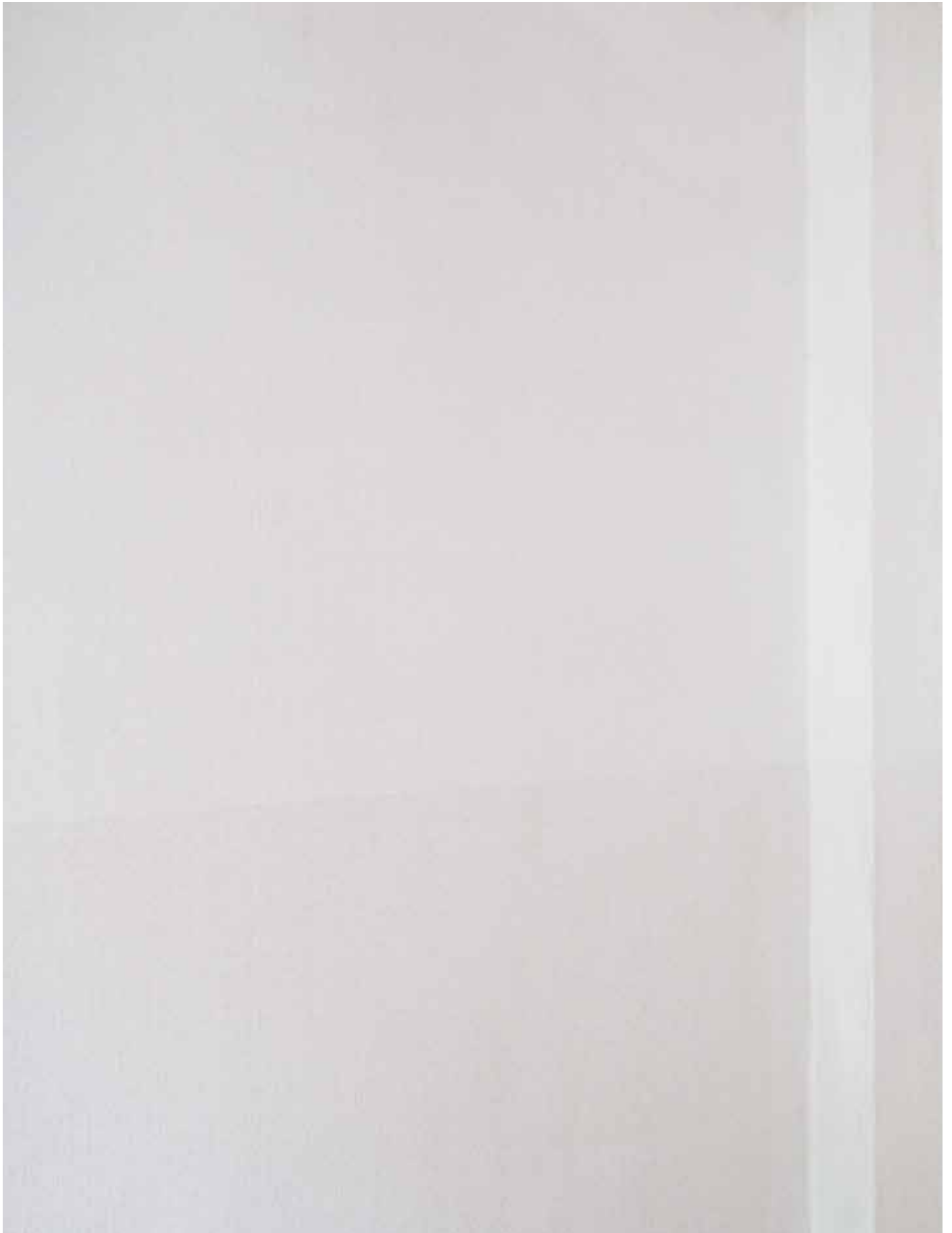


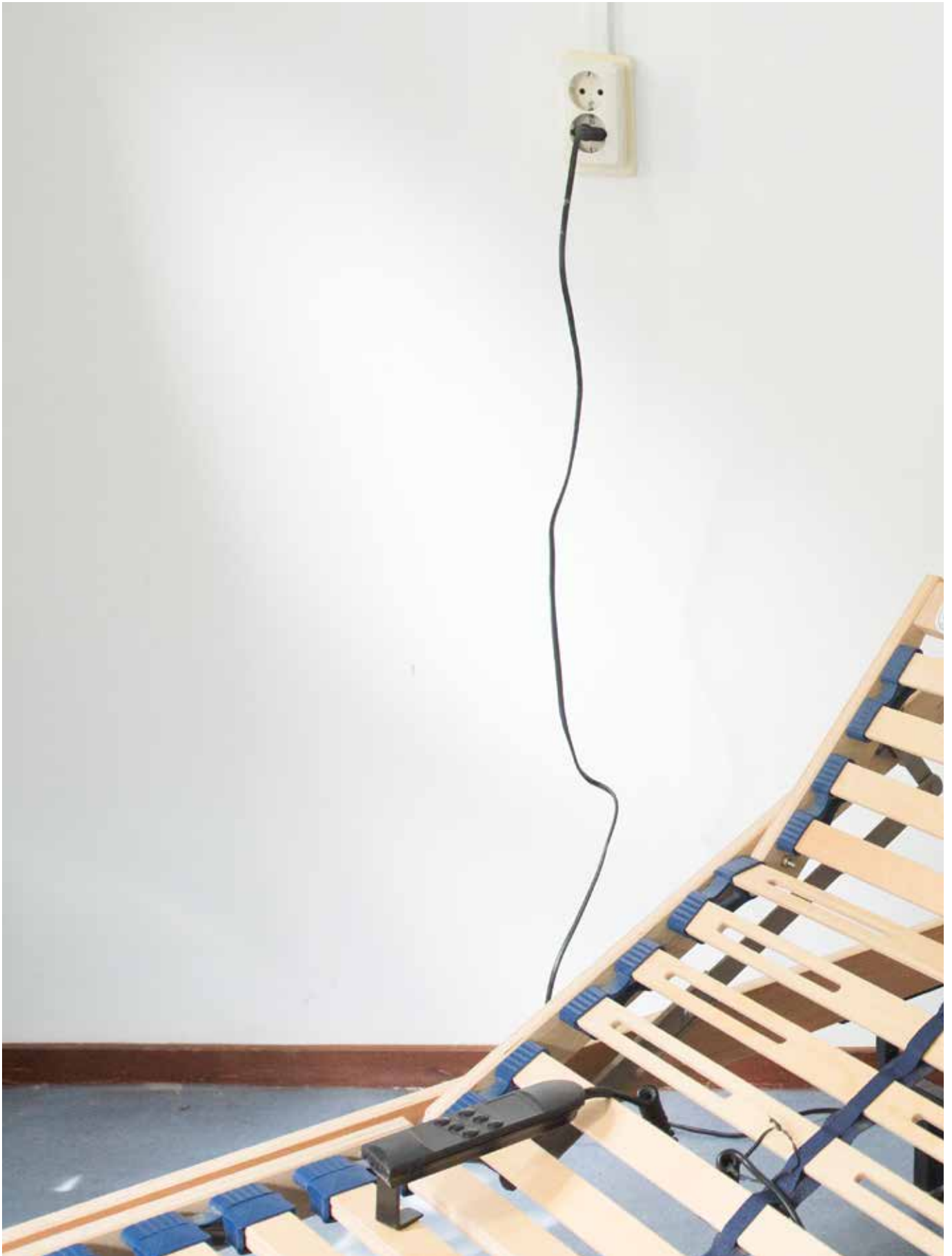
IN LOVING SUPPORT



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Het Nieuwe Instituut aims to
illuminate and map a rapidly
changing world while fostering
discussion of topics related
to the vast field of design.
All the institute's activities
are grounded in the principles
of design and innovation – two
concepts bound up with changing
value systems and conflict.
Het Nieuwe Instituut supports
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fellowship program, monthly
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Archis specializes in long term
research projects with a broad
variety of possible outcomes
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and interdisciplinary worldwide
network of individuals,
institutions and corporations.

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this publication by Simone C.
Niquille document the site of
the retreat, the Sonsbeek Inn
at Het Dorp, located on the
periphery of Arnhem in an
urban development designed and
built in the 1960s for people
with disabilities.

Marina Otero Verzier

RED TEAMING

The cubicle of the office and the library have been, to a large extent, replaced by the long communal table equipped and Wi-Fi connection. A flexible office; a loud library. Activities that were believed to require physical isolation and concentration are now entangled with mingling, sharing and networking, or what has come to be called co-working, the ultimate neoliberal institution. Boosted by private and public sources of funding that privilege crossovers, global networks, interdisciplinary and international teams, contemporary research is a collective practice. We are encouraged to 'put ourselves out there.' We work in Dropbox and Etherpad, have discussions in Whatsapp, meetings on Skype and Google Hangouts. And yet, we spend most of the time detached, whether it be physically removed from the bodily presence of others - connected, yet separated by a screen - or surrounded by them, but hopefully not bothered.

The idea of research has been long associated with imaginaries of withdrawal. Questioning existing forms of knowledge and advancing new ones was connected to the virtues of reflection and concentration, with limited influence from the exterior world, or constraining the field or parameters. Its role models were the anchorite, the mystic, the philosopher, the scientist. Its spatial manifestations ranged from caves to testing rooms, from the Ph.D. carrels to research residencies in cabins in the woods. Research was the art of negotiating the state of being removed from society while remaining professionally relevant to the society at large.

