on the conversation with If/then logic and the creator maps out the bot’s conversations using logical next steps and clear call-to-action buttons.

The second type of chatbot is AI-driven. They are more dynamic and do not need to follow a complete path. Here we come across two types of AI chatbot: Natural Language chatbot and machine learning chatbot. The use of natural language processing helps machines to understand human language. Thus, you can have a conversation instead of having to navigate through menus or buttons. It’s a more personalised, human-like experience. Machine learning chatbots are optimised to learn about the visitor, retain information about them and predict the next steps in a conversation.

3.1.2 Measuring humanity in machines

Throughout the development of chatbots, there have been two ways to measure their humanity.

In 1950 Alan Turing wrote his renowned article “Computer Machinery and Intelligence” questioning whether machines can think. He came up with what is currently known as the Turing test, a test to measure a machine’s ability to exhibit a human-like intelligent behavior. The test consisted of a natural language conversation between a human and a machine designed to give human-like responses. The conversation was limited to a text-only medium. In the event that the evaluator could not accurately distinguish between the human and the machine (originally the machine should convince an evaluator, after 5 minutes of conversation), the machine would pass the test.

The Loebner prize, an annual competition for artificial intelligence awarding the most human-like computer programs, was launched in 1990. The programs must pass a standard Turing test. The Loebner Prize has been criticized for being a publicity stunt.

Measuring the humanity of programmes is then based on tricking a human user. These tests neither measure comprehension, creativity, improvisation and adaptation as human traits. They are for now very limited tests that do not even define what is considered “humanity”.

3.1.3 Brief history of chatbots

The ELIZA program, applying the DOCTOR script created by Joseph Weizenbaum to mimic (at first parodically) interactions with a psychoanalyst, was the first program to apparently pass the Turing test. It was created to demonstrate the superficiality of the conversation between human and machine, and consisted of examining the words written by the user, finding keywords and including them in the answer given, reflecting back the patient’s statements. If a keyword was not detected, a generic response was returned.

Although some users believed that ELIZA was able to understand the conversation, this work demonstrated the ease of faking the understanding of a conversation just by repeating the given information, as well as the possibility of imbuing these programs with pretended consciousness. The illusion of intelligence worked best, however, if the conversation was limited to talking about oneself and one’s own life.

In 1972, Kenneth Colby created PARRY, a program that attempted to mimic the behavior of a person with paranoid schizophrenia, based on conceptualisations and beliefs of the time. When psychiatrists were asked which of the patients was human and which was a computer program, they were able to correctly identify them only 48

percent of the time.

After these first attempts came Jabberwacky (1988), designed to converse with users; DR. SBAITSO (1992), aiming to make it to act as a psychologist; and A.L.I.C.E (1995), an improved ELIZA.

So far, this tests were focused on human imitation and substitution, on ways to "fool" an external user, discovering the limits of human-machine conversation. From now on, the application of these technologies starts to be focused on utility and service.

SmarterChild (2001) was released in AOL and Msn Messenger platforms as a digital helper and could be considered the precursor of Siri. By establishing connections with databases, SmarterChild could give real time information and chatbots started to have some utility for the end user.

From 2010 onwards, modern digital assistants appeared. Starting off with Siri (2010), and including the subsequently developed Google now (2012), Alexa (2015) and Cortana (2015) bots started to include options such as voice command interaction, music playback, scheduling events and reminders, performing phone actions, navigating, etc. These digital assistants use natural processing (NLP) to understand the contextual nuances of the language.

In 2016, Facebook's Messenger platform allowed developers to create bots that interacted with FB users, and has since become the biggest chatbot platform. This allows customers to interact with brands online, to get 24/7 customer support, and it has enabled a new approach to online marketing.

The use of chatbots shifts from personal user support to global customer support. The value of customer service automation begins to be profitable, and platforms emerge for creating chatbots focused on business.

I would like to conclude this summary by mentioning CLIPPY, the Microsoft Office assistant which, although not considered a chatbot as such, was probably the first example that many of us had of a virtual assistant that was not very useful.

3.2. PHC (Painfully human chatbot)

3.2.1 Origin/Motivation

The origin of this work specifically stems from research carried out in a subject on Sustainable IT. In this module, I started to explore sustainability in artificial intelligence, looking at the environmental costs of training an AI, and making proposals to apply this technology to sustainability problems. Through this research I also started to look at people and companies behind various organisations focused on developing artificial intelligence and I realised that all of them, despite claiming to be non-profit organisations, were founded by private companies. Considering that AI is nowadays shown as a future solution to many current problems, I wondered how it could be allowed that this tool is in the hands of private interests only.

Another concern was taken into account during the Covid-19 situation, when by shifting to remote work due to quarantine, many friends had their working time extended and were required to be constantly available on the grounds of knowing that they were at home. In addition, various control strategies were introduced in order to ensure that during working hours they remained in front of the computer, either through applications that detected the movement of the mouse or by requiring constant connection to some platform.

To talk about the creation of technology is to talk about the creation of the future. These two observations made me reflect on investment in the development of new technologies, and on the thought that, if we want to solve common and social problems through technology, investment from public funds will be necessary, in addition to increasing control over the use of public data by private companies. If our aim is to use technology as a helping tool for human beings, its development cannot be solely in the hands of private companies whose aim is to increase their profits. These interests will only put the creation of corporate wealth above the overall utility of technology.

