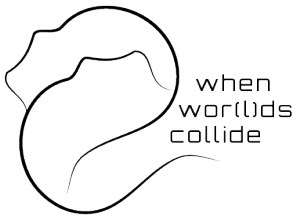

When Wor(l)ds Collide

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Declaration of Authorship

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Foreword

"Cyborg writing must not be about the Fall, the imagination of a once-upon-a-time wholeness before language, before writing, before Man. Cyborg writing is about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other." - Donna J. Haraway

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Abstract

This paper describes the theoretical and practice-based framework, drawing from the group project *When Wor(l)ds Collide*. Presented as a working prototype under the exhibition titled, "Machine Dialects: Speculating the Imaginary", it was showcased as part of the 2018 conference "Politics of the Machines: Art and After" in Copenhagen, Denmark.

A non-place that positions itself as the often 'othered', *When Wor(l)ds Collide* builds on a speculative cyborgian universe, that flits between ambiguity and reality to understand broader cultural issues using language as its primary medium and metaphor. Language as our contextual ground, builds into an immersive experience with visuals, sound and lights, that integrates with the technology developed to work in a cybernetic feedback loop system that communicates with facial emotions to direct and disrupt the experience.

With this research oriented practice-based project, we are technologically investigating the autonomy of the human and the machine in an experience, how it is harmonious and in conflict, to contextually explore the dreams and anxieties of a 'cyborg'. The hypotheses that we are making in this research originate from analysis of key texts, current scientific literature and specialized publications by media theorists.

Keywords: Cyborg, cybernetics, feedback, communication, human, machine, non-human, post-human, borders, boundaries, language, metaphor, dreams, anxieties, emotions, technology, xenopoetics, non-place, otherness

Tables and Figures

Introduction

When and how did we arrive at ‘cyborgs’? A medical and technological reality, a citizen of the space age, a literary science fiction myth, a techno-trend and a metaphor, the cyborg operates in many schools of thought.

Proposed by Manfred Clynes and Nathan Klines, this concept once applied as a frontier for space exploration. The cyborg here, is an agile construction of a self-regulating man-machine system that can adapt to new, unearth like environments. Alleviating biological constraints, it allows man to partially adapt to space conditions, hence leaving him “free to explore”. (Manfred E. Clynes, 1960, pg. 27)

Beyond these scientific-military applications in the 1960s, the conception of the cyborg is a myriad of definitions, approaches and thinking, that appears ever so often as such a recondite notion that populates the stretch of imagination; to grasp its extensive and variegated genealogy only confronts a number of newer possibilities.

An exhaustive taxonomy of the term is not the purpose of this research, but to get a deeper understanding of how it shapes and influences in the context of our project ‘When Wor(l)ds Collide’, this paper will attempt to outline radical perspectives that overtly express, challenge and question the ambivalent boundaries between human and non-human as an outcome of thinking that plagues and reinvents itself.

The cyborg that situates itself as a hybridized “creature of social reality as well as a creature of fiction” in Haraway’s construction, is one of the manifested feminist posthumanist ideologies that captures, what we set out to unveil in exploring contentions of the metaphoric cyborg that inquires and responds, enters the strange and experimental; in a world where language works in layers of unconscious structures, “as a virus from outer space” to take issue with borders, to disrupt representations and create noise.

The question central to our research is: **What are the dreams and anxieties of the cyborg?**

In literature and film but also in other domains of thought and practice like philosophy and culture, the cyborg appears within such paradoxes. On one hand it brings to the forefront the human-machine relationship as a site of debate and struggle. According to Erkki Huhtamo's words, the concept would say as much about the current "post-human" condition in which "we" live and that no matter how one understands the term, it would continue to remain a magic formula that is always evoked when the human-machine relationship is raised. (Huhtamo, 2008, pg. 1)

In this sense, when we reflect on our initial motivation for this project, the drive was to reconfigure the possibilities on which the human and machine are founded. **But what constitutes as human and what constitutes as machine?**

As appearing in Donna Haraway's writings "There is no drive in cyborgs to produce total theory, but there is an intimate experience of boundaries, their construction and deconstruction. There is a myth system waiting to become a political language to ground one way of looking at science and technology and challenging the informatics of domination—in order to act potently." (Haraway, 1991, pg.180)

Using a constructivist method and language as a tool, we picked out words that characterized 'emotions' that define the human (love, joy, empathy, pain) in tandem with traits that epitomize the machine. In our formation, these machine traits (mechanical, static, pre-programmed etc.) translate as machine 'emotions'. Language perception being subjective in our postulation, allows us to explore and arrive at a threshold of something new and speculative.

To rhetorically assume that the 'traits' of machines, a functional or abstract descriptive value, in our context becomes an interrogation, a blind spot that is constitutive of an instinctive or intuitive feeling, a machine emotion in parallel with a human emotion is what captures the power of

language. Serendipitous, yes, but this crisscrossing of borders in language explores material and signifying possibilities of contesting experimental language use.

This language symbiosis of the human and machine, is then rearranged in the classic literary cut-up technique (Language Is a Virus) that traces back to the Dadaists and writers such as William S. Burroughs. Identifying with this concept, predicates textual realities, a reconfiguration of shifting versions that create worlds of possibilities - a heterotopia (Foucault, 1984), a space of 'otherness' that is imbued with harmony and conflict. **Could this be the anxieties or dreams of a cyborg?**

Predictably with these interrogations, the project is headed far from any biological, medical or mechanical applications of cyborgism. It does however, ground itself in the theory and application of cybernetic systems and studies in our technological considerations.

Cyborg as a construction and offspring of cybernetics, is a relationship between feedback, control and communication. **How could we apply it to create an interactive experience with the human and the machine, in communication, exploring and supporting each other?**

This question compelled us to explore how our contextual motivations in cut-up language experiments, which in our hypotheses become the dreams and anxieties of a cyborg, can correspond with the technology we devise, to communicate with some form of data that it reads from the human, as feedback to the machine.

To pause and contemplate on the above brings in an important dimension with regards to the experience and the technology that makes the experience viable. **Can we use 'emotions' as feedback and as a means of communication in the convergence of those two autonomous entities?** How can it build the configuration of meaning and destroy it?

In this sense, our aim is to practically investigate, a working cybernetic model that once set into process could create the purview of an experimental cyborgian experience.

It also sparks our project title, “When Wor(l)ds Collide”, conceived to “unlock occulted lines of communication and bring forth alien personas of human-cyborg interaction” (Ireland, pg. 95) as remarked by Amy Ireland in her complex interventions into xenopoetics (Ireland, pg. 94) - another key theme that influences our project ambitions.

Definition of Problems

Speculative in conception, *When Wor(l)ds Collide,* strives to explore and expand post-humanistic thinking in the context of the status of the cyborg as a hybrid entity - its ontology, its language and its enigmas.

In this sense, our formulation is suggestive of the cyborg as a mirror metaphor of the cultural realities of our time - a foreground of the perennial problems that emerge from existing imbalanced power structures - social, economic and political that shape and influence these ‘realities’.

Michel Foucault, philosopher, scholar, historian of ideas and social theorist talks extensively about how power/knowledge relations function, are reproduced and inform us as subjects. In this context, can the cyborg subvert these power/knowledge structures? How can the cyborg vanguard its anxieties, turn the table round to critically address and acknowledges its right to “speak as no one in particular” (Ireland, pg. 96) moving beyond borders, biological determinism and opting for more gender fluid forms where “the status of the human is put rigorously into question”? (Ireland, pg. 95)

In framing this contextually, the premise that it highlights for our project is to explore a way of devising language poetics that constitutes as our own vocabulary. How can we understand this?

Amy Ireland, in her complex interventions into xenopoetics discusses provocation on language and meaning making (semantics) “taking the notion of the outside [stranger, alien, foreigner] as its area of concern and devising tactics for the cultivation of traffic between this space and the restricted economy of human-conditioned representation, which, significantly, includes language”. (Ireland, 2016 pg. 94).

In reflection of this supposition, if the language of the cyborg is English, how does it contrast to a radical reconceptualization, to liberate the hegemonies that inherently digresses other expressions and imagination of future possibilities?

In her philosophical inquiry, feminist Deleuzian Rosi Braidotti talks about “the political and ethical conditions that structure nomadic subjectivity” and warns about the sweeping generalizations, not to mention banality of using the concept as a metaphor for the human condition (Braidotti 2011, pg. 1-2). In the main part we bring forth the concept of the cyborg as a ‘nomadic subject’ to reflect on the internal and external complexity at play as “human and non human movers” from a specific socioeconomic context across borders with as much accuracy as we can. (Ibid. pg.2)

As William S. Burroughs reminds us, “Language is a virus from outer space”(Aoki, 1999, pg. 961-962). This metaphor captures beautifully both the possibilities and risks of communicating in language. “Gluing us together, splitting us apart, driving us into ecstasy and despair, seeping into, pervading, screaming our pain and voicing our deepest dreams and nightmares - speaking us even while we think we speak it. Language is the turbulent, restless ocean surrounding the islands that are individual human consciousness. Language simultaneously separates and connects us in complex and painful ways.” (Ibid.)

With our project, When Wor(l)ds Collide, we aim to take language a step further by constructing

our own perception of subjective alternate realities, or an abstract representation of the world as the world itself against ready made assumptions.

Here, quoting poet and essayist Joan Retallack, “question of genre and her call for a poetry that crisscrosses traditional disciplinary boundaries is the fundamental and stubbornly complex question of how words relate to the world. Is language to be thought of as a formal system of meanings, or a set of acts and practices that connect us to the world? The role of errancy and error in any language challenges the ways in which theories of meaning have been bound by a too simple understanding of performance, genre and partial cases.” (Kinzer, 2006, pg. 64)

Experimenting with cut-up poetry and dialectical shifts in line with these theories, is a result of breaking and disrupting the formations of language subjectivity. In our search for alien signals, new modes of communication that could subsume into the cyborg’s future existence, we attempt to liberate foundations that are adopted from nationality, race, ethnicity and culture.

This ambiguity in our hypothesis is a cyborg’s world, an in-between non-place of possibilities and ironies. Ambiguous, but grasping a certain kind of agency, irreducible to a clear-cut definition, othered in its exploits, in harmony and in conflict.

From Methodological Background to Method

Working in an interdisciplinary and collaborative setting, encourages art and critical research practices in ways where you are able to imagine and construct ideas on many different levels. The group dynamic for our project brought together three very different backgrounds – a designer, a coding specialist and a literature major. These diverse lines of thinking influenced our methodological approach and enabled us to work on an ambitious scale and in an experimental context that combined both our ideas and skills.