In the last decades, that imaginary turned outwards. The world itself was claimed to be the laboratory. The city, too. With no distinction between inside and outside, where circulating facts are not necessarily confirmed or denied, research becomes, as an intelligence officer for the US Department of Defense once claimed, becomes a sort of 'red teaming', the practice of analyzing tactical alternatives.¹ Research demands the ability to navigate the excess of information and multiplication of media to distinguish signal from noise. In that process, value is no longer linked solely to what a person knows or owns, but to her capacity of threshing out and sharing.

Inspired by previous experiences and these imaginaries of collective research, Het Nieuwe Instituut and *Volume* invited a group of people to retreat for four days into the woods - a purposely low tech environment - and explore the possibilities and consequences of employing artificial intelligence in the practice of research. We combined co-working with withdrawal and embraced research as *re-search*. *Re-* not as a repetition towards excellence, but as an opportunity to depart from conventional modes of. We sought to destabilize routines as much as construct new ones. We cooked together, ate together, partied together, watched and listened together. We walked with each other, talked with each other. We shared tables, playlists and bathrooms. We didn't try to reach common ground, so we didn't. We had agreements, and heated discussions. Some left early. Some came late. Some just dropped in and joined for the fun.

The retreat was meant to serve as a catalyst for new perspectives on the relations between machine learning and research, including questions of authorship, copyright, and originality, as well as the transformed condition of labor under general processes of automation. However, reflecting on artificial intelligence and its relationship to research - as currently valued according to 'red teaming' security frameworks - triggered a rumination on otherness, both *the other* within oneself (an unutterable desire to be different) and in terms of construct social identities and relations. Bearing uncanny resemblance to the activities of military strategists operating in foreign territories, the retreat's participants ended up questioning how algorithmic entities can assist in negotiating this topological terrain of otherness. A bot that brings a counter argument to our arguments; a critical voice who doesn't fear your reaction; a disobedient worker, though unable to know whether for reasons of willing refusal or technical malfunction; an uninvited outsider, able to challenge existing power relations like gender unbalance and the geographical origin of sources and languages; a bureaucratic destabilizer, to intervene between funding and research; someone to implement all of your decisions; something that would free you of the burden of having to physically interact with, please, compensate or credit others; a bot that can be turned off. ✓

¹ In an interview with Gary E. Weir (Chief Historian, Office of Corporate Communications, National Geospatial Intelligence Agency) conducted by the author at the NGA headquarters in Springfield, Virginia, on December 12, 2012.