With this reflection in mind, I started to wonder about ways to transfer this concern to an artistic work where I could handle a quite serious subject, while I attempted not to fall into the sadness or impotence of my realisation. I initially started off with two ideas, one focused on remote work and the other on technology made only with corporate interest. The first idea was to make a manual on how to subvert some of the work control technologies implemented in remote work. Because I considered that this work would require more time than I had at the time, I decided to focus on humanising a totally corporatist technology, the chatbot.

3.2.2 Why a chatbot?

Technology for enterprises

The chatbot is a tool mainly used by companies and enterprises. It mimics a worker who is trained to provide simple solutions or to gather information, saving the expense of having a human employee. It is an anonymous, omnipresent and compliant operator, a simulation of the human being, but denaturalised. It seeks availability, speed and efficiency, and on top of that it aims to reduce the cost of customer service. It is the automation of work previously carried out by humans. It also intends to organically simulate a human conversation in order to make it more pleasant and real for users.

The funny thing about these applications is that the average person doesn't usually seek out for this technology. It is a boring and tedious one, and not expected to help in any way; yet, it is a technology that is heavily invested in. There is a growing interest in the implementation of artificial intelligence and Natural Language Processing to these tools. Investment in these applications has a clear objective: to save the expense of human agents, to cover multiple tasks at once and to achieve constant availability. To remove humanity from this type of work through "semi-human" technology.

I was interested in working with this application because it would probably never be employed by individuals and home users, its function being totally focused on companies and businesses; not only because of its functionality, but also because of the pricing. Indeed, while looking at various platforms to create this piece, I realised that the cost was exorbitant. When Ifirst started to work on it, I thought it would be easy to find a simple platform to create my "simple" chatbot, but in the course of the research it became clear that this was a very expensive technology, and that only a few sites offered this service for free.

Pretended humanity

The chatbot is a simulation of human interaction, but it at once refuses to complete the transformation. It is, in fact, a technology that uses human expression to create a friendly and accommodating agent. However, in the construction of this technology, other eminently human characteristics are consciously ignored. It is an available, omnipresent operator, unaffected by any of the physiological limitations human beings do have.

This pretended humanity is an appropriate means to delve into many of the concerns that this work wants to raise. It clearly illustrates the perfect worker of the

future, an entity that shows a “human” but constant, productive and silent character; a human worker without any of the human demands and needs.

Customer service is an area where understanding and adapting the language of different styles and levels is key, and resolution and rapid adaptation are likewise important. Problem solving requires a kind of improvisation that is difficult to predict or programme, and this is where the complication of chatbot automation lies, and so does the interest in developing artificial intelligence to mimic this function.

Customer service, if it is to be useful, still relies on human elements. In all applications there is an option to connect to a human agent if the chatbot is not helping. Right now this work is based on heteromation, as it still requires human mediation.

Annoyance

Another reason why this type of application was chosen is because of the feeling of annoyance it provokes. The chatbot itself is a tedious technology, which users often avoid, predicting that it probably won’t help them at all.

This technology is for now very limited. Classic chatbots have a construction based on If/then logic. It predicts the steps that will take place in a conversation, and prepares the necessary responses for them. However, as we said, the development of a human conversation is extremely difficult to predict, and so are the expressions and ways of speaking of different people. This creates problems of understanding and detection, and so the user often gets tired and drops out of the conversation. Interacting with these bots is often tiring, hopeless and useless.

Figure 8. Computer with personality (2000), Star Trek

I chose to work with this technology because of the three features I just mentioned. I was interested in learning about how these applications work, and also in using something primarily focused on business use. I likewise wanted to contradict this pretended humanity of a worker, trying to express my dissatisfaction with the growing perception that, subjectively, we humans are adapting to production rates beyond our physiological capabilities. Finally, I wanted to explore discomfort and humour as vehicles to talk about complicated issues that sometimes risk seeming hopeless.

3.2.3 PHC

Painfully Human Chatbot is a piece that deals with the demand or pressure to be constantly available. The aim, beyond this particular effect, is to provoke a reflection on the human assimilation of mechanical processes and capabilities, to ask whether the constant and increasing use of technology has created new values in our society today, values that were previously demanded of machines. In this way and as a contrast, the project presents a Chatbot that also assimilates human attitudes. Although the main function of this application is to be constantly available, PHC will try to keep a work schedule, and in its code it will implant tiredness and laziness. This work proposes an absurd exercise of contrast, to somehow resist the increasing mechanization of people.

Figure 9. PHC 3D ilustration (2021)

Society is beginning to measure its value through the level of productivity, self-utility, and constant adaptation to change. Just as the human is adapting to machine rhythms, the machine is embracing human characteristics. The lines between machine and human are becoming blurred, but there are inescapable factors that we need to

be aware of.

Through an absurd exercise, this project programmes a chatbot to be limited by fatigue and time consciousness. Contrary to one of the main functions of this technology, constant availability, it makes interaction impossible by subjecting it to human behaviour. This chatbot changes the quality of its service depending on the time and day. It also includes weekend awareness in its scheduling. This is an attempt to imbue the machine with humanity, but with those features that are not very useful for work.