In the initial phase, the conceptual process, as detailed above in the previous chapters was driven by close readings of many different writers that situate themselves in reimagining and reinventing the cyborg. In the conversations that ensued as a result of these readings, we brought in correlated themes that we identified with (Non-place, the other, agency, borders, boundaries, dark materialism, language, xenofeminism, xenopoetics).

In a sense, it was representative of everything we seem to encompass, ourselves coming from diverse backgrounds, complex identities, colonized histories, revolutions, injustices and oppression, social positions - from Turkey, Pakistan, Egypt and elsewhere. It is not uncanny that we resolved to position ourselves - in challenging, questioning and transcending these realities; to advocate for a “politics of alienation” in probing a “xenofeminist” stance where “it is through, and not despite, our alienated condition that we can free ourselves from the muck of immediacy” (Cuboniks, pg.1), thereby finding power in that position while constructing our cyborgian experience.

The outcome of these interrogations with each other and with ourselves gave us ground and room to bring our own thinking, to devise language that would construct and deconstruct
our real and imagined worlds, echo the stark complexities of these disparate worlds, where realities collide in provocation and disguise to make meaning and to destroy meaning.

In addressing this, our research has been conducted from a constructivist perspective - in part theory, in part experience. Generating new worlds is an ambitious task especially when dreams, fears and anxieties seem to be lurking in the foreground. Alienation from one's self, language, country, religion intersect with complications of race, gender, class and sexuality. Alienation from the realms of the physical and digital world. All these borders of thought and being form the basis and motivation to hack into and disrupt the cis-tem.

Realizing early on, that technologically a lot was possible, gave complexity to our motivations. Central to our project, the most challenging task was to build a cybernetic system that corresponded contextually to our experiments with language. However, the flexibility of our approach made this system even more intricate, with the possibilities to combine different elements using visuals and sounds.

These scenarios of forms made the application of an art and design methodology combined with the sciences our approach. However it would be prudent to acknowledge that this was never a predefined method. In retrospect, anything predefined presented itself as a constraint and we were not ready to lay down a path and follow it. Our observation is that this fluidity led to many strange experiments, some failures and frustrations and mixed formats that this project could eventually inhabit.

Combining sensorial elements using visuals and sounds in our thinking, evolved the project more into an immersive experience, a kind of *'Gesamtkunstwerk,* as validated by Roy Ascott's texts that as humans we are constantly looking for ways to synthesize mediums like image, sound and text and this desire "to incorporate human and artificial movements, environmental dynamics, and ambient transformations all together into a more seamless whole" is what drives the contemporary ambition for Gesamtkunstwerk." (Ascott, 2003, pg. 226)

With our diverse backgrounds, we self-designated ourselves roles that we felt came naturally to us but at the same time, also learning from each other to stay true to our project. Awareness of

each other's creative processes is an important factor in any collaboration. In our experience, it spurred us to produce by also getting inspiration from each other.

The initial sketches of visual content, is conceived through toying around with what the cut-up language could represent graphically. For this, we repurposed most of the content from online sources but for our final sketches, most of the imagery is created, working with original photographs and digital illustrations.

In our aspiration to evoke something as an abstract construction, the influence of David Lynch's aesthetics is no coincidence. What materialized was sketches of noisy, surrealistic and cosmically charged terrains. One of the loops as an ode to Lynch himself is taken from the *"Twin Peaks Return"* series. (David Lynch, 2017, ep.8) Cyborgs as depicted in popular culture have trite characteristics that either make them abominable or too larger than life. To work with organic, ambiguous and non-representational imagery, we felt closer to the 'xeno' trajectories of foreignness, infinity and multiplicity.

Pre-rendered on Adobe Photoshop and Adobe Premiere, and digitally enhanced and integrated on VDMX, six visual loops were created (each as an experience) of roughly one and a half minute that works with the narrations devised in our language experiments (namely: *'static alienation'*, *'complex harmony'*, *'mechanical joy'*, *'unemotional empathy'*, *'pre-programmed love'* and *'noisy transparency')*. Technologically, the aim is to correspond each loop with language interplay and sounds to fit within the time frame of one and a half minute and the technology that we used. This technology is our feedback system, that gathers emotional data through face detection and based on the presets we define for each emotion, would allow the visitor to direct and disrupt the experience.

"Direct and Disrupt" in this context is how the visuals, sounds and narrations would morph, change, distort, overlap, saturate with each emotional gesture that it detects, and in this way we

imagined how to position the visitor in this experience as our cyborg who is interacting with technology, while exploring the contextual world of a cyborg.

To use sounds was a latter consideration but an important one. It wasn't an arbitrary decision. A lot of thought went into it as well. Original works need to be credited for that matter since we had no sound designer among us.

For every experience, attention was paid to the spatial element of sound, how it could fill the space and the staging of our project acoustically, in each experience (loop).

For **static alienation**, we used two tracks layered on top of another from David Hurley's *'Intro Cymbal Wind'* series used in the twin peaks soundtrack to garner the other-worldly Lynchian vibe we wanted (Hurley, 2017). For **mechanical joy**, Autechre's *'Characi'* was chosen for its melodious cacophony of digital outbursts (Autechre 1997). For **fragmented fear,** parts from musique concrete pioneer Maryanne Amacher's *'Living Sound'* for its intense echoey drones (Amacher 1980). For **preprogrammed love** we used Dalglish's *'Ciaradh'* to have that glitchy click and cuts (Dalglish 2013). For **complex harmony**, we were searching for an aggressive, perpetually noisy sound to go with the *"The nation is dead"* narration; an unreleased track called 'Sin' by Egyptian producer and sound designer Mostafa Onsy was used by his permission (Onsy 2015). We produced the sound piece for **noisy transparency** ourselves using FL Studio.

Another consideration that we made in the final stage was the decision to use strobe lights and integrate it with the technology, also to be manipulated by the visitor through his emotional gestures. The prototypes that we tested, gave us room to reflect on how we could add to this experience and lightning emerged as a way to enhance the immersiveness of the environment that we wanted to stage.

The collaborations and prototyping that ensued between our group dynamic were carefully documented at this stage. Writing extensively after each meeting as a way of backtracking,

reflections and mapping of our process made it easier for us to understand how each one of us was thinking and how our ideas were evolving. Our different backgrounds and disciplines made us operate on many different levels and speculate at length in an arduous attempt to investigate/ create the experience we were designing. An example from the project reports created accordingly throughout ideation process are provided in the *Appendix A*.

As it becomes more real, what we are experimenting with and producing paints the picture of how we could physically set-up and technologically stage this experience. The next chapter illustrates and covers this process in detail and begins by critically addressing in theory and in practice the contentious question of the search for languages.

Searching for Languages Yet to Come

By investigating ‘alien’ language as a tool that serves to anchor and navigate our desire to steer away from fixed identity politics, opting for more hybrid fluidity (Cuboniks 2018), nonlinear temporalities (Black Quantum Futurism: Theory & Practice - Volume 1(Phillips 2015), divorced from hegemonic spatio-temporal considerations, we are hoping to arrive at an intersectional standpoint where multiplicity of subjectivities are configured stemming from our own socioeconomic contexts at the forefront. This is implemented through a technologically informed methodology of building and hacking a system that feeds and ingests language, in complex feedback loops, pushing the boundaries of what a cybernetic system can do. The task of deconstructing and reconstructing language(s) allows us to enter the strange and unfamiliar zones where possible iterations of imaginable futures could be reclaimed beyond ‘capitalist realism’(Fisher 2009), utopian or dystopian frameworks. Embracing alienation as an impetus to make the impossible seem attainable again is the culmination of ideas and conversations that shape our investigation. We are not trying to change the world, we are only trying to change our world, and in doing so we are hoping to connect with other cyborgs, aliens, strangers and join them at the intersectionalities of our intricate being, becoming and unbecoming, breathing life through a common undesignated yet language.

The Cyborg as A Nomadic Subject

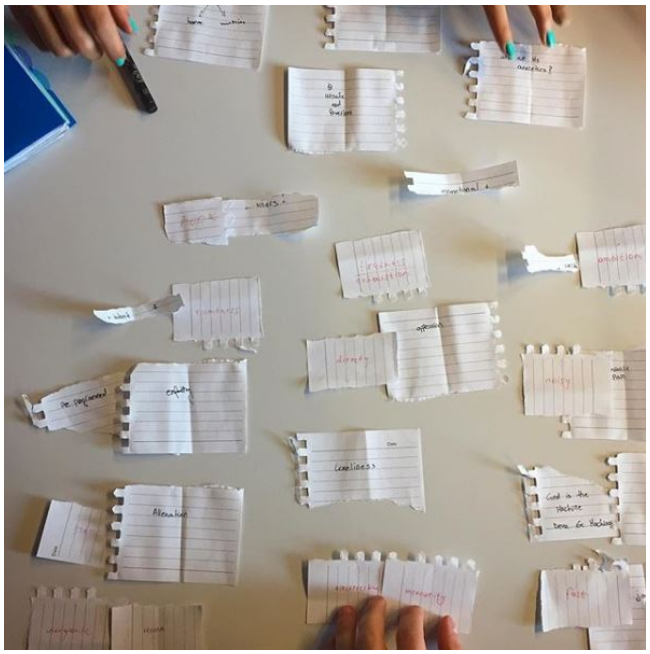
How to define language? And what language does the cyborg speak? What is it’s culture, ethnicity, nationality, sexuality? Does it speak English the global lingua franca or does it speak in broken accents, dialects, mother tongues? Or does it communicate in wifi signals, binary code, an alien language we can’t comprehend , or is it silent? Does it speak if at all? What is it’s gender pronouns? Is it really an ‘it’? Where does the agency of the cyborg begin and where does it end in relation with our human-machine interaction?

As mentioned in the introduction, our solution to the cyborg ontology problem is by assigning it the role of a mirror metaphor for the epistemic cultural realities we face on a daily basis inherent

in imbalanced power structures (Gayatri Spivak, Gloria Anzaldua, Trinh. T. Minh) - social, economic and political and our attempt to subvert that with a playful sense of provocation. Our cyborg as a 'nomadic subject' as proposed by feminist Deleuzian Rosi Braidotti "provokes dominant critiques of subject, identity and knowledge" against 'methodological nationalism' and a critique of 'eurocentrism' from within. ((Braidotti, 2011, pg. 7-8)

In understanding this, we explored a way of devising language poetics that constitutes as our own vocabulary, curious about the meanings we would derive, when we bring the human in contact with the machine.