Klaas Kuitenbrouwer

THINKING WITH MACHINES

In the last few years the social presence and role of machine learning has been subject to a major shift. Relations between human and machinic ways of learning have seemingly entered a new phase. Machines that can learn were built as early as the 1950s: Marvin Minsky's *SNARC*, the first neural net capable of learning from direct (albeit limited) experience, was built in 1951; and Theseus, a robotic mouse that could learn to solve a (simple) maze by doing a few trial-and-error runs was demonstrated by Claude Shannon, 'the father of information theory', in 1952. And while there is no single recent breakthrough to point at, gradual developments have gained a cumulative effect.

The structure and function of early neural net technology triggered fundamental debates about the nature of thought processes and consciousness. These theoretical discussions gave rise to, in retrospect, exaggerated expectations of the dawn of artificial intelligence in the twentieth century. Indeed, no weakly godlike machinic superbrain gained conscience and decided to 'take over' (although we can't fully dismiss this thought - it might be so smart it decided it was better to not draw attention to itself).

From the early computers built during WWII to today, the increase in density of integrated circuits and the related computational processing power has followed Moore's Law, doubling roughly every two years. New algorithms for the recognition of patterns in data have been developed and new ways of programming have been adopted (although nothing as coherent as Moore's Law has been identified for software development). Furthermore, the growth of the internet and the double explosion of mobile and social media gave rise to a deluge of data - the medium by which computers perceive reality.

All together, these technological advances have led to a vast augmentation of computers' observational powers, which in turn brought about artificial forms of intelligence. At this moment, machinic varieties of the human capacity for synthetic, qualitative judgment seem to be developing. More precisely put: quantitative methods have developed to the extent that they produce outputs that are qualitatively comparable.

The victory of Google's *AlphaGo* program over the professional 9-dan Go player Lee Sedol in March 2016 can be seen as a symbolic milestone to the increased significance and capability of machine learning. The game of Go has very simple rules, but they play out with an enormous degree of mathematical complexity, not to mention requiring a semblance of creativity to be played well. In a wider, more practical sense, algorithmic learning systems are increasingly doing work *beyond* the capabilities of human specialists in the fields of medical diagnosis, market profiling, security assessment, industrial design, academic research, economics, traffic control, weather predictions, and more.

This is not the AI of the Skynet variety. The ideas of 'strong AI' of the late twentieth century turned out to be hopelessly anthropocentric. This is a different kind of machinic cleverness that is technically well understood, but still hard to grasp in a philosophical and cultural sense. The groundwork has been laid though: the current geological period has been labeled the Anthropocene, the age in which humans are the prime cause of geological and biological change. Understanding the contemporary world through the lens of the Anthropocene is a new way of recognizing the ways in which our culture, science and technology have always been human-centric, and now more than ever problematically so. This calls for new efforts to expand the conception of and sensitivity towards non-human and post-human perspectives and experiences. Plant-like, ant-like, even river-like, and certainly also cyborgian and machinic forms of intelligence are among those phenomena that ask for a new, non-anthropocentric way of understanding the world we live in. ✓

ARTs

As a kind of action-design approach to develop new perspectives on relations between machine learning and cultural research, we retreated into the woods of Arnhem at the invitation of Sonsbeek International with the aim of developing a design brief for what we 'Algorithmic Research Trainees', or ARTs. Prior to the retreat we saw the ARTs as a troupe of computational agents that could respond in more-or-less meaningful ways to more-or-less qualitative research questions. This description served as a beacon, or placeholder, in the conversations that took place between the retreat's participants, which included experts, amateurs and novices. But as we explored different aspects of the issue, the pragmatics of cultural researchers and the desires articulated around it, this beacon turned out to be something that we had to steer around. The resulting design briefs at least suggest that the ARTs could be *trainers* as well as *trainees*, and rather than tasking them as programmable assistants or machinic companion species, ARTs could function as a site-condition and environment for research itself. It turned out that our own starting points were not nearly as bot-centric as the positions we arrived at...

Brief #1 →p.16

CAIC

Brief #2 →p.28

DISCO-

IF DOGS WOULD DESIGN PERFUME

Machine learning is used in so many contexts that it has been dubbed the 'God Algorithm' for its capability to deliver significant results in very different problem domains.¹ Though if it were indeed the 'God Algorithm', artificial intelligence would be a polytheistic affair, as machine learning is not one algorithm but a large and diverse family.² What many of these algorithms have in common though is that they require training. But what is this 'training' and how does it compare to notions of learning that we humans are more familiar with?

No machine learns anything in the way that a human being does. The training of a human being to become accomplished at any task has few parallels in the natural world. A calf can stand up and walk, although with an unsteady gait, within hours of being born. Humans however are pretty much helpless for much of their drawn-out childhoods; the longest of any mammal in fact. It purportedly takes an estimated 10,000 hours of practice for a human to become good at a craft, like cooking, cabinet making, glass blowing, salsa dancing, flying an airplane, computer programming or playing football, and to excel takes even longer, in the order of a decade. Craft requires a complex set of interdependent skills, which are learned in various ways, such as observation, tasting, theory and practice. Lots of practice. The fact that it takes so long to become excellent at something means that the most talented and motivated humans will only ever become really good at maybe six, seven things in their entire life. That's it. That's the pinnacle of achievement for one person's life, and many never get anywhere near.

A computer, 'learns' very differently. Computers cannot deal with concepts - they cannot manipulate ideas - so they can't really 'learn' theory. They can only manipulate numbers. A machine 'looks' at an image in the same way that a human looks at a spreadsheet: merely as an ordered arrangement of numbers. A face recognition algorithm, for example, never ever

actually gets to see a face as we see a face; face recognition algorithms are trained on pictures of faces, not on faces proper.