Development

The development of this chatbot started in March 2021. First I started exploring different software and platforms where I could develop it and calculated the time I would need to learn how to use them properly. I started this work without knowing anything about chatbot development and my knowledge of programming was not very advanced either.

I started this work with the perception that what I was proposing would not be complex to create. I was aware that there were already many platforms available to develop this kind of application, and I thought that they would have options to customise some functions.

The first application that I thought could serve my purpose was Rasa Open Source. It had a page full of documentation, an active forum and several tutorials to learn. Rasa is an open-source machine learning framework for automated conversation and it seemed like an easy way to understand and develop this project. I worked on this from March to May and then some issues that I wasn't able to resolve arose.

From May to July, I tried to solve the issues on this platform because I had spent a lot of time learning how to use it, but in the end, I had to look for other options because I reached a point where there was no progress. That's when I started to explore other platforms such as Botpress, Microsoft Azure or Dialogflow.

I finally decided on IBM Watson Assistant, which allowed a test option and had many facilities for integrating the chatbot into a web page. From then on, I went back to the documentation and programming forums to find out how to modify the responses depending on the time and day. Having worked on the previous platform helped me to learn how this one works more easily. The development of this application on this platform was done from July to August. I managed to condition the answers, and from then on I started to imagine what kind of questions and phrases a user could say to

such a chatbot and to accordingly prepare answers.

Building the chatbot

I will now briefly disclose how these programmes work, in order to be able to explain how the PHC objectives have been achieved, as well as to pinpoint the obstacles that have arisen during the process.

There are three central concepts in all these applications: the intents (the intention detected from the sentence typed by the user), the utterances (the prepared answers to the predicted questions) and the entities, slots and contexts (the memory and detected data that can condition the chatbot's operation and conversation).

The intents are the expressions and text examples that are used to train the model for it to identify the intention of the question of the user and to label it correctly. For the question Are you a bot? being identified, it will me necessary to write several examples of how this question can be formulated:

Figure 10. Intent examples

With these options, the programme will even detect sentences that resemble the formulation of those that have been written. Usually several intents are identified, but the application makes its decision depending on the percentage of matches.

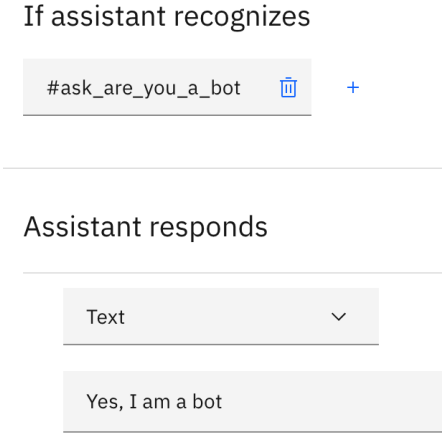

Figure 11. Response example

The utterances or responses are the answers that are sent once the intent is identified. These messages are written by the creator of the chatbot. The answers can be conditioned by context or entities.

Entities are all the information that is detected in the sentences given by the user and that is of interest to the operation of the chatbot. For example, if we were designing a chatbot to reserve tables in a restaurant, we would be interested in knowing how many people would be dining at the table. The chatbot would be trained to detect the numbers given after it poses the question of how many people a table should be reserved for. If we wanted to save the user's name, we would have to point out that in the sentence My name is Angelica ,whatever goes after My name is will probably be a name.

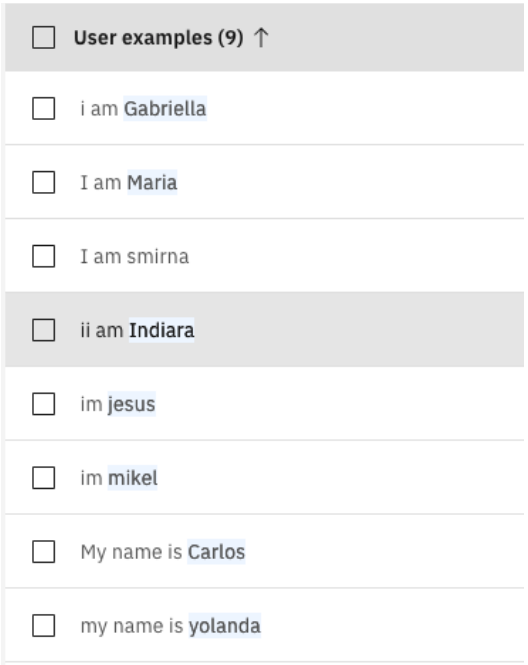

Figure 12. Entities example

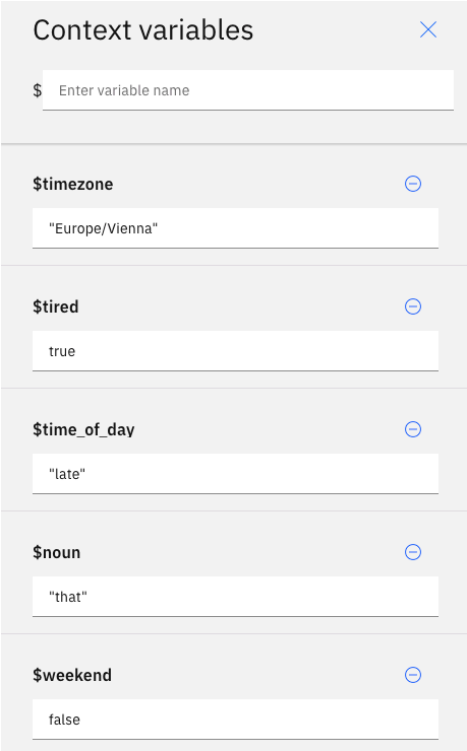

Figure 13. Context example

The last element would be the context variables. The contexts would be conditions that can be modified either with the information collected from the user or with information that is called from an external application. These contexts can be used as conditions to manage the conversation and also as variables to save some data that can be used in the chatbot responses.