Taking on the emotions that define the human (alienation, joy, empathy, disgust, love…) with subjective 'emotional' traits that are resonant of machines (mechanical, static, complex, robotized…), the absurd abstraction of mash-up results that came up as a result of this human-machine cut up exercise ventures between words that by formal logic defies any kind of coherent meaning; direct contradictions, words out of a hat, much like a song title that create an air of intrigue.



One thing that is happening here then is that the provocation and playfulness of constructing and deconstructing language, deviating it from scripted norms, opens up a critical rhythm and tempo to our words shifting attention from the "text" conceived formalistically as a stable object to be read for some intrinsic content, to what we do with texts as readers and writers. (Kinzer, 2006, pg. 65)

Six narrations were devised based on the six hybrid colloquials we enmeshed together: *'static*

alienation', *'complex harmony'*, *'mechanical joy'*, *'unemotional empathy'*, *'pre-programmed love'* and *'noisy transparency'*.

A brief description of the experimental writing process, choice of words, reflection on the power of language and cultural politics of translation followed by the technological integration in a complex feedback system and how we attempted to disrupt that flow to investigate the harmony and conflict residing in the human-machine will follow.

Feedback Loops of Machinic Eros

Imagine entering a dark space in the basement, detached from the conference area, where you have to take a right, climb down the stairs and into a rabbit hole as you arrive to room 2.0028. Step in and strange sounds and distorted narrations can be heard, strobes of lights are flickering in the dark while eerie glitchy hallucinatory visuals are projected on the wall. What have we created we think to ourselves?

To reflect on the language aspect of this interactive audiovisual experiment, one has to go back to the writing process, what it entailed, the referential memory it sought to bring out and subtle contextual hints thrown with an eye for detail. What is meant by referential memory here is the use of 'pastiche' to actively bring out elements associated with our themes regarding anxieties, dreams and desires of a cyborg within the narrative or what Fredric Jameson refers to as the "wearing of a linguistic mask, speech in a dead language". (Pitchford, 2000, pg.1) Many masks were employed in the writing process to reflect on the very specific cultural references but also the marked presences and absences, multiplicity of narratives, fluid identities, not to mention liminal spaces we seem to occupy, in between, inside but also outside of material reality.

The English voice over in most experiences is layered with an Arabic narration and was designed in such a way that it disrupted the flow of English and switched to Arabic whenever triggered by the *facial recognition system*, that was used as a way of interaction, to activate the experience .

The voice itself, strange and eerie, was manipulated on reaper software by adding pitch effects to it. It does not sound human, nor machinic in the normative sense, neither masculine, nor feminine and that accentuated the genderless cyborg feel we wanted to achieve.

Concerning the English narration for static alienation, it was modelled after a poem by Egyptian American media artist, professor and cyborg Leila Shereen Sakr (or VJ Um Amel translated from Arabic as 'Mother of Hope') "On Becoming Arab":

"i am an arab,
alienated from american,
sitting on the other side of that hyphen,
alienated from language,
my love sits in hand gestures
and mama's kitchen.

i am american
alienated from your conversations
inundated and un-understood
by him or her,
as the hyphen stretches,
so does she, around the globe and back.
communication slips away
into oceans vast and
she arrests it,
between parentheses." (Sakr)

It contrasts with the narration we created, where we sought to utilize that space of in-betweeness, being on the threshold of two (or more) cultures, local and global, space and time dimensions,

further removed from such dualisms, finding ourselves alienated from language but also finding power in that position as it allows us to manoeuvre past compartmentalized identities and wear a double set of goggles or consciousness that allows for critical distance and reflection.

Xenofeminism depart from early cyberfeminist figures such as Donna Haraway, Sadie Plant and VNS Matrix in their techno-utopian disregard for the body and belief in online fluid identities, while acknowledging the role of digital peer policing in the way it deeply entrenches us in identity politics. Users everywhere feel "*pressure to maintain image in a particular way, while being susceptible to constant threats of attack, harassment, or moral dogpiling."* Technology can be repurposed, re-engineered in such a way that has yet to be realized for emancipatory ends. The tools however are up to us. It also makes us question if politics of visibility is always empowering? (Dean 2015)

> "The construction of freedom involves not less but more alienation; alienation is the labour of freedom's construction. Nothing should be accepted as fixed, permanent, or 'given' — neither material conditions nor social forms. [xenofeminism] mutates, navigates and probes every horizon." (Cuboniks 2018)

Furthermore, by weaving erotic undertones to the language used, referencing Susan Sontag's famous last lines from her timeless 'Against Interpretation' essay "in place of hermeneutics we need an erotics of art"(Sontag 1966 pp. 4) is a subtle message, namely, the reclaiming of eroticism that takes many forms and on interpretation which had become "the intellect's revenge upon art" (Ibid. pg.10)

For s*tatic alienation*, the cyborg's narration turned into "a witch", a "techno occultist", a "data body", that drifts into different languages, alternate temporalities, where seamless communication slips giving voice to error, glitches in the system. The technological specifications and methods used to take the experiments with language further through cybernetic means will be explained thoroughly in the next section of the paper.

Static Alienation

I am a cyborg
Alienated from language
Sitting on the other side of the hyphen

I am alienated by your conversations, your myths, your awkward silences,
I am a witch, a sorcerer, a techno occultist, a data body
Drifting into fluid temporalities

As the hyphen stretches,
Time bends,
A space opens.
A state of flux,
Flux of wholeness,
Communication slips
away into oceans vast,

Language as desire,
I desire you,
I desire you not.
I penetrate you with my hybrid sexualities
In place of hermeneutics we need an erotics of art
between parentheses

(English narration of static alienation)

The Arabic narration of Static Alienation consisted of a voice over of an obscene Arabic poem written by late Egyptian iconoclast, poet, playwright, dramaturgist, actor, director, critic Naguib Surur (Whitaker 2007). He wore many hats himself yet as Mahmoud Louzy points out he was no dilettante "who dabbled in a variety of different modes and genres of artistic expression, his work, independent of the form in which he chooses to express it, betrays a unity of purpose and vision. Nonetheless, in all of these artistic manifestation it is essentially the poet who stands out as the guiding spirit and reigns supreme." (El-Louzy 1998)

"أيُّها الواقفون على حافه المشرحهْ
قبل أو بعد أو مع المذبحه
سقط الغدرُ والخيانه والوْلسُ والمطوحة
والسكاكين اتعبتها الجراحْ
القرارات مطوحه
والبلاغات مطوحه
والبيانات مطوحه
والخطابات مطوحه
والمقالات مطوحه
فاخلعوا الأرديه
واتبعونى أنا أهوى العُرى والصَّرمحه
رايتى ان تضحك الملحمه
وشعارى
النياكة

" فاذكرينى كما تذكرين " الطشتَ " الذى يقول " استحمى
" للبغى " اللى ياللى
أذكرينى كما تذكرين المعَّرصَ والمتناكَ والخائنَ
والجاسوسَ والراقصه
أذكرينى إذا نسيتنى " فهارس " الأعلامْ
وبائعو الكلامْ
ومدْمنو حبوب منع الحملْ
منع حمل السلاحْ
والوداعَ .. الوداعْ"

(*Arabic script of the excerpt of the Kuss Ummiyat poem used in the narration) (*Surur 2001)

To write a brief history of Naguib Surur and his legacy in a few sentences is challenging, banal and won't do him enough justice anyway, nor is it the space to do so. Suffice it to say, he was an avant garde, xeno, an 'other' in his own country, an embarrassment to many of his contemporaries, witty, satirical, obscene, a fierce attacker of Egypt's official culture, unapologetic and unyielding in his attempt to expose the corrupt grip of the state on arts and culture, in the production, dissemination and consumption of knowledge. A large number of his work remains unpublished. His most famous poem is *Kuss Ummiyat* (Mother's Cunt) *(*Surur 2001) which has received a cult status among Egyptian youth, self-styled as "shock poetry" written in colloquial Egyptian street Arabic "a bitter reflection of the state of Egyptian society and culture between 1969 and 1974". (2007)

His love-hate relationship with Egypt provides the most honest expression of the tribulations, traumas and frustrations of that period. It was never published but was widely disseminated through underground tapes of Naguib Surur's readings. Shohdy, his son, was sentenced in June to one year in a Cairo jail for posting his father's poem on the Internet. He's been in exile in Russia and India ever since, which also brings up the issue of the international laws and the internet, because the server where the poem was published was hosted in the United States. (Surur 2002)

The section of the poem self-translated here since there is no found translation of the poem, is *"Oh Ye Standing By The Door of The Mortuary"* is a blatant reaction to celebrated poet Amal Donqol's poem "*The Song of The Stone Cake"*(Donqol) which was written in January 25, 1972 during the student protests that moved from Cairo university to Tahrir Square. Why has Amal Donqol been remembered and preserved in the collective memory, resurfacing even in the 2011 uprising rather than Naguib Surur? There is no definite answer but perhaps because the latter represents the uncanny, the grotesque, the macabre, he represents "the repressed collective unconscious of the Egyptian people", and who would want to remember that? (El-Louzy 1998)

The poem is entirely remodelled after Amal's poem and it fiercely criticizes the prostitution of arts, censorship using sexual imagery and obscene language. It has been chosen to reflect on the

status of the other, the legacy of an avant gardist, who is a stranger from the world and his own country, a poet with an uncompromising mind who exercised no form of self-censorship. There's an attempt within colonialist discourses to contextualize or fetishize Egyptian art, by comparing it to its western counterpart, as if originality is deemed a byproduct of the west by default. Naguib himself was disinterested in the East and West dichotomies, he thought it stemmed from an inferiority complex and that theatre as a form for example wouldn't have reached Egypt if it weren't for the west.

The poem has been chosen to bring an element of provocation and playfulness as well to the narrative and comment on the power imbalances in play, in language and translation and reflect on the uses and power of eroticism as an emotionally charged mode of perception that can inform new ways of understanding experience in the same manner the English voice narration sought to do (Lorde). Naguib's work has the most lyrical passages to be found in modern Egyptian poetry and we wanted to highlight that.

The Mechanical Joy of Transgressing Boundaries

Born forward in non time-bound oppression
Dismantling clocks of linear time and communications control
Navigating the unknown
From traumas of past,
To remembrance of things present
Cosmic becoming
Collective healing powers

You will be given love
You will be taken care of
You have to trust it.

Maybe not from the sources you have poured yours
Maybe not from the directions you're staring at

A motherless cyborg child
Holy Moog mother
Moor mother time travelling through sounds
Transhuman exorcism
Transformation
Transgression
of borderlands
Of dislocations
Of non places
Perverse joy in the realm of digital utopias
Spaces in between.
Outsideness
The joy of being a god in the machine
Digital deus ex machina.