Humans recognize people not just by looking at them and forming a visual impression but from a diverse set of cues that include visual ones, yet not limited to them. Blind people, for example, are perfectly capable of recognizing other people, and conversely there exists a cognitive disorder known as prosopagnosia where a person's capability to recognize faces is impaired even though their capability to actually see the face is not. When we first meet a person we can also feel their presence; we can hear them and probably smell them too; we relate them to the place where we met or with whom they were with, as well as many other cues that only all together shape our ability to recognize and know them. All that a machinic face recognition algorithm has (at least at the time of this writing) is an image of a person's face. The problem posed by representation is well known in the arts. Margritte's painting *The Treachery of Images* states "this is not a pipe", but is a depiction of one. In the field of artificial intelligence the problem of representation is not really addressed; the field is at a stage of development in which a picture of a thing and the thing itself are considered to be the same.

These two images could plausibly be used to train a machine learning algorithm to recognize smoking pipes. But while they are both pictures of pipes, their meanings differ greatly.



As concepts from computer science seep into popular culture and talk of both algorithms

and artificial intelligence becomes more commonplace, it is important that we become aware of the myths that form around our understanding of them. These topics are often treated as black boxes, boxes about which we know nothing whatsoever of their internal workings. It is perhaps this unknowable nature that makes them the subject of our anxieties in an age in which most of the technologies around us present themselves, like the monolith in Stanley Kubrick's *2001: Space Odyssey*, as featureless slabs with a smooth finish. Our scarce understanding of these agents makes their agency incomprehensible and impenetrable to us, producing outcomes that are essentially alien.



Evolved Antenna, 2006, NASA.

When humans engage with a new problem they bring with them their entire frame of reference. They drag all their knowledge - what they've learned, their histories and experiences - into the domain of the problem they are trying to address. A radio engineer, for example, will understand the scientific principles of antenna design and will try to 'design' a new antenna by applying those principles in different ways.

Computers, on the other hand, approach problems in a different, alien way. Take, for example, the exceptionally useful 2006 NASA ST5 spacecraft antenna. It performs well under very complex conditions - it's used in satellites containing measuring equipment - and is both easy and cheap to manufacture. Yet its shape is completely alien to any other antenna that came before it. This is because it was not so much designed as it was *evolved*. It is the result of a computational exploration of all shapes theoretically capable of radio wave reception and the progressive elimination of less-than-ideal forms. This process is known as an 'optimization'.

It is almost like trying to pick a lock, only if every combination tested would give you a clue as to how close you are to your goal. In the case of a three-number combination lock, we have three variables. The 'design space' of the antenna however, has many more variables, so trying out all possible combinations 'by hand' becomes daunting pretty quickly. This problem is perfectly suited for a computational approach.

There's a fundamental alienness to this antenna that is present in other products of algorithmic processes as well. Even when we are capable of validating these products and understand how to use them, the alien agency that sprang them into existence is fundamentally impenetrable to the human. It is not computational speed alone that makes this creativity alien. Its alienness is closer to what Thomas Nagel describes in 'What it's like to be a bat?':

"Our own experience provides the basic material for our imagination, whose range is therefore limited. It will not help to try to imagine that one has webbing on one's arms, which enables one to fly around at dusk and dawn catching insects in one's mouth; that one has very poor vision, and perceives the surrounding world by a system of reflected high-frequency sound signals; and that one spends the day hanging upside down by one's feet in an attic. In so far as I can imagine this (which is not very far), it tells me only what it would be like for me to behave as a bat behaves. But that is not the question."³

In short, we lack methods to extrapolate the inner life of the bat and understand what it's like to be one, just like we lack methods to understand the mechanistic *subjectivity* of the algorithm. We humans lack the perceptual faculties to see in the dark, just as we often miss patterns that might be obvious to the alien sensibility of the algorithm. The whole cosmos of conditions in which algorithms operate - from the colossal stores of data, the symbolic definition of problem domains, the massively parallel computational platforms, the nanosecond timeframes and the huge array of both generic and custom algorithms operating on this data - all produce outputs that are nothing like that of a human. This algorithmically-trawled landscapes shaped by mountains of data might be created by human activity, but we have no perceptual capacities to exist within it.

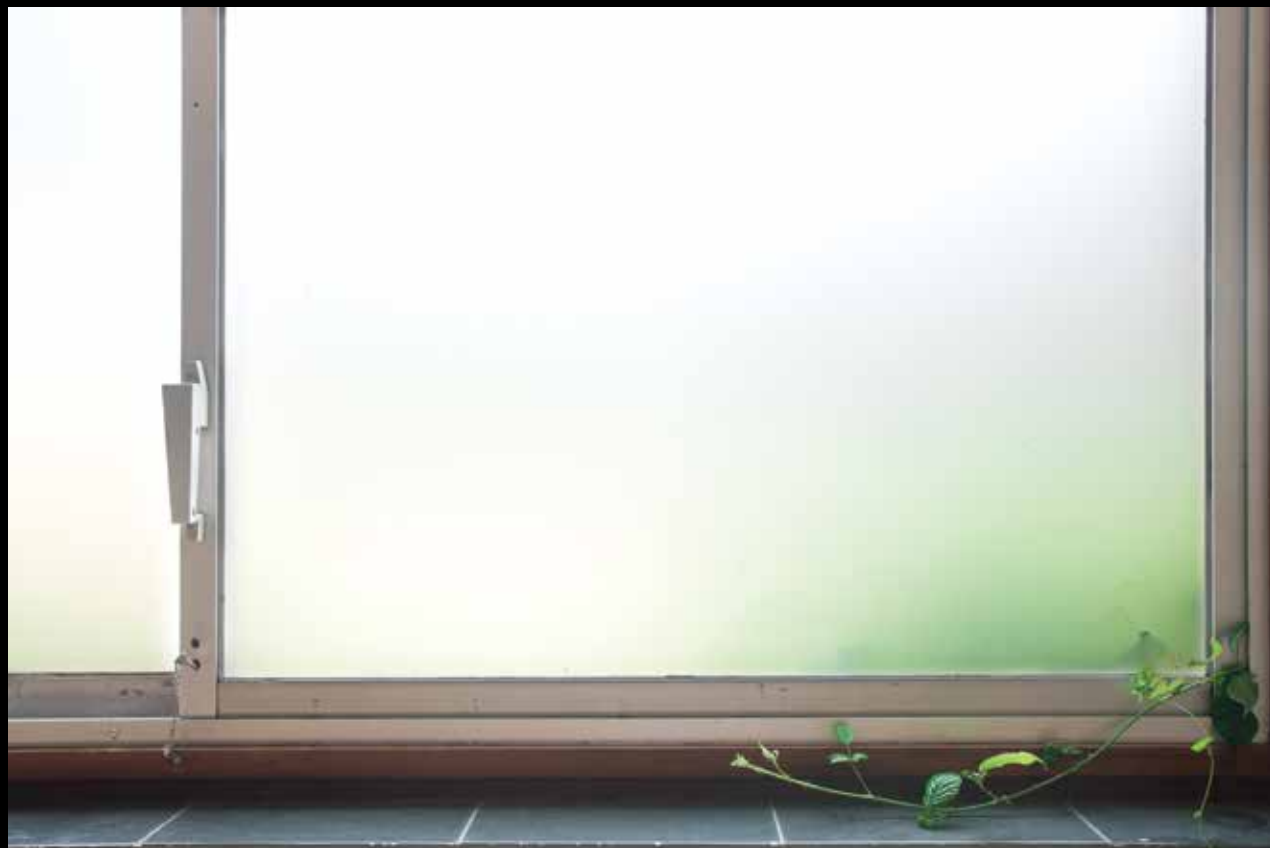
Digital computers are exceptionally good at manipulating numbers. In fact that is all they do; that is what they were designed to do and that is all that computers have ever done. Imagining what a machine learning algorithm can do in a world of data is comparable to speculating on what fragrances a dog might come up with if it were to