For this particular application, it was necessary to externally include two variables in order to define the chatbot contexts: the time and the day. As I mentioned before, I don't have extensive knowledge of programming, so I found many of the modifications in forums and other people's questions, and I adapted some code that I found in other applications.

I defined these three conditions from the beginning of the conversation. With the first greeting that the chatbot sends, that information is collected and these three conditions are defined.

The first condition is the time of the day. I have defined 5 moods for the whole day. From 6 to 8 the chatbot is awake but sleepy (early). From 8 to 14 it is in its official working hours (ontime) and it is the time when it is most helpful and friendly. From 14 to 16 he is more serious because he is approaching the end of his working day, but he is still useful (after_lunch). From 16 to 23 he is out of its official working day, so he answers, but in a tired way and trying to get the user to let him rest. From 11pm to 6am the chatbot is asleep, although it may be able to answer

In each time slot the time_of_day and tired contexts are defined. Time of day is used for responses for each time slot and tired is what defines the responses that are given outside and inside working hours.

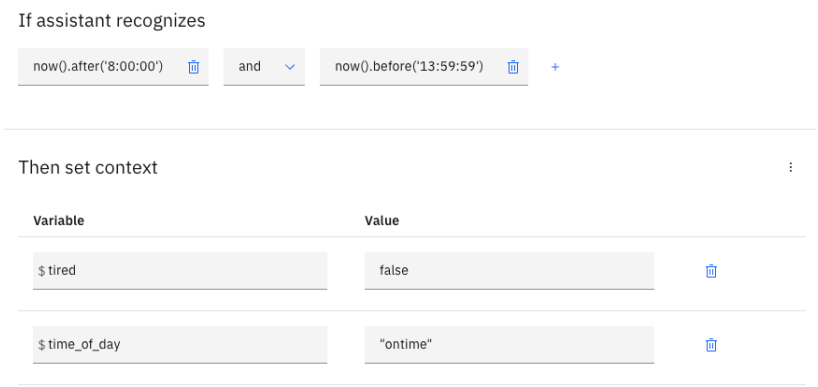

Figure 14. Knowing the time of the day and defining daily mood

After this function, it jumps to the one that detects and defines whether it is weekend or not. If it detects that it is being used during a weekend, the bot's attitude will always be tired, and the weekend will be defined.

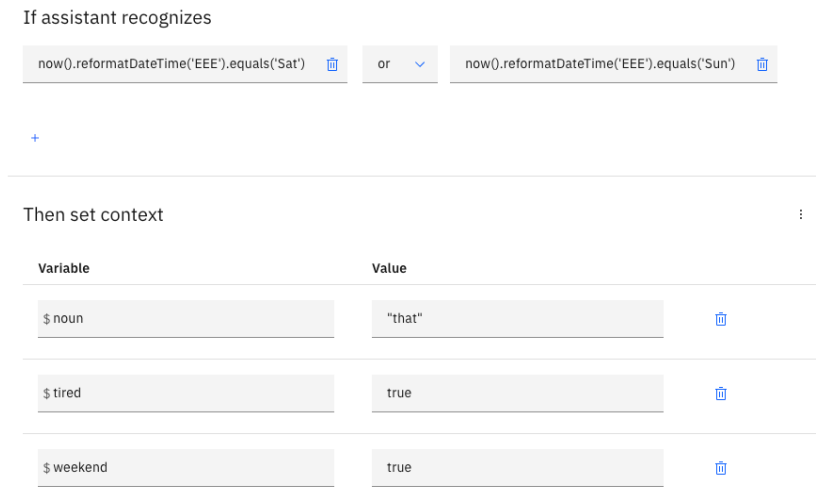

Figure 15. Knowing the weekday and defining weekend

This is how we get these three conditions that will condition from now on all chatbot responses.