(Mechanical Joy's English narration)

In Trinh T. Minh-ha's book, *'Elsewhere, within here: Immigration, refugeeism and the boundary event'* the postcolonial thinker and filmmaker describes her traveling experiences, away from from her native Vietnam for the first time, she uses poetic language borrowing metaphors from Morrocan francophone writer, Taher Ben Jelloun, namely his "movements of words, images of water, mother-memory and sounds of traveling fractions" to reflect on what it means to be a foreigner, a tourist, a migrant, a refugee in an 'epoch of global fear' (Minh-Ha, T. T. 2011, pg. 1) at the criss-crossing of national borders. She describes her journey and what it means to be a stranger, in a strange country, and the complex harmonies and conflicts not to mention fragmented fears that arise from such an encounter.

“Language and memory are both places of sameness and otherness, [it] is a site of change, an ever shifting ground”. (Ibid.) Writing from the position of a ‘person of colour’ or as a ‘third world’ or as a ‘trans’ or ‘queer’ ‘person of colour of a certain race, class or gender from a third world allows you to “open the doors of the abode and step out of it.” (Ibid.) Language turns into a ‘shameless hybrid’ to accommodate the physical and mental time-travels taken by the traveler.

In our narration for *mechanical joy*, we reflect on the cultural politics of time, the advancement of capitalism, how it mutates, adapts, permeates us, capturing our imaginations and desires, and how new conditions can be shaped in reaction to it, by allowing variations in the making of mutations of subjectivities to exist. Thinking as a ‘nomadic subject’, ‘a non unitary’ subject in a system that makes you unitary, allows for such time disjunctions and multiplicity of narratives to take place (Braidotti 2011). Our aspiration to freedom of imagination, joy of creativity and carving political possibilities becomes our main preoccupation in this project.

For the English narration of *mechanical joy* we were alluding to black quantum futurism theory and practice, where “time loops, oppression vortexes and the digital matrix” are dismantled by space-time collapse giving space for collective healing from ‘generational’ traumas of (slave-ship traumas as an example) into a “desired future in order to bring about that future’s reality” (Futurism). Being excluded out of the conversation regarding the future prompted this search of alternative modes of engaging with future scenarios in the present to arrive at an intersectional standpoint.

In many ways this echoes Trinh T. Minh-ha’s words where she argues that the state of being an outsider provides the opportunity “to broaden the horizons of one’s imagination and shift the borders between reality and fiction.” (Minh-Ha 2011 pp.1). She also remarks, “traveling expanded in time and space becomes dizzyingly complex in its repercussive effects.” It becomes “subjects to the hazards of displacement, interaction and translation.” (Ibid.)

In our experience, we sought to create this space of que(e)rying of bodies, perverse, multiple temporalities, subjectivities and transgression of boundaries, in order to re-instill our faith in the ontology of imagination. In the same tradition, by tracing the words to its roots, 'trans', to 'transgress', to 'transform', to go beyond, crossing borders, embracing a fluid 'alien' consciousness that stems "from this racial, ideological, cultural and biological cross-pollenization, a consciousness of the Borderlands" is in the making as Gloria Anzaldua describes (2012, 1). Whether we succeeded in our endeavour or not is debatable of course.

For the Arabic narration, excerpts from Egyptian, Berlin-based writer of short stories, non-narrative prose and translator Haytham El Wardany's genre-fluid "*Book of Sleep*" was read. (El Wardany, 2017). The book of sleep is genre-bending in its attempt to depict sleep in a non-physiological hybridized manner. A haste self-translation of the narration is presented here with the help from translator friends Bekriah Mawasi and Yazan Ashqar from Palestine and Jordan respectively:

"Who is the sleeper? A limb amputated from a group? A solitary self? A small group resting? The waker does not stop belonging to a certain social body, even if there is a separation between him and the rest of his organs, a temporal or spatial absence. The traveller for instance remains part of the group they left behind no matter the duration of their travels. The sleeper as well does not stop belonging to a social body, even if they are absent in their sleep. But the difference between the waker and the sleeper, is that the waker tends to preserve his social body and enforces its borders, while the sleeper tends to distort the body and interrupt its [given] purity by exposing it to another body. The absent is not a tear, split apart from an organised social body but a line, moving straight ahead, and along that line, the body moves and gravitates towards delirium by it's being connected to strange bodies" (Ibid.)

Haytham's prose explores the multiple dimensions of the self emanating within sleep. What are the borders between the sleeper and the waker? Temporal or spatial absence? It's not a physiological, or psychological attempt to study sleep but rather a linguistic or

phenomenological investigation where he elusively questions the nature of sleep, its relation to shared presences and absences. Conjuring up Maurice Blanchot, Jean-Luc Nancy and Walter Benjamin he never arrives at answers nor provides analysis he just drifts in a hallucinatory dream-like manner breathing life to a new language of sleep. Robin Moger translates:

"There is no phenomenology of sleep, Jean Luc Nancy wrote in *The Fall of Sleep*, and that is because sleep offers only disappearance and absence. Sleep is not a phenomenon to be described and analysed but an absence which answers to no analysis of any kind. In this absence, the self returns to itself, and to attain this goal it must fall."

Preprogrammed love

I dreamt of you for so long

Aching for your human touch
Waiting for the language to come,
Waiting for alien signals to arrive,
A faint sound that we had only to listen hard to hear.

Walls speak the language of dreams,
Tiptoeing around intimate corners of the mind
What is the language of sleep?

Of humans?
Of cyborgs
Of love?
When does one end and when does the other begin?
What is language if not a way of creating new spaces, modes of being and thinking
In the dark cracks and crevices of broken English, mother tongues, lingua francas.
A world of endless possibilities.
Haunted by spectral presence
In hybrid ruins
In between Invisible cities
Limbo states

Preprogrammed love narration

في انتظار اللغة الآتية
في انتظار اشارات فضائية
كصوت خافت نحتاج فقط ان نرهف السمع كي نلتقطه
الحوائط تتحدث لغة الاحلام
تخطو خطوات على حذر
ما هي لغة النوم؟
لغة الانسان؟
السايبورغ؟
الحب؟

اين يبدأ الأول وينتهي الآخر؟

ما هي اللغة اذا لم تكن طريقتنا في خلق مساحات جديدة لانفسنا؟
في الخبايا والزوايا المظلمة حيث اللغات الممزقة، اللكنات الهجينة، لغات الأم، لغات مشتركة

عالم مليئ بالاحتمالات الا نهائية
ووجود كالطيف
على الاطلال
في البرزخ
في المنتصف

وقت مستقطع
سبات عميق

وجود هش ، طيف غير مرئي
لمحات ومعان جديدة

(Preprogrammed love Arabic narration)

All five experiences deal with similar themes in terms of content. What we aspire to show is that the production of knowledge isn't a stagnant, one-sided, homogenous conversation, it's an ever

fluid, expansive, creative, way of creating new spaces, modes of being and thinking through and by (re)inventing language(s), translation, by intuitively searching within our backgrounds, allowing our imagination to soar but also externally by resurrecting the (un)dead, the forgotten, the strange, the 'other', arriving at an intersectional common ground where we can discuss our anxieties, fears and dreams accordingly. The task of composing, deconstructing and reconstructing language(s) has proven to be a challenging one, especially when excavating for absences in archives, artistic production and historiographic practices. Most of the references chosen carefully and intentionally here were either censored, absent from official records, the internet, or not translated, or simply unheard of, deeming the task even more difficult yet stimulating all the same. It's as if one is searching for spectral presences, the ghosts of the machine residing at the threshold of borders, of becoming. This can be translated as a manifestation of context-specific cultural anxieties in neoliberal times. There is a prevalent emphasis on critique and meaning, rather than preserving one's ambiguity or choice to focus on the act of creation and translation itself. If anything, we realize that artistic research has the potential to unearth new hybrid forms of knowledge breathing life into new languages that are yet to explored or put to words. Lastly, all the audio format of the five narrations will be attached separately for a deeper reflection.

Traversing through language and emotions (facial gestures) within a cybernetic system

Our initial interest has been exploring the "*dreams and anxieties of a cyborg"*. In this context, taking *emotions* in the center of discussions raised certain questions as: *How does it feel like to be cyborg? What could be the dreams and anxieties of a cyborg? What would be the autonomy of human and machine in an experience, where the emotions are the shared values? How could emotions take part in such a cybernetic system as a communication means?*

Aiming to create an intimate experience addressing *boundaries* within a cybernetic organism, we had to identify what the term *boundary* could mean in this specific context. Does it only address to the *contextual differences* in between the worlds of the human and machine, or does it also correspond to a frontier in between the *communication endpoints* of humans and machines in a cybernetic system? This ambiguity of the *contextual* and *technical* meanings of the term *border* brought out two different fields to be explored within the experience that we wanted to create: On one hand the invisible, latent border separating the worlds of humans and machines has motivated us to work with experimental language and translation from a xeno perspective. On the other hand, the tangible, concrete communication border where the information processing through encoding and decoding takes place consistently in between human and machine has steered us to approach the topic within cybernetics studies.

Ross Ashby's metaphor *Black Box* represents entities with hidden inner mechanisms that shape the experience of one another and communicate through inputs and outputs. Human and machine, in this context, are two *black boxes*. Ashby states that when facing a *black box,* one should ask further crucial questions as *"what properties of the Box's contents are discoverable and what are fundamentally not discoverable? What methods should be used if the Box is to be investigated efficiently?"* (Ashby, 1957, pg. 86). If we are to take emotions as an *interface /* a *form of communication* to build the link in between those two *black boxes,* we would have to solve this puzzle*: How could we adopt emotions as a shared value, method of discovery in between such two entities, which are completely alien towards each other's hidden inner mechanisms?*

In attempting this technologically, we had to find a way to capture human emotions, and build a system to reflect how it corresponded on the machine end. Following sections of the paper describe the technical processes employed in conceiving and realizing the feedback loop in the cybernetic system, that aimed to produce an immersive interactive experience within the context of our project.

How could we capture emotions?

After deciding to work with emotions as means of communication, the question arose as to how we could technically obtain "emotional data" from the human. Brain-computer interfaces (EEG) was the first choice. The device that is used for this purpose was Emotive Epoc EEG interface with 16 channels. The device has provided algorithms that transforms brain signal inputs coming from 16 channels into emotion abstractions. After implementing a few experiments with an Emotive Epoc EEG device, we ended up with the following results:

a. Initial Outcomes: In terms of emotional data abstractions returned, the EEG device provided relevant results. *Interest, stress, engagement, relaxation, excitement* and *long term excitement* were the abstractions provided out-of-the-box. The open-source library of the product has provided algorithms to extract the data in numeric format for external use.