design perfumes. While a potentially interesting thought experiment, it is one that is outside of our perceptual range. AI is becoming a form of infrastructure rather than a tool for discrete tasks; an infrastructure with its own agency and potentially even will of its own, and there's precious little we can do to control it. Everything that is digital, every picture, every playlist, every like will be concocted into new alien perfumes. We can only wait to discover their scents. ✓

1 Memo Atken, 'A digital God for a digital culture. Resonate 2016', *Medium*, 26 April 2016. At: <https://medium.com/artists-and-machine-intelligence/a-digital-god-for-a-digital-culture-resonate-2016-15ea413432d1> (accessed 1 Aug 2016).

2 Nick Romeo, 'The Search for the God Algorithm', *The Daily Beast*, 21 October 2015. At: <http://www.thedailybeast.com/articles/2015/10/21/the-search-for-the-god-algorithm.html> (accessed 1 Aug 2016).

3 Thomas Nagel, 'What is it like to be a bat?', *The Philosophical Review*, LXXXIII, 4, October 1974, pp. 435-450.



Matthew Plummer-Fernandez,
Ben Schouten and Nick Axel

BEING FREE

Ben Schouten: What is the role of the algorithm in your work?

Matthew Plummer-Fernandez: It's mainly a tool. But it's a tool that allows me to detach myself a little bit from the output. So it also becomes an intermediary between myself and whatever's being made. It has a certain degree of autonomy, but I prescribe it. And in a way that tool sometimes becomes as important as the output. Final objects and final images are part of what I do, but my projects are more like systems.

Nick Axel: Algorithms are almost by definition machines of control, or control-based machines. So how does the question of freedom get factored into your use of them?

MPF: There's control in defining its parameter space - so you can say I want all my objects to be between this color and that color or this height and that height - but then there's an element of serendipity, of where things might land within that space. A lot of my projects draw upon external inputs, and that's where control suddenly opens up and slightly disappears, because other people contribute to the system. So if it's like finding 3D models online, I have no control over what those models are of or which will be found.

BS: It's like you're seeding these algorithms; it's a seed from which things grow. That's interesting, because algorithms tend to automate, while you seem to use algorithms to free yourself. This randomness you bring in carries unexpected surprises and a playfulness that you couldn't have thought of yourself.

MPF: I find sole authorship, that you have to question everything you've done and take responsibility for everything, a bit of a burden. But when you create that space for serendipity you kind of welcome the unexpected.

BS: But does that mean you make yourself immune from criticism? That you can blame the algorithm?

MPF: It's not necessarily a get out of jail card if anything goes terribly wrong. I still have to take responsibility for the system and put in some safeguards, but it's kind of like a shared authorship: it's neither solely myself nor solely the system.

BS: I like that, because that's also in the essence of play; there are always some systematic elements to it. But if we go further and think about play theory, Roger Caillois says there's two forms of play: there's '*paidia*', which is when we are completely free without any boundaries, like what we do when we're scribbling, something with no purpose, and then there's '*ludus*', which always creates rules. Everything we do tends to end up in rules, so Caillois's theory is that we tend to move from *paidia* to *ludus*. So how do you get yourself, or how do you keep yourself free?

MPF: I mean, programming in general doesn't seem like the most playful area. Everything is so codified - literally - and strict. But I think there are various strategies, like increasing complexity and randomness, that increases the feeling of freedom. Bringing in external inputs definitely opens up more play. It's a difficult question though, because even humor has some sort of structure to it. Just pure randomness won't result in anything that we can ascribe humor or aesthetics to. There has to be some sort of structure to provide a framework for meaning and interpretation.

NA: I think this goes back to the question of authorship. Ben, in your work, you really see play as a way to engage others, but Matthew, I'm curious because there's absolutely playfulness within your systems, but what does it mean to play with these bots?

MPF: I don't make interactive work as such, so the consumption of the work is a bit of a bully; it's playing with other people but it doesn't let them take any kind of role other than the role it expects of them.

NA: But it does give people something, which you already mentioned: humor. Can you talk more about how humor operates in your practice, and also maybe what humor means within the algorithmic environment you're working in?

MPF: With any kind of new system or technology I try to look at some of its faults and pick on them. So if I see computer science paper on machine learning, I'll go straight to the failed attempts, and take delight in those failures. Because in a way it's easier to have empathy with a system or a machine if you accept its faults. So my project *Novice Art Blogger*, for instance, was this image classification system that tried, but simply could not describe art. It's more fun because it brings art criticism down to the level of a faulty system that we can all identify with. I try to change the perception of technology as this high-performing perfect system, optimized for best results, to the humorous, dumb, not-quite-good-at-what-it-does-but-that's-ok.