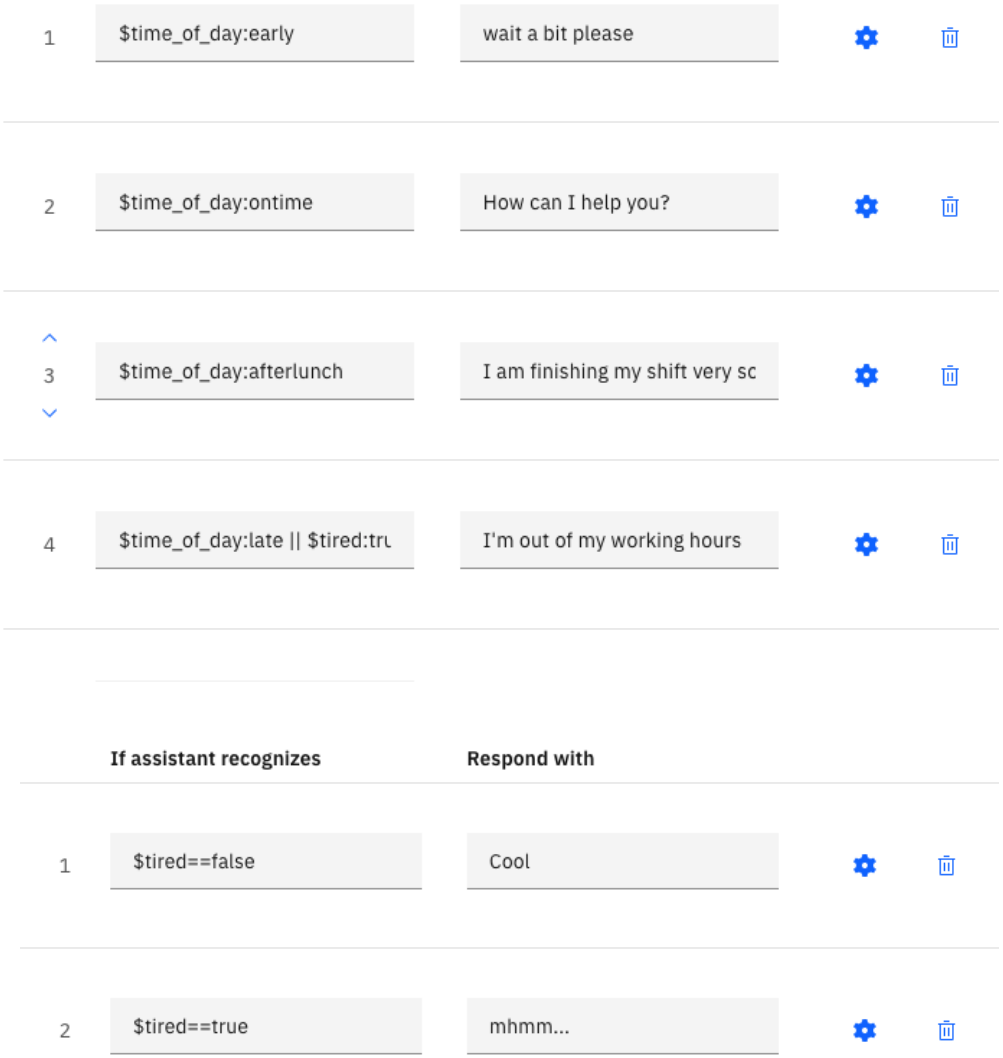

Figure 16. Responses depending on various variables

Obstacles and problems

The big obstacle in this work was to get five types of answers with their respective varieties for the same question, that is, five varieties of the same conversation. It is not in the interest of these programmes to condition all their answers at the same time. Maybe at a specific moment it is necessary to define an event, but not in the whole chatbot.

In the first platform I used, I could manage to condition the response to a boolean variable (true/false), but when I turned it into a condition based on a text variable (early/ontime/after_lunch/late/asleep) the programme started producing

senseless utterances.

Once I found the right way to write them down, the contextual variables worked correctly on the second platform. From then on, this work developed rapidly.

It is a type of technology that aims to make reservations, collect information from users, answer repetitive questions, etc..., usually consisting of simple applications focused on defined objectives. Developers do not consider time conditions to be a necessary function for such programmes; and, from what I have seen, users do not ask for that either. As I have previously mentioned, the objectives of this technology can be understood very clearly when looking at the options given to creators aiming to design them. Through its possibilities and constraints, the purpose of these tools is clearly defined.

Exhibition website and installation

Because the interesting aspect about this work is to be able to use it at different times of the day, inserting PHC in a website (www.pahuch.xyz) available to everyone seemed to me the best way to show it. The website is designed to represent the bot's expression at that moment. Matching the moods of the PHC, the website displays a face that changes its expression during the day. To keep it updated during an exhibition, the page refreshes every 10 minutes, to make sure it changes the mood when the page is constantly open.

As the installation was intended as an infodesk representing an administration worker, the page is a representation of the worker's face. There are five expression changes during the day.

The installation chosen for the exhibition attempts to mimic an office desk. The physical presentation of this work aimed to create a space that would draw the viewers' attention and entice them to have a conversation with the chatbot, that is, to make them feel comfortable sitting there for a while. I liked to play with a very clean and artificial aesthetic similar to what one would find in a business office, creating a place that should formally suggest that someone is welcome to chat, but exaggerating it.

To also encourage visitors to enter the website at other times, I designed business cards with the website address on the back that people could take with them.