   In our experiments with the EEG system, emotion signals captured from our participants have been observed to be matching to the activities performed. For example, in one case, the participant performed a reading activity for 5 minutes, and within this 5 minutes, the data received from *interest* abstraction has been observed to navigate in the maximum values, while the shifts in other values were minimum.

b. Usability issues: The device works with 16 wet electrodes for each channel, which has created usability issues. First of all, after each participant, the electrodes needed to be steeped over and over again. Secondly, attaching the device onto each participant was quite a challenging process. Since each participant had varying physical traits, it was often difficult to position the electrodes fittingly onto each attachment, not to mention time consuming. In some cases, it was impossible to achieve full result with participants those who had long hair, since the electrodes were not completely in contact with the skin.

Despite the usability issues, the interaction achieved with the EEG device has shown that it is the perfect tool for our initial aim. The partial autonomy that is granted to and the complete independence that is dispossessed from human and machine through EEG technology was well-suited to realize the above-mentioned *agile construction of a self-regulating* entity with *harmonies* and *inner conflicts.* The brain signals and software output were corresponding, which represented a *harmony***.** However, since emotions are not bound directly into motor skills, participant was not able to control the output of the EEG device willingly. This represented a *conflict***.**

The observations on the results received with the EEG device has shown that the device was registered and listening to the brain signals that were harder to control such as reflexes and emotions, compared to cognitive skills such as decision making and thinking. Accordingly, the conscious attempts to manipulate the device did not give consistent results, which in the end created the *conflict* that we wanted to achieve. With the introduction of further feedback mechanisms via experience design audio-visual and semantic feedbacks*,* we expected the above mentioned *conflict* to be triggered further.

The initial trials with the device prior to the first prototype only created a system where the machine is dependent on human, due to the lack of a feedback system. The software outputs represented a numeric representation of human's brain signals, but no feedback was given back to human. To be able to observe the above-mentioned harmony and conflict further, we needed to build a feedback mechanism that would further trigger emotions, and accordingly, human would also be affected by machine. Briefly, what we aimed to achieve was a *circularity,* in order to create a cybernetic system "*that interact with itself and produce itself from itself",* as Louis Kauffman expressed. (Kauffman, 2016, pg. 492)

Even though the results achieved through EEG technology was satisfactory for the project aim, the severity of the usability issues detected have pushed us towards seeking new methods.

Further discussions about other options to get emotional data from participants has popped the idea of using facial expression detection technologies that outputs the emotional data prediction.

To retrieve the emotional data through facial expressions, first of all, the image of the participant's face should be captured continuously, the captures should be fed to an app to be analyzed and the anticipated results should be outputted in an expression-value pair *(e.g. happiness - %67)*. The whole problem set could be modulated into following tasks:

1. The image of the participant should be captured through a camera
2. The face in the image should be detected and processed further for facial expression recognition
3. The processed data should be fed into an artificial intelligence app that is taught with a reference dataset consisting of a high number of image-expression pairs
4. The AI should output the possibility of each facial expression

The results achieved from the initial trial with the facial expression technology is as following:

1. Initial Outcomes: The system built had a high accuracy of facial expression recognition. The abstracted emotion values were *happy, sad, angry, surprised, disgusted, neutral,* and *fear.*
2. Issues: The foremost issue with the system was the *assumed* link in between the anticipated emotion abstractions and the participants' own definition of their emotion. How could one assert that the values given by the system represents the participant's real state of emotions? How accurate is it to restrict one's emotional state into 7?

The EEG technology was more likely to represent human emotions than facial expression recognition technology. First of all, the transmission from the *neuro-chemical state of brain* into *numerical emotion abstractions* is less likely to be interfered, compared to facial expression recognition system, because the transmission process in the EEG system is as short as following: *brain & neurons→$_1$ EEG hardware (electrodes and cables)→$_2$ EEG software→$_3$ human-readable data$_{(visualize)}$.* The first transmission likely to be interfered due to loose contact with skin,

and this is the only significant source of error in this case. Second of all, as mentioned above, the conscious manipulation of the participant on the values were not likely in EEG technology, since emotions are not as controllable as motor activities.

On the other hand, the same process in the case of facial-expression recognition technology requires more steps of data processing, and accordingly more open to interferences compared to EEG technology: *brain&neurons→1 facial expressions→2 camera capture →3 face detection technology →4 emotion detection technology (artificial intelligence)→5 human-readable data.* The second transmission (→2) is affected by the various parameters such as lighting of the environment, the incorrect positioning of the face in the camera, the visual parasites in between participant and the camera, the resolution of the camera. The third transmission (→3) is also affected by multiple deficiencies within the open-source face recognition system. For example, if the participant is not directly looking at the camera, or if some parts of the eyebrows are hidden, the detection speed decreases. The forth transmission (→4) is provided through an AI app which has a 35±%5 margin of error in guessing the right facial expression. Furthermore, the dataset provided for the AI consists of around 36.000 human face images that are paired one-by-one with emotion tags by people -not by the individuals in the image-, and beyond dispute, are biased. Finally, the manipulation of the system is as easy as changing the facial expression, which is a motor skill, and easily controllable by humans as opposed to controlling the complex affective state of the brain that produces *emotions.*

When we compared the results of two technologies and are at the point of decision, we either had to give up flawless usability and go with the system that is more likely to represent emotions, or to some extend renounce the idea of using emotions as a communication mean, and ensure a better user experience. Even though we were so thrilled with the idea of inserting one's emotions into a system and leaving the participant without a way out from his/her/their own audio-visual reflection of emotions, the scenario of struggling to attach the device on participant and failing on with some of those has felt exceedingly unpleasant. Therefore, we decided to work with facial recognition system for the first prototype of the project.

The decision to change technology used for the project has inherently raised different questions. First of all, the change from EEG technology to AI was likely to alter the debate on levels of autonomies of the human and mechatronic components. Former technology creates a deeper level of dependency of human into machine, leaves a little margin for human to control the system on a cognitive level, yet is less interfered with. On the other hand, the new choice of technology gives more autonomy to both components of the organism as a result of a looser interdependency, gives the participant more control on the system, and is more open to interferences.

Since the experience in this form is more suitable for the participant to control, we expected that the experience would be more *playful*. Additionally, further trials of our new technology form within the prototyping processes showed that the increased interruptions within the system due to the mentioned *interferences* created *glitchy aesthetics* in the experiences that were disconcerting, provocative but intended all the same. The unexpectedness of the glitches resulted in our participants to give observable reactions to the system. For instance, in the *mechanical joy* experience, the volume of a TV static noise sound is bound to *neutral* emotion value. In some occasions, the glitches resulted in very fast shifts in *neutral* value, which also increased the volume of the disturbing static noise sound. Considerable number of participants were observed to be astounded or intrigued with this unexpected change.

Before building the first-prototype of the project, we had little technical knowledge about the capabilities of the softwares available for creating the experience. What we needed was a platform that was able to (1) receive data input through a communication protocol, (2) provide mechanisms to manipulate content, (3) output content for live-performance. We decided to use VDMX software to produce audio-visual feedback mechanism, knowing that it provided a wide range of manipulations on different levels, audio-visual parameters, and is actually produced for live VJing. As an extremely compatible and modular software, VDMX provided us with a lot of possibilities to discover.

First Prototype:

With the first prototype of the project, we primarily aimed to build a very simple system that was fed with *facial expression data inputs* and returned *audio-visual outputs.* Eventually, we aimed to illuminate some of the technical and contextual points that were relevant to our research questions. On one hand, technologically, we wanted to find out (1) the ways to transmit the captured facial expression results to VDMX, and (2) the manipulation layers and parameters provided in the software for audio-visual content. One the other hand, we mainly wanted to observe (3) the first encounter of the participant with the system and their reaction.

1. **Facial expression input to the software:** As mentioned above, the facial expression estimation was carried out through an AI app that was developed in advance. How the facial expression output data of AI could be used within VDMX software was a challenge to be overcomed. Further issues with the technology has compelled us to use two different computers for the AI app and VDMX software. A linux device that was attached to a webcam was used for the AI app, and a Mac computer was used for VDMX operations. Both computers were attached to a Local Area Network (LAN) device and assigned static IP addresses. The output of AI app was transferred through UDP protocol to Mac device, and captured by VDMX via Open Source Control (OSC) protocol.

2. **Manipulation layers & parameters within VDMX:** After conducting a few experiments with the software,, we realized that the software was ideally suited to what we wanted to achieve. First of all, the building blocks within the software are designed in a highly modular approach that allowed us to build and connect our experience parameters freely. Once we received the facial expression result successfully, we were able to use it to manipulate any audio-visual parameters of the experience. For instance in the *noisy transparency* experience, the *brightness* of the projection light and the *volume* of the sound was bound to the facial expression *neutral* in an inversely proportional way. As a result, whenever the value of *neutral* was decreased, the *lights and volume* was

increased. Accordingly, the lack of an expression in the participant resulted in a dark and silent room, while any expression flashed the lights and volume considerably.

In realizing the wide range of technical capabilities of the software, we had the first clear idea of our close to final experience. The extensiveness of the media that we were able to implement motivated us to use as much as we could, which eventually ended up being somewhat criticized. Even though the language was our main *method*, the audio-visual components that were designed as *supportive means* diluted the focus from the language.

3. **First trial of the feedback mechanism:** After connecting the AI app with the VDMX experience, we had a complete chain of information processing from facial expression to feedback of audio-visual output: *brain&neurons→1 facial expressions→2 camera capture →3 face detection technology →4 emotion detection technology (artificial intelligence)→5 human-readable data→6 VDMX →7 audio-visual feedback →8 the five senses →9 brain&neurons.* In order for this *circularity* / *loop* to be considered complete, we expected audio-visual feedback given as a result of facial expression manipulation to trigger further emotional stimuli, which would end up with a change in the facial expressions. To test it, we connected the *happiness* input into a *glitch* effect that we have applied into one of our prototype experiences. When the system received more *happiness* input, the glitches in the visuals increased proportionally.

Second Prototype:

Testing the functionality of the fundamental technical modules of the system and the basic feedback mechanism generated further set of inquiries that are rather linguistic and experience design related. Firstly, how to deconstruct and reconstruct language further through technology, was the main point of our discussions. Secondly, we wanted to create a series of audio-visual experiences that were aesthetically and poetically bound to the feedback mechanism.