BS: An essence of play is failure. Does your system dare to fail? Can it fail? Or is it always good?

MPF: I think it just stumbles. It's clumsy. It doesn't really fail, but it just barely succeeds.

BS: The notion of failure of course has to do with value systems. You can only fail according to certain values; so if you don't have values you can never fail. What value systems are at play in your work?

MPF: The value system for my projects is the context in which it operates. So if it's a project about art criticism, then that's the value system. If it's about generating sculptures, then it's about good or bad sculpture.

BS: Traditionally, people use words to perform critique, but you're using algorithms. It's systemic critique, and that's quite extraordinary. There needs to be a certain quality in these algorithms to do that. What are the qualities that allow you to do that?

MPF: You know, just to take a value system seriously is already a way of finding some sort of weakness in it. And the role of my bots is to expose that value system and make people question it. And that's always quite easy to do.

BS: So the algorithm can never have a value in itself?

MPF: I find that the value it acquires is actually given to it. It requires an audience to give it value. By itself it cannot create anything of value, but when people say "I really value what this bot has done or said," that's what gives it value.

BS: So what you do is you give opportunities for people to express their own values, to do something with them. Can you elaborate on the social dimension of your work?

MPF: It's more passive. My bots aren't directly interactive, but they always output some sort of social media on some platform. And what tends to happen is there will be a gang of bullies who will not like the project, but then there will be a smaller minority that then adopts the bot and defends it within its system. That becomes its social engagement. The bots don't necessarily have much of a social voice, but people can stand by their side and stick up for them.

I don't engineer the social element so closely. That's always very emergent in every project. Some bots have a much stronger mobility in certain communities and some bots just end up getting lost and being ignored in the end. So it's really hard to gauge what bots will hit it off with an audience.

NA: Yet the same thing happens with play, no? I mean, you can create the most playful scenario, and yet people may still just not be into it. But to bring this back to the question of values and failure, in play, there's always a boundary; you can always go too far. Have you ever felt *bad* about a project of yours?

MPF: A good example of that is *Shiv Integer*, the bot I made with Julien Deswaef that goes on Thingiverse and mashes up peoples models. The first two weeks I was receiving *so much* hate mail. I think on one day I got about one hundred emails of just pure anger. And I felt really bad, I was ready to pull the plug on the project. We were expecting to annoy a few people but nothing on this scale.

People were saying that this is spam, that a moderator needs to come in and delete the account, etc. And just a lot of swear words. Even racial slurs, which was quite bizarre, because some people hadn't even thought of it as a bot but instead some spammer from India or something. We were just mobbed by all this hatred, and for a while I was starting to feel really depressed. The first two weeks was just like, "What have we done?" "How have we created such an offensive thing?"

BS: So you create something that you don't know what the end results will be, kind of like when you paint, you have a painting, and you only know it's done when you're ready and you hang it.

MPF: Exactly. I mean I did that project almost as a reaction to being pulled into a more contemporary art world, where discourse was already in a gallery space, where everything was acceptable because it was art; it had a certain audience who was already sold on going to the gallery in the first place. But when you put work into some sort of community who isn't expecting it, and it directly links to the work that *they've* contributed, it opens up a lot of unknowns. I mean it did eventually evolve into very healthy conversation with people arguing for both sides of whether this is good or bad or whether it is art or not, but for the first two weeks it was very one sided.

In the end it found the right allies. That's one of the things I like the most about the project, that the social element was so extreme, that it wasn't just a benign presence, but that it had really strong reactions of both love and hate. To get that you have to dare to push boundaries in both directions. ✓



CAIC

Computational Agent for Institutional Context

Klaas Kuitenbrouwer, Marina Otero, Katia Truijten, Matthew Plummer-Fernandez, Luis Rodil-Fernandez, Lilet Breddels, Ben Schouten

Coming up with a brief¹

This design brief is by no means the result of an orderly process. It is partly reverse-engineered from the sketch proposals for ARTs on the following page, and the rest is the residue of chosen positions in contextual narratives, leaving a lot behind at the rhetorical roadside.

Considerations about the intended nature of ARTs in general and ours in particular

Any ART is a techno-social construct that embodies a set of techno-political principles. Our ARTs construct cannot be naïve in this sense: it aligns itself with certain aspects of the current computational infrastructure, and resists other parts. Our ART is compliant with concerns about data ownership and transparency. It will respect the privacy of human users, but its own code will be publicly available.

Our ART is not an agent of automation, meaning the replacement of human labor processes by machinic labor with a similar or optimized output. The primary capacity of our ARTs should be that of providing non-human, algorithmic gazes on cultural practice, and of doing 'work' that necessitates these gazes.

The problem space in which our ART should intervene

This ART should intervene in research practice in the cultural domain, in relation to questions that require the intersections of different registers of knowledge. This ARTs performance should relate to modes of research that intend to venture into spaces between different actors and practices in the field, such as academic discourse, design methods, artistic research, science practice and other conceptualizations from different disciplinary vocabularies.

Cultural institutions are important players in this space, one that is full of interesting tensions.

Inter- or postdisciplinary work requires new, peculiar but thorough conceptualization, or else runs the risk of not reaching sufficient depth. In spite of this, knowledge validation is often performed according to disciplinary parameters (or along criteria of shortsighted economic profitability). Funding schemes for research proposals also tend to follow the agendas of disciplinary networks. Furthermore, practice-

based research and more logocentric academic research often fail to find productive modes of translation or even communication.

In the face of massive societal transformations that, among other things, create the need for postdisciplinary approaches to research, Institutional behaviors operate between archiving – sometimes canonizing or fossilizing tendencies – and continuous attempts at renewal.

The problem space for our ART to intervene in is not that of research itself, but rather the institutional conditions that may foster new kinds of interdisciplinary research.

So, the design question

This ART should be an automated computational agent, potentially a bot or collection of bots that provokes new institutional behaviors and modes of operation that can foster new research practices in the cultural domain. This ARTs core abilities revolve around machinic kinds of non-human perspectives on (largely human) culture and institutional behaviors. As trainee, it should be able to learn and to adapt its behavior, based on selected inputs. As trainer it should be able to present humans with alternate views on their surroundings.