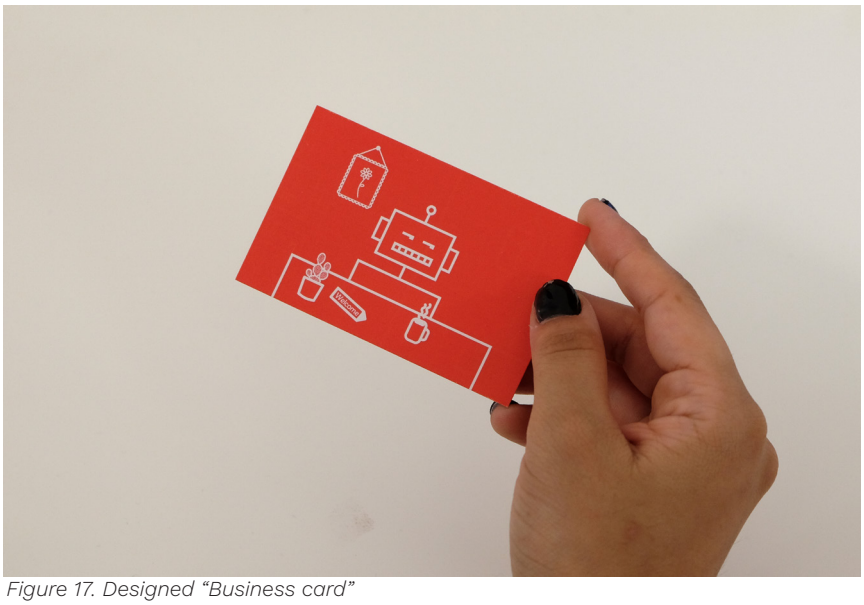

Figure 17. Designed "Business card"

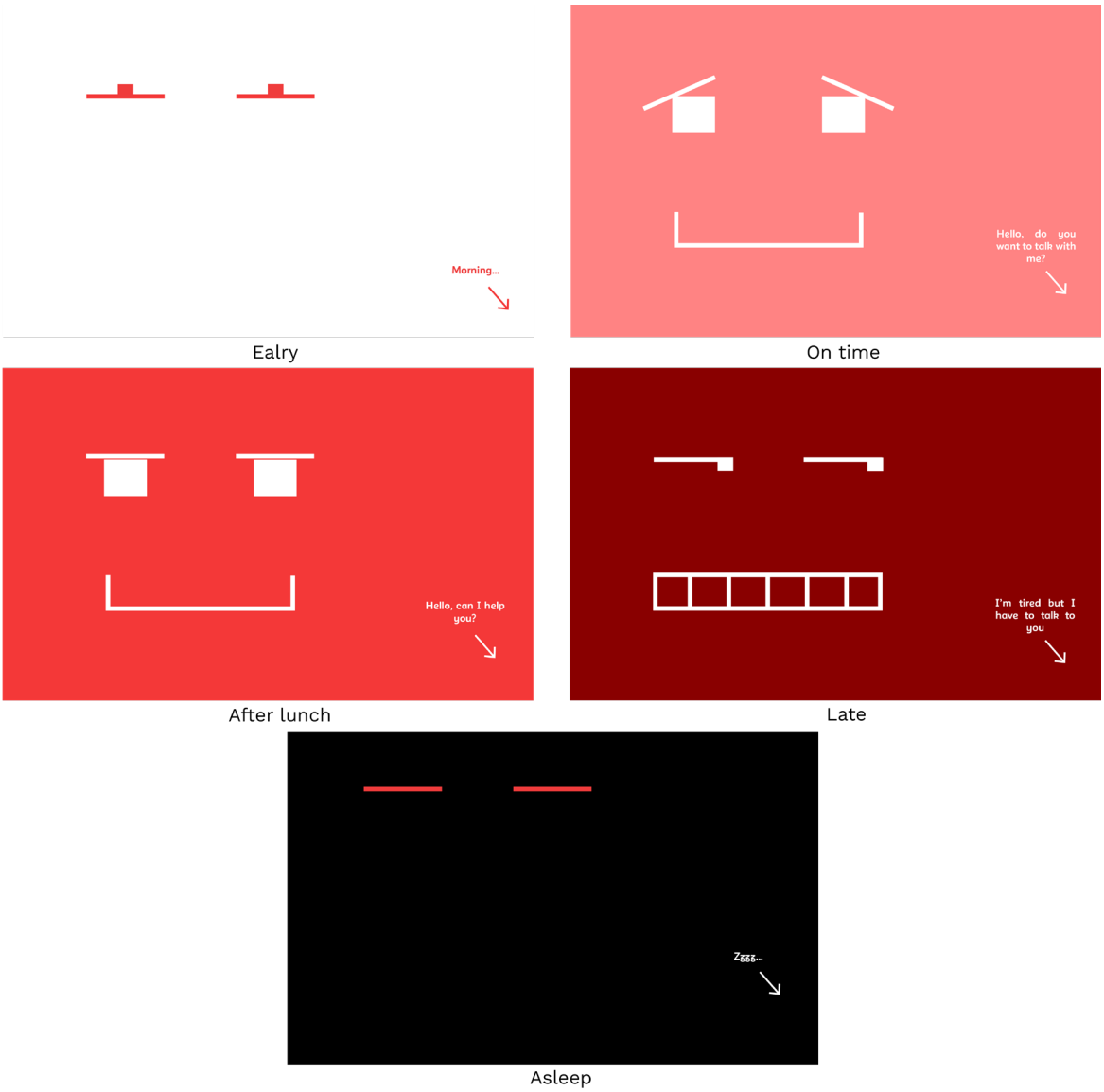

Figure 18. Screen faces depending on the time of the day

This was Painfully Human Chatbot's first technical plan for the Interface Cult exhibition for Ars Electronica 2021:

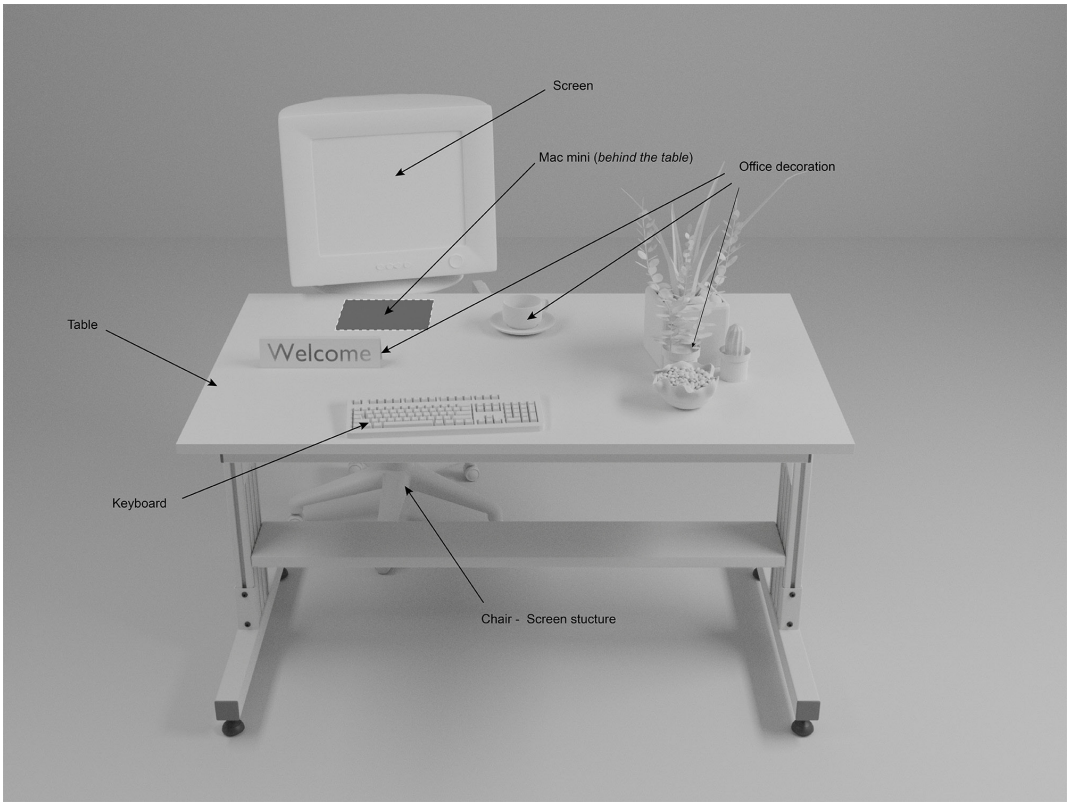

Figure 19. Technical plan

Observations on the exhibition

Out of this piece, I was able to make two observations that surprised me. I first observed the level of engagement this piece enhanced. On average, 18 messages were detected per conversation, which is a much higher level of interaction than I had anticipated at the beginning. I thought that the annoyance caused by the chatbot would make users get tired much sooner, but I noticed that people tend to spend quite a lot of time in the conversation, not getting tired of the chatbot not understanding some phrases.

I was aware that this chatbot did not have answers to all the questions that users could possibly want to ask, so I tried to create some generic open answers in order to keep the dynamic going for a while longer. One the chatbot detects a question that it is not able to recognise, it identifies and stores the noun of the last sentence received and repeats it as a question. I got this idea from the previously mentioned chatbot Eliza, where all the answers were based on repeating the information previously given by the user. The answers to some questions rephrased by the chatbot demonstrate that people talking to it were highly patient.

Another effect that has impressed me is the level of empathy that humor creates. I think one of the most striking features of this work is the fact that humor has been conveyed in the chatbot's responses, so that it doesn't come across as too rude when it is tired. I reckon that, through these funny answers, users have been able to empathise with something that doesn't want to work outside of its hours, reflecting a feeling that many of us may know and stating the answers that we would like to have given sometimes in that same situation.

It has been very rewarding to see people laughing and having fun with my work, because the one thing that I wanted to avoid when delving into this topic was to come out as hopeless or depressing. The goal behind this proposal is to understand that we have a saying in how technology is being developed, and on what we want to accept as normal or not.