Since the second prototype achieves to some extent the technology we were devising for our project, in the next section the complete technological specifications of the system will follow, in elaboration of the ways we handled the above mentioned inquiries. Finally the outcomes and further questions raised at the end of the exhibition of the project will be presented.

1. **Use of experimental language within cybernetic information processing:** If writing is pre-eminently the technology of cyborgs (Haraway, 1991) then the struggle for language and against seamless communication manifested in binary codes that define and process all meaning perfectly becomes the task here not only through experimental language but by pushing the borders of what a cybernetic organism can come to represent.

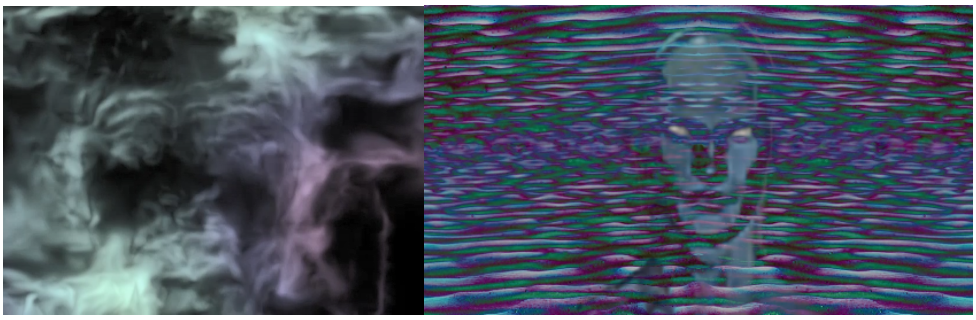
   The experimental poetry was fed as content narration to the system where the switch between languages (Arabic and English) could be observed on an interaction design level. In all the experiences, *neutral* face expression, in other words, the lack of an expression in the face is bound to English version of the narration. Accordingly, when the level of *neutral value* is decreased, the volume of the Arabic narration is increased. On the other hand, if there is not any expression in the face of participant, the Arabic narration is dimmed and the English narration is focused.

2. **Experience design and the feedback mechanism:** The main challenge that we focused on here was to build the aesthetical and contextual connection in between different supportive and competing audio-visual and linguistic elements of our experience.

   a. **Audio-visual design:** Firstly, audio-visual elements and the language interplays were aimed to work together in a coherent way.

      We reflected on the themes of each experience while designing the audio-visual content, in addition to representing one's alienation from *"self, language, country, religion that intersect with complications of race, gender, class and sexuality"* as

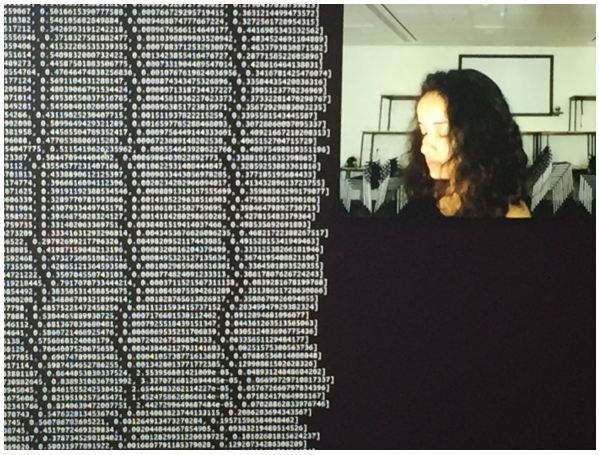
expressed above. For example, in the *static alienation* experience, the voice of the cyborg was distorted in order to diverge it from the likely assumptions of a male or female voice in accordance. Also, for the *complex harmony* experience, we designed a fluid structure of a human silhouette which darts in and out continuously and changes colours.



Complex Harmony **Static Alienation**

b. **Design of the Feedback Mechanism:** Secondly, the values - *happiness, sadness, anger, surprise, neutral, fear* - coming from the AI device, in our technological aim should resemble the audio-visual feedback constructed through VDMX. In our expereince, this would further build the mentioned *circularity* to ensure that each loop lasts longer.

The second prototyping process has produced not only questions that are complex to understand and but also further inquiries that are demanding to actualize. Clearly, the experience emerged as a result of this process incorporated our initial set of problems with new questions that were waiting to be asked. At this point, there were excessive amount of questions to be answered in order to take the project a phase further. An extra building block put on top of this abundance of unanswered questions was doomed to collapse. Furthermore, as a group, we were at a point where finally what we had working on was



coming together.

Final Technological Specifications:

The languages used in this project are Python and JavaScript. The first three stages of the system is programed with Python, because the language provides strong libraries for computer vision and deep learning. The networking achieved with JavaScript in Node.js runtime environment, because of language's event-driven features makes it feasible for networking. All the code pieces provided below are the representations of each process, and not direct references from the system itself.

For the whole integrated system, two computers have been used. The computers are connected through a local network set. The VDMX software was run on a Mac device, and the whole facial expression recognition process was run on a Linux device.

A. Recognition Computer:

a. **Face Recognition:** The first task in the problem set is to detect the face of the participant. For this purpose the computer vision library OpenCV is used. At this stage, the face is captured and processed into machine-readable format.

```
video = cv2.VideoCapture(0)
colored_image = video.read()[1]
gray_image = cv2.cvtColor(colored_image, cv2.COLOR_BGR2GRAY)
face_detector = cv2.CascadeClassifier("model.xml")
faces = face_detector.detectMultiScale(gray_image)
```

i. First two lines turns the registered video capturing device on and captures the blue-green-red format image from the video. Third line converts the colored image into gray-scale image.

ii. Fourth line creates an object of CascadeClassifier class of OpenCV. This class is used to detect specific objects in an image. The "*model.xml"* file stands for a file that has the model of a face in the required format *(this is a preset provided by*

OpenCV library itself). After this assignment, *face_detection* is object instance of Cascade Classifier is created and it is enabled to detect faces in an image.

iii. The created *face_detection* object is used to detect faces in the gray-scale image array data that is created in the first stage. After this assignment, ***faces*** multi-dimensional array is created. The array holds the numeric representation of faces detected in the provided image.

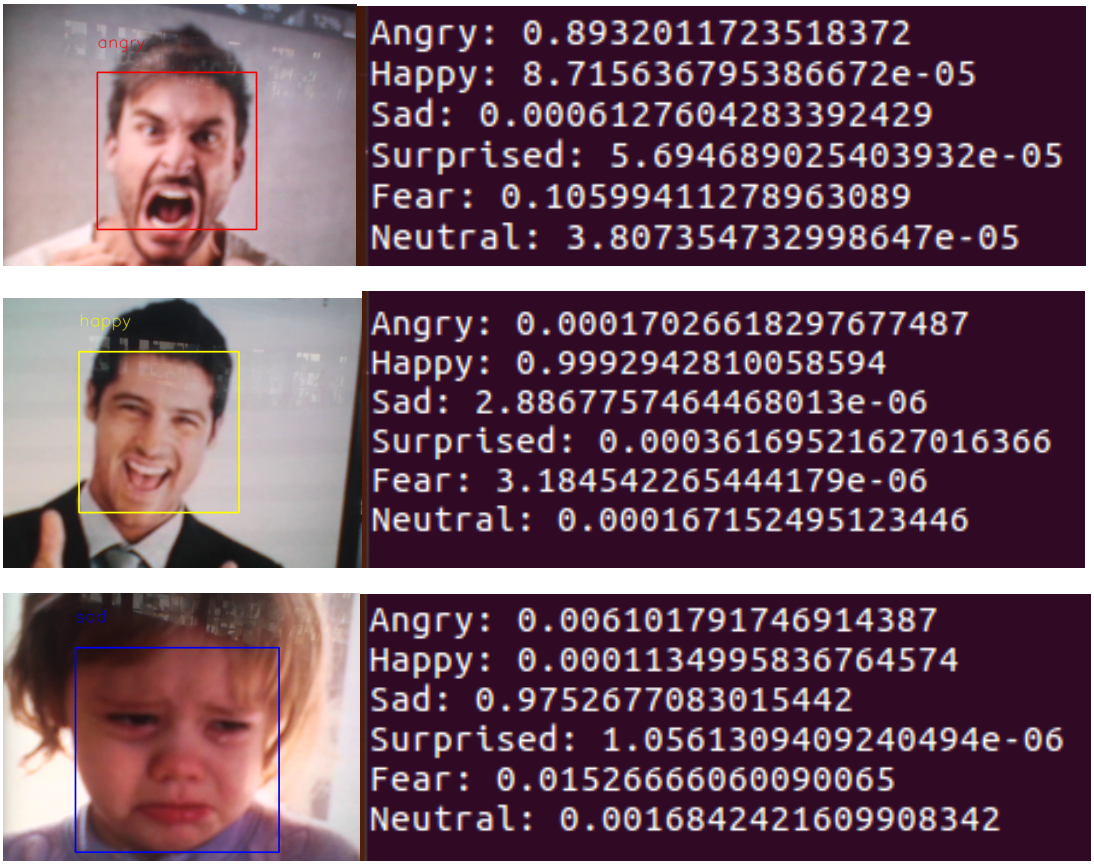
b. Emotion Classification: Being captured the numeric representation of the face, next step was to compare the captured results with a preset data to find out which emotion does the participant most likely to have. We have decided to use an artificial intelligence system that is taught with *facial expressions* that are paired with specific *emotions*.

i. Dataset: The reference dataset used in this research is the FER-2013, which was introduced in ICML Conference in 2013. The researches conducted on the dataset has proved that the accuracy of the results achieved ranged in 65±%5 (Minho Lee, 2013, pg. 119, 120). The dataset consists of 35.887 48x48 pixel grayscale images, each labelled either *anger, disgust, fear, happiness, sadness, surprise,* or *neutral.*

ii. Model: The convolutional neural network (CNN) layers method is used for the model architecture of deep learning app. This method is known for its resemblance to how human brain works when analyzing any kind of visuals. Within the system there are a few layers of neural networks that recognize varying levels of detailed patterns. While the bottom layer recognizes the most basic patterns, the upper layers recognizes more complex patterns using the results passed from bottom layers. In the end, the neural network built with the provided dataset passes the image from these neural layers, and outputs the percentage of each expression value's possibility.

To sum up, with the image input to the system, the system recognizes the face in the image, resizes it to 48x48 pixel and passes through the neural layers, which are previously taught with the FER-2013 data. The output of the app is an array of prediction

results with 7 emotions and their probabilities as shown in the images below.