1 2016-06-02, 10:30-11:00

Metaphors: ART as sidekick, ART as alter ego, ART as Jungian shadow, ART as companion species, ART as parasite, ART as prosthesis ... or ART more like a conditional environment; an institutional context...?

2016-06-02, 11:15-11:40

2 In what kind of computational context do ARTs exist? A libertarian space? A communitarian space? A kind of 'ecology'? A garden, or a jungle?

2016-06-03, 11.10-11:20

In computer science, 'institutions' are technical frameworks that allow for the combination of and translation between different logical systems.

2016-06-03, 13:00

MPF built and released the Twitter bot @InstituteOf that creates and posts the titles of possible institutions.

2016-06-03, 16:00-17:00

Crucial aspects of the role of institutions in the cultural domain: generating cultural memory, an archive. With this comes the risk of fossilization, of only reinstating fixed positions. Could computational agents play a role in stimulating the renewal of institutional behaviors?

2016-06-04, 10:30-11:00

Destabilization of institutional practices in the hands and minds of capable hackers suggests practices that would not necessarily be in the interest of the involved institutions.

BOT CONCEPTS

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and Matthew Plummer-Fernandez

@InstituteOf

Matthew Plummer-Fernandez
github.com/plummerfernandez/InstituteOf

INSTITUTIONAL SIGINT BOT

Generates an alternative situational awareness and overview of what is going on within and around an institute. A bot whose task it is to collect intelligence on the relationships or potential affinities that a given institution has with other actors: other institutions, city councils, central governments, housing corporations, machinic environments, landscape elements, technical infrastructure, universities, organic ecology, designers, artists. The role of this bot is to shine lights on patterns that might not be evident or visible to human agents.

MEMORY AGENT

A computational agent that prescribes certain particular modes by which institutional memories are generated in the context of a research project, and presets the technical environment to do so. A bot that mashes up and reconfigures the trail of memorialization produced by the institution by operating on archival material, documentation and issuing products of 'equivalent material' that become part of the archive.

INSTITUTIONAL FORK BOT

A bot that generates future scenarios or alternate histories for institutions by looking at the organizational unconscious, providing:

- a title
- a history
- a brief history of its major achievements
- a modus operandi
- a way of communicating with its surrounding

INSTITUTIONAL ENDOGAMY BOT

A bot that tracks relationships between the humans in a set of institutions and suggests, subverts, or diverts possible org-charts. It develops a relational understanding of how different people in different institutions contribute to an area of knowledge or practice. The bot deals with multiple outputs from each individual institution and articulated and configures in-between institutions.

PUBLIC FORMATTING AGENT

A computational agent that prescribes particular modes by which research is to be made public and presets the technical environment to do so.

The Right Institute for Individuals

The Arabic Institute for Friends

The Savage Institute of Wounds

The Leaky Institute for Lifeboats

The Anonymous Institute of Notices

The Such Institute of Journeys

The Own Institute of Freedoms

The Quick Institute for Strikes

The Enormous Institute for Installations

The Medical Institute for Certificates

The Delicate Institute for Balances

The Standard Institute of Visibilities

The Legal Institute for Advisers

The Sacred Institute of Texts

The Literary Institute for Values

The Commercial Institute of Bottles

The National Institute for Defenses

The Scientific Institute for Progress

The Formidable Institute for Instructors

The Own Institute of Nauseas

The Rear Institution for Bulkheads

The Angular Institute of Deviations

The Separate Institute of Camps

The Fervent Institute of Verses

The Greasy Institution of Soils

The Inadequate Institute of Reliefs

The Mathematical Institute of Models

The Late Institute for Stages

The Accurate Institution for Knowledge

The Statutory Institution for Authorizations

The Precious Institute of Metals

The Mighty Institute for Tractors

The International Institution for Inspections

The Local Institution for Regulations

The American Institution of Settlements

The Russian Institute for Fleets

The New Institution for Clouds

The Unexpected Institution of Results

The New Institution of Sites

The Watery Institution of Messes

The Free Institute of Copies

THE PRACTICE OF RESPONSIBILITY

Issues of responsibility are central to ethical concerns about artificial intelligence. Who will be responsible when these increasingly complex technologies behave in unpredictable ways, or in ways that their human operators do not understand? Will a day come when robots themselves are considered responsible for their actions? The assumption that often underlies this concern is that human actors will not be able to properly control future computer systems and robots, equipped with artificial intelligence and machine learning software, because the behavior of these machines would be too complex and unpredictable, and that when humans can no longer control these technologies, they cannot be held responsible. In other words, the more intelligent and autonomous technologies become, the less responsible human actors will be. However, this is a problematic assumption because it blinds us to the choices that we *can* make in designing AI technologies such that they support a clear distribution of responsibility. To bring these choices into view, we have to take another look at how we deal with responsibility in practice.

Concerns about responsibility and the loss of control are not new or even particular to present and future AI technologies. In practice, it is often difficult to ascribe responsibility at all, and especially when technology is involved. Human actors are embedded in sociotechnical networks in which tasks are distributed among many human and technological components, that mutually affect each other in contingent ways. Other people and technologies in any network limit an individual's control of how events unfold. Moreover, they constrain the choices that can be made. The operation of a robotic system, for example, requires multiple operators, engineers, mechanics, and users, whose actions are in turn guided by business interests, policies, regulations and legislation developed by politicians, inspectors, managers, financiers, etc. When something goes wrong, such as an unmanned aircraft crashing in the desert, it can be a challenge to determine whether it was caused by an external event, a design error, the mistake of an operator, a lack of training or safety precautions, or all of the above. Was it a badly designed

console, or did the operators not properly follow protocol? Or was it that the operators were not supervised properly or trained sufficiently?