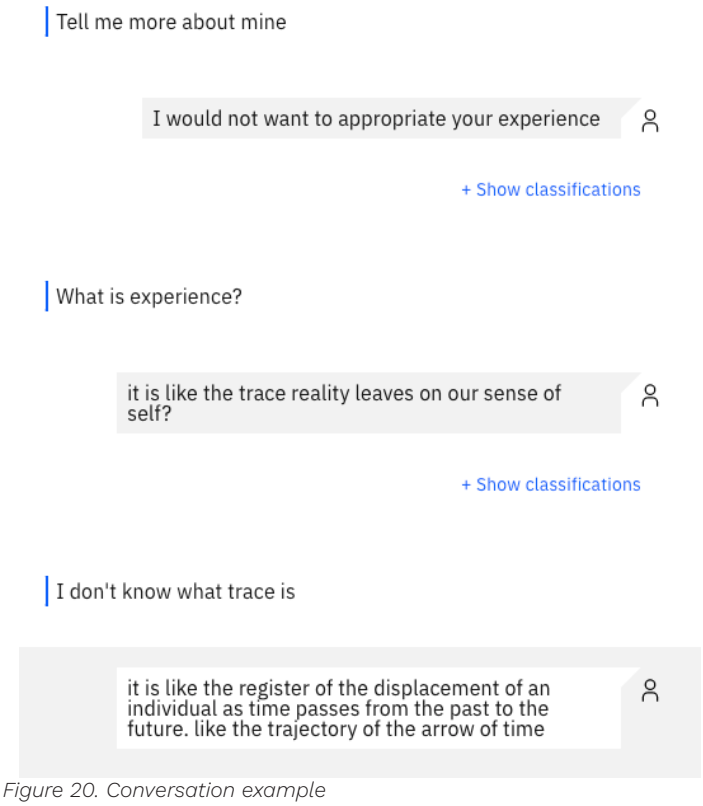

Figure 20. Conversation example

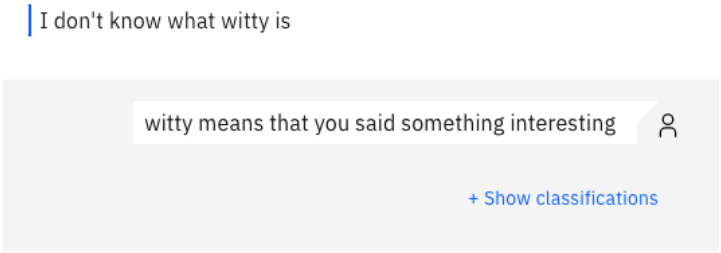

Figure 21. Conversation example

Images

Figure 22. Installation in exhibition (2021)

Figure 23. User in exhibition (2021)

Improvements and changes

In the process of the exhibition, the platform I used gave me the option to look at the conversations taking place and to prepare new answers to questions I had not predicted. Over the course of the exhibition, the chatbot was “learning” and developing its answers through conversations with users.

The website also required some changes. In the exhibition, the website is kept open in a kiosk mode application that does not allow the user to leave the web browser. The problem here was that the page would not refresh; I consequently had to schedully it to be done automatically every 10 minutes, so that the expression and chatbot would change during the day.

I want to rethink the physical presentation of this work. I like the idea of imitating an office worker but I think that seeing it on display loses its effectiveness. I would like to look at different ways of displaying it, maybe even simpler ones that don't require so many props.

In the future, I want to develop a Spanish and Basque version of this chatbot. I know that in the platform I use there are applications developed in Spanish, but I will probably find many obstacles when trying to do it in Basque, as the natural language processing of the Watson Assistant will probably not be prepared to understand the formulation of sentences in this language.

Figure 24. Official photo from Ars Electronica (2021)

Conclusion

In the course of this research we have managed to bring several current and significant concepts to understand the effect of technology on the subject. This work began by asking whether there has been any change in values through the constant use of technology. I think it can be affirmed that this is the case; it is natural that new behaviours are assimilated through everyday life. What is striking in this assimilation, however, is the lack of resistance and awareness in the absorption of some values that end up being harmful. It is this point that is interesting to underline, which assimilation we are accepting. As stated above, blind acceptance of these demands puts the human being in a constant state of anxiety, hyperactivity and exhausting fatigue as the body contains limited energy, and is exposed to many other factors that differ from the machine.

Related to this, various corporate interests linked to labour, innovation and automation have also been explored. Through these topics, the idea that corporate ethics should not be relied upon to create socially relevant technology has been suggested, as the central goal of corporations is to increase profits, either through saving human labour or reducing labour in lower-paid micro-jobs. Their lack of social vision is inherent to their objective, and it would be convenient to start looking for alternatives to be able to innovate independently of these economic interests, either by creating new agents or empowering existing ones.

We have explored the new capitalist values, focusing on innovation and the exploitation of creativity. Speaking as a creative, and writing in this area, I think it is necessary to highlight individual responsibility for our creations. Maybe we should start limiting the use of these for corporate interests only, as right now it is the only resource we can control and restrict. Nevertheless, I think it is very difficult to find a solution focused on individuals. We have to look for collective solutions to be able to resist this system that surrounds us and adapts every little “solution” created against it. At least creating awareness of this is already a first step.

Through researching art references I have found many examples of works that do not only show a complaint but look for creative solutions. I find these artworks very helpful, as they do not dwell in hopelessness.

In the course of this research I have found much more information than is reflected in this thesis. It is a very broad topic that requires much more time to understand more fully, however, I believe that this thesis has been a good start in this field that I have never tackled before.

As for the art practice presented here, this work came out of a visceral need to create a complaint, a way to express this discontent and powerlessness against something that feels too big. Being a topic that created quite a lot of sadness for me, I tried to escape from it by using humour in the creation of my Painfully Human Chatbot. I come from a very artistic background, so getting into the "code" of a program and moulding it to my own liking already seemed out of my reach. So I'm very pleased with the work I've achieved, even if it's not perfect. I have accomplished what I set out to do at the beginning and I think that with this good base and with time this work has a lot of possibilities to improve. It will be also very interesting to present this work in the Cyens center of Nicosia on November, as a contrast to the festival, and in a place more specialised in computer science.

In the future, I think I will continue to investigate the topic of technology and the interests embedded in it, because I think there is a lot to explore. I would also be interested in working on hyper-production and the creation of self-value through it. As a final thought I would like to reclaim the value of laziness against a system that can't get anything out of it.

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