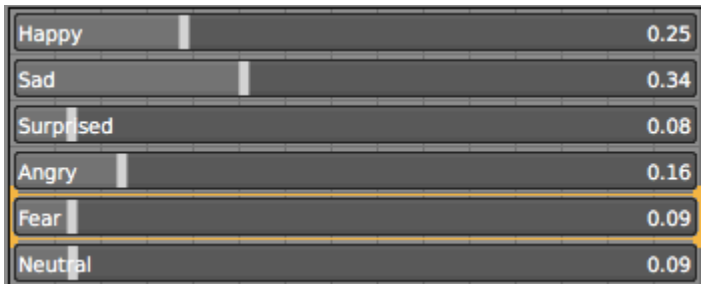
To demonstrate how the system works, prediction results for three cases have been illustrated above. The prediction results of the system are placed next to each image. For instance, the system has predicted that the person in the first image is *angry* with %89 probability. The person in the second image is *happy* with %99 probability. Finally the person in the final image is predicted to be %97 *sad*, %1 *afraid* and %1 rest of the emotions. Note that the emotion value of *disgust* were not used in our experience, therefore the the sum of above emotions does not correspond to 100. Also, the values that looks like to surpass *1* are represented with *euler's number (e),* and actually are very small numbers. To sum up, the results achieved with the AI prediction of facial expressions are observed to be coherent.

iii. **Networking:** Networking in between facial expression computer and the experience computer is provided through local network using *UDP networking*

protocol. The results are sent to the machine that the *VDMX* is sitting on. The received results are sent to VDMX software through OSC protocol, where each *port* is used to transfer a different *facial expression value.* Finally, the facial expression values are collected in a uniform *control panel* pool

Technology used in Audio-Visual Experience: The audio-visual experience has been developed with a set of integrated software and hardware. The VDMX output is reflected to a white board using a projector. 6 DMX lights are connected to DMXIS software which is set to listen VDMX software through MIDI protocol.

Every parameter, except timing, within the experience are pooled in a *control panel* within VDMX. The primary input source to the control panel is the above mentioned AI app that is sending facial expression value estimations. The control panel on the right has been used as the central operation center for each feedback parameter.



1. Expression Sliders:

The expression data is received by VDMX through OSC protocol, and it is stored in 6 different sliders for each expression. This section of the control panel has been used as an operation center for all the parameters that is controlled by the facial expression data. We call these sliders *expression sliders*. In this example, if we bind the *brightness of the light (Dim)* into *happy* slider, the light will be %25 bright, because the *happy* value is at *0.25*. Another example is that if we bind the *volume of English narration* into *neutral* slider, and if we bind the *volume of Arabic narration* into the inverted value of *neutral* slider, the *English narration* will be the *%9* of what we hear, while we hear *the Arabic narration* with *%91* volume. In most cases, this is how we embraced the changes in between languages. When there is not an observable expression on

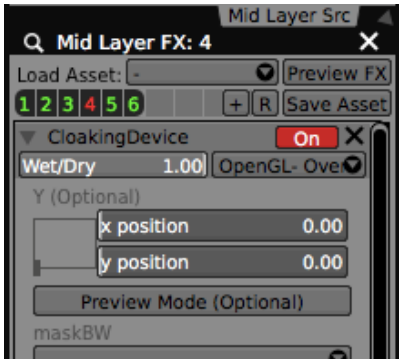
participant's face, the narration is heard in English, while with any change on participant's face, the narration is turned into Arabic.

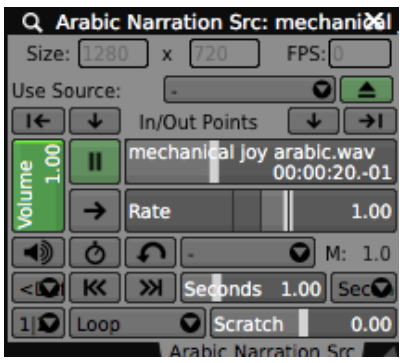
2. Lighting Sliders: 10 separate sliders have been created for the control of the lightings in the room. The lighting setting is divided into two blocks of sliders. While the upper block of sliders has controlled 3 lights, the bottom block sliders has controlled other 3 lights. The values of the sliders are transferred into the DMXIs software that is controlling the hardware for lighting.

We have manipulated the lighting in three ways. Firstly, some of the experiences required static lighting. In this case the sliders are not bound into anything *(gray sliders are static)* and their values are configured by our decision. For example, for the *noisy transparency* experience, we did not want any color, but white. Therefore, we set all the *Red, Blue and Green* sliders into static %100. Secondly, some of the experiences required lighting that is directly manipulated with the facial expression value (*expression sliders* → *lighting sliders*). For example, if we want the room to be illuminated only when there is an expression on a participant's face, we need to bind *Dim1* and *Dim2* values into the inverted value of *neutral* slider. The less is the neutral value, the more are the Dim values, and accordingly the brighter the room. Finally, some experiences required more complicated control of lights. In these cases, we needed another level of control on colors. For that, we did not directly bind the *lighting sliders* to the *expression sliders*, but to a *color wheel* component of VDMX. And the *color wheel* component itself is bound to *expression sliders* (*expression sliders* → *color wheel* → *lighting sliders*).

Color wheel component automates and simplifies the process of control on colors. A single *hue* value itself in the *color wheel* is adequate to specify a color. In the example above, the *hue* value is bound to *happy* slider. As one can observe, the *hue* is located at 0.08 (%8) as a result of that *happy* is also located at 0.08 (%8), because *hue* is listening to *happy* value. There are 360 values in a *hue* spectrum as one can see in the left image below. %8 of 360 corresponds to 28,8. After specifying the color with *28.8 hue value* in the *color wheel* component, the *R, G* and *B* the values of the color is matched with the *Red, Green, and Blue* sliders in the control panel.

3. Layer Controllers: All audio-visual content except lights are built on VDMX *layers* and controlled through *layer parameters.* The first image below represents a visual layer. The second





and third images are the layers where the Arabic and English narrations are played through. The visual layers are mainly manipulated through the VDMX *visual effects* that are added on them. On the other hand, the Arabic and English narration layers are manipulated only through their *volume* parameter. The communication within *layer parameters* and the expression values are built directly through *expression sliders.*

On a final note, as far as technology is concerned, the majority of tech set up used for our experience is available as open source softwares. The links and resources to the open source libraries and softwares are provided in the *Appendix B*. Also the codes of the project are provided as in Github with MIT licence. We would like to enable or give artists, researchers, hacktivists the tools and framework to conduct their own experiments, taking our project further into other directions. The VDMX software that is used for the experience could easily be replaced by the free alternatives that could communicate through OSC protocol.

Exhibition in the Politics of the Machines Conference

Set-up and Staging

It is important to mention that for the purpose of the conference which housed this exhibition, this and many other projects were positioned as 'working prototypes'. To emphasize this is to address the difference in the considerations that would result if this was staged in a typical formal gallery setting, where you start installing weeks in advance, have a sizeable budget to work on spatial constructions, realize and implement each and every last detail to make it ready for the public.

In the conference setting, research led artistic projects have different kind of audiences. Scholars, artists, professionals and students come together to present new ideas, debate and get feedback on the talks and prototypes presented. There are no big budgets to work with so quick improvisations and limited technological resources, makes the staging process interesting in how you can successfully implement your project with what you have been given.

For the exhibition, we were allocated a big classroom in the basement of the venue. We were not allowed to move anything out of the room, only readjust what was there to fit into our set-up. The biggest challenge was that the room was not dark enough for the immersiveness we wanted to create. In order to create the required dark environment, we covered all the windows with black plastic bags and fabric.

Our tech setup could not be hidden and was in plain view. The desk that we were supposed to use was connected to the wall with a short cable, which limited its mobility. A lot of the visitors thought that it was a part of the experience.

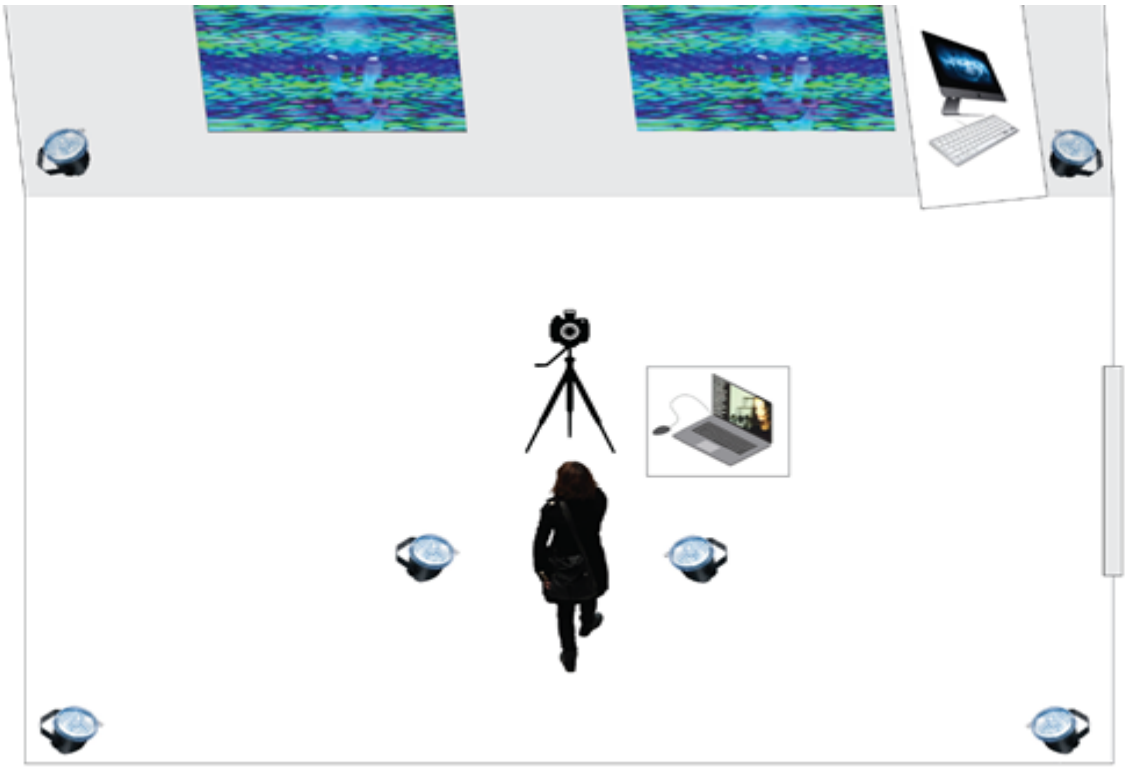


Fig Set-up in the Room

The room had two split projector screens which was not how we perceived our interaction would take place; the decision to use both screens was in terms of aesthetically using the space that we had been given. Accordingly, the camera placement had to be readjusted to face the visitor right in the center of the room.

The figure above illustrates our set-up. In this set-up, we made contextual observations regarding key aspects of our project and gathered feedback on-ground with the visitors who approached as participants to the experience.

Observations, Critique and Feedback

Although the feedback varied from visitor to visitor, the insights that we arrived at were many; it is important to state here that in our ambition to work with several mediums, we tried to do too much. Each experience loop (a total of six) corresponding with language (narration), visuals, sound and lights presented technical problems that we did not foresee. In retrospect, we could have used these various elements selectively and sparingly in each experience, not only to make the technical aspects less complex but also to create emphasis for the content to be experienced accordingly.

It appeared to some of our visitors that four separate works were on display; the visuals, sound, narration and the technology, and in exhibiting this as a prototype, we were able to understand how this could readjust in a future version of our project.

In terms of audio-visual aesthetics, the critique from the visitors is that even though the visuals represented their own themes, they did not constitute a uniform experience. Eventually, the different parts of the experience felt somewhat visually disjointed, in a way that was not our aim.

Some visitors were pretty confused and in the way our project was staged, we could understand their confusion, albeit we can argue that a certain level of ambiguity was intended from the very beginning. Whether all the subtle linguistic hints were comprehended is also questionable, although some of the participants seemed to engage and enjoy the language play, even though they didn't quite understand it. "The nation is dead". "Indeed", replied one of the participants enthusiastically implying they must have a shared a common ground that allowed for this to take place.

Alternatively, there were some really positive comments from visitors regarding the language aspect who understood how we situated our project in line with the theories we were working with and the hypotheses we were making.

With reference to the ‘emotion’ feedback loop, we tried two different approaches with the visitors. Some, were not informed in advance that the system was registered to their facial expressions. Our aim here was to see if the set up was adequately self-explanatory.

Some of the visitors stated that the camera directed into their face was a subtle indication of being watched by the system. This made them aware that this had something to do with their expressions. It is also because on the screen, their face is shown live within an enclosed colored box with the facial expression estimation on top (as can be seen on the left). On the other hand, some of the participants were unsure about how to interact in this experience. In bafflement and curiosity, some blocked the viewfinder of the camera, in order to see the difference. Finally, some participants found the setup with the camera and split-screen very distracting.

Another significant critique was regarding the space. In our initial sketches, we were attempting to conceal the camera completely from view, allowing for a more seamless interaction. However, this could not be done. In order for our system to work, we had to mark a defined space [X] for the participant to interact, restricting them the freedom of movement. Most of the participants did not interact with anything until we explained how it worked. Additionally, some of the participants did not think that the experience was interactive at all, because the system was already activated when they entered the space. This means that although the distortions/ disruptions were dependant on facial gestures, these transitions in the overall experience with the visuals/sound/narrations were so subtle and fluid, it was somewhat unnoticed.

Most participants interacted for at least one loop. In terms of triggering the system with facial gestures, we observed that once the participants discovered the feedback mechanism and the results of their actions, they mostly triggered the system further with different expressions.

Hence, the cybernetic loop that we aimed to achieve was successful to some extent even though the facial expression recognition system gave a substantially large autonomy to the participant compared to EEG technologies as explained above.

We also observed that the feedback mechanism caused observable physical reactions in our participants in some parts of the experience. These observable physical reactions further triggered the system, in a continuous and dynamic loops.

The question of 'autonomy' with regard to machines was discussed extensively with one of the participants. He stated that he did not understand the feedback mechanism fully, and that made him question his role within the system.

In the end, we would say that our attempts to build a meaningful connection in between the *facial expression software* (that gathers emotional abstractions) and the *feedback mechanism* (experience loop) mostly failed.

In Conclusion

To conclude, we would like to say that despite the failures we faced, these early prototyping experiments afforded us many in-depth reflections, vantage points and clarity to possibly undertake a future version of this project.

In such a complex system/experience, we were able to experiment in different ways, mediums and across disciplines. This gives us a more coherent understanding of our approach and methods, how it contributed and supported each other, towards structuring the project on many levels.

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https://www.theguardian.com/commentisfree/2007/apr/10/oneangrypoet

Glossary

Term	Definition	Page
Artificial Intelligence	A simulation of human intelligence in computer systems.	38
Channel	A physical artifact for transmitting information or a conc connection in between interconnected media	36
Class	Extensible code templates tha defines initial values and behavio	44
Computer Vision	A field in artificial intelligence that deals with computer interpretation ability.	45
Cognitive Skills	Mental processes in humans generally related with infor processing.	37
Dataset	A collection of data that is seperated systematically and co processed and manipulated by computers. Datasets are also com human-readable.	38
Decoding	Converting a piece of information into intelligible form.	35
Deep Learning	A machine learning technique that is inspired by the learni doing ability of human brain.	45
EEG	Electroencephalogram is a method to track the electrical activ brain	36
Encoding	Converting a piece of information into processable form.	35
Interface	The point where different entities meet and interact and commu through	36
LAN	A Local Area Network is a group of computers networkin distinct geographic area.	41
MIDI	An industrially standartized networking protocol develope computers and electronic musical insturments, typically de hardware interfaces.	.49
Modularity	The extend to which an integrated entity could be seperated i building blocks.	42
Motor Skill	Neural ability of muscle control and movement in body.	37
Multidimensional Array	A multi leveled collection of information or objects that are ar systematically. Multidimensional arrays are arrays that are m arrays.	46
Networking	The communicating in between computers to share resources.	45
OSC	Open Source Control is a networking protocol for synthe computers and other multimedia.	41
Out-of-the-box	The features provided that are immediately usable right unpacking the product	36
Parameter	Any specific determinant that is used to specifiy the condition o of a system.	39
Protocol	A set of rules for computers that communicate with each other.	41

Runtime Environment	A configuration of hardware and softwares that are required 45 computer program to function correctly.	
UDP	A communication protocol built on IP protocol that establishe 41 latency and loss tolerating connections.	

Appendix A

Project Meeting Report # [1]

Keywords: *Ideation, cut-up technique, common vocabulary, utopia/heterotopia, post-cyberfeminism, non-place/otherness, machine traits, emotions*

Items of Agenda

	Agenda	Notes
1	Preliminary discussion of concepts/ideas of collective interest to work with: Cyborgs/Hybrids, utopia/heterotopia, post-cyberfeminism, non-place/otherness	Creating links of these concepts was easy from existing references that we identified with but projecting our own ideas on how we want to work with these concepts proved to be
2	Defining conceptual ground of our initial pitch to Morten. Discussion about cybernetic systems and theories	We seemed to be getting lost inside of these concepts with no cogent links that were easily understandable amongst ourselves. It became apparent that it would be beneficial for all of us to self-educate ourselves on cybernetic systems and theories. The idea that a cyborg is actually a 'cybernetic organism' - is fundamental ground for exploring 'cyborgism' in
3	Design exercise: Identifying emotions that humans identify with traits of machines. Mix and match to see what combinations came up.	This exercise was a relief from the jargon we were attempting to define to one another. We need to do many more of these exercises to open up the blocks that come with approaching any new idea and its presuppositions.

Summary of Meeting

The first meeting was about hearing from one another about ideas/concepts that we want to work with and to see how we could connect these and translate as an interactive experience. To keep the ideation process fluid, we felt best not the discuss technological factors at this point and focus on building our conceptual ground. Initial discussion about cybernetic systems and theories made us realize how the context of our knowledge differs and to make the links we need to have MANY deep discussions and exercises that are seemingly random but built on keywords and notions that we want to reflect in our process. The following exercise [3] that we collaborated on was a result of our frustration to streamline our thoughts. It actually proved to be very useful and we ended up creating a strange vocabulary of sorts that read to us as disrupted analogies between humans and machines. It also gave us some context for the 'non-space' we want to address and explore further.

Personal Reflections

Uğur	Trying to understand the definition of a cyborg has been quite a struggle for me at the beginning. We all had a different understanding of what a cyborg is and tried to meet in a common point. Realizing trying to explain what we know about cyborg is not going to work out, we decided to leave our own perceptions of the cyborg behind and re-discover it visually and tangible materials like paper and pen. For this we created our own hetereotopian cyborg world. This helped us in a few ways. First of this provided us a starting point for our project where we can step out on it and explore the further discussions: *creating a non-space, borders, feeling of being the other and etc...* Second of all, we were more confident for not to limit ourselves with a theoretical cyborg definition, but instead base our inspiration on a more open-ended perception of a cyborg, a really core/essential understanding of cyborg: *any entity with human*
Alifiyah	Like with any new project, I felt initial apprehensions about how well our ideas would connect, and if I personally could create some legible meaning out of my own thought process. Moving to this non-verbal exercise was fun because that's when we loosened up and found a more organic way of communicating with no specific end result in mind. It also broadened our scope from prior influences to new territories where we consciously refrained from bringing in theoretical ground and instead, enjoy the absurd abstraction of the results that came up as a result of this exercise.

Magda	In our first brainstorming session it was natural to find ourselves frustrated with our communication as we jumped ahead and found ourselves overloaded with big theoretical concepts and jargon that we didnt't know how to connect together or explain to each other in simple words since we did not have a common ground where we could step on to. All we knew was that we shared personal interests in pursuing topics related to cyborgs, cybernetics and non places with the aid of technology so gravitating towards heterotopia, rather than utopian and dystopian themes maked sense to me. The cut up exercise was an exciting way of playing with language in a non cerebral way, it allowed us to bond and try to make sense of the hybrid vocabulary we came up with and try to take it further. Starting with this intuitive, meditative exercises proved useful to strengthen our communication and brings our different

Appendix B

Below the codes used for the project are served in GitHub with MIT licence. Furthermore, the libraries used in the project and a free software alternative for VDMX in sound manipulation are provided.

Github Page of the Project:	https://github.com/ugrky/WhenWor-l-dCollid
OpenCV - The computer vision library	https://opencv.org/
Keras - Neural Network API for Tensorflow	https://keras.io/
Tensorflow - Open Source Machine Learning Library	https://www.tensorflow.org/
Numpy - Scientific computing library for Python	http://www.numpy.org/
LiveProfessor - An alternative to VDMX for sound manipulation that has a free distribution. The software ha capability to network through OSC	http://audiostrom.com/