Ascribing responsibility when technology is involved can be difficult, but that does not mean that no human actor is responsible. When it comes to making people answerable for the consequences technology, all kinds of strategies have been developed to deal with uncertainty and the limited control that individuals have. There are, for example, legal constructs like 'due care' and 'no fault' to attribute blame or call upon individuals or companies to make amends for untoward events. These laws are codified norms that reflect generally accepted ideas about control, authority and duties. They suggest that even if someone could not directly control or comprehend the outcome of their actions, their actions and decisions did influence the events to enough of an extent that they should be held to account. Practices such as these express a particular conception of the relationship between control and responsibility. The various kinds of strategies to ascribe responsibility are not only legal constructs; they may also be part of the formal or informal norms within organizations that articulate expectations about responsible behavior or about how individuals can hold others to account. These strategies are not only about assigning blame, but also about learning from failures and minimizing the risk of untoward events happening again.

Strategies to hold people responsible in the face of uncertainty are part of what I call 'responsibility practices'. The notion of responsibility practices refers to the established ways that people within a particular environment or moral community understand and ascribe responsibility based on shared values and ideas about fairness and utility. These practices involve accepted ways of evaluating actions, holding others to account, blaming or praising, and conveying expectations about obligations and duties. They pertain to various kinds of responsibility, such as accountability, role responsibility, legal responsibility, and moral responsibility. They are the outcome of negotiations about what it means to make independent decisions and to be in control.

Responsibility practices are both forward- and backward-looking. Forward-looking responsibility practices articulate and reify expectations about future tasks and duties. Such expectations might be spread through instruction manuals, ethical codes, observation of past practices, training programs, directives, policy, regulations, laws, etc. When members of community fail to live up to these expectations, accepted accountability mechanisms allow others to call upon these members to explain and justify their actions. These mechanisms are part of backward-looking responsibility practices. Such practices involve the various ways in which actions are evaluated, accountabilities established and blame or praise attributed. For example, when a serious accident occurs with an autonomous car on a public road, local authorities may launch a formal investigation, an affected individual may sue the car company for damages in court, and managers and project leaders within the company might question developers about what happened to determine whether there were any wrong doings.

Responsibility practices are not stable; they are continuously challenged and renegotiated either as new points of view are brought to bear or as a result of external factors. One external factor that can challenge existing practices is the introduction of new technologies, because new technologies tend to change the way people do things and lead to new arrangements between things and people. Technologies can facilitate and enable new actions or attitudes, while constraining, discouraging and inhibiting others. Their introduction may, thus, lead to shifts in responsibilities and disrupt established ways of doing things. Take for example automated public administration systems: the introduction of an automated system may limit the decisions that human bureaucrats lower in the hierarchy had prior, while increasing the responsibilities of their superiors and the developers of the systems.

As tasks are delegated to new technologies, new responsibility practices are negotiated and established. These negotiations are about how responsibility should be interpreted and how it can be best ascribed. In order to operate a new technology effectively, users typically have to go through a process of training and familiarization with the system. It requires skill, knowledge and experience to understand and anticipate how the system will behave. A lack of understanding can cause confusion about who is responsible for what. Moreover, because new technologies allow people to do things they could not do before, there tend to be no clear rules and norms in place to regulate this behavior. The social or legal conventions that govern the new modes

of behavior that these technologies enable may take some time to emerge, yet the initial absence of these conventions triggers discussions about who can be held responsible and for what. For example, the ability for users to upload and share text, videos and images publicly on the internet has raised a whole new set of questions about who is responsible for the content of the uploaded material. To what extent are Google and YouTube responsible for what is published on their sites? As developers, operators, users, policy makers, lawyers and others become acquainted with the possibilities and limitations of new technologies, expectations about what various human actors should or should not do evolve further. Protocols and codes of conduct are developed, laws are formulated and implemented, and new norms emerge.

Negotiations about responsibility practices can be about what is expected of the human actors involved, how those expectations can be promulgated and how actions can be evaluated, but they can also be about technology itself. The role of technology is not a given and neither is its design. How they enable human beings to be responsible is part of the negotiations. The growing familiarity with and understanding of the possibilities and limitations of a new technology may lead to adaptation and adjustments in the design. This has, for instance, been the case for military drones, which were initially rushed onto the battlefield. Designers were primarily concerned with making sure that the aircraft would stay in the air, and that it could be remotely controlled through satellite linkages. Less attention, however, had been paid to the design of the interaction between operators and the technology. Several reports showed that confusing and opaque interfaces have contributed to a relatively high number of mishaps. In response to these shortcomings, designers turned their attention to the human factors involved in operating remotely piloted aircraft. In the US Department of Defense's 2011 'Unmanned Systems Integrated Roadmap', for instance, emphasis was placed on such things as "designing the entire autonomous system to support the role of the warfighter and ensure trust in the autonomy algorithms and the system itself." In short, technology should enable the warfighter to perform his or her tasks responsibly.

Like other new technologies, the introduction of AI will change human activities and the relations between people; it will introduce new complexities and uncertainties. Concerns about the loss of control over AI may turn out to be justified, but whether or not human actors will be held responsible for the behavior of these technologies is not an outcome of technological development alone. Rather, what it means to be held responsible, how to act on responsibilities

and how to design for responsibility is the result of negotiations between various actors involved in the development and use of these technologies. Various groups and individuals, including researchers, government officials, manufacturers, activists, journalists, politicians and lawyers, negotiate what responsibility practices should look like. Based on their experience with and understanding of the technology and their often conflicting interests and values, they negotiate how to best establish rules, norms and laws that govern the activities that these new technologies make possible. They also develop conceptions of what it means to be held responsible as well as discuss what kind of technology that itself requires. The extent to which human beings can be held responsible for AI is therefore the result of choices made in technical designs as well as the design of the broader sociotechnical systems, rather than an inevitability. Analyses of current negotiations about responsibility practices can help to bring into view the choices that are already being and those yet to be made. ✓

This essay is based on: Merel Noorman, 'Responsibility practices and unmanned military technologies', Science and Engineering Ethics, 20(3), 2014, pp. 809-826.

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Tamar Shafir and Füsün Türetken

MODERN LOVE

Füsün Türetken: Online dating is big business. The companies that operate said services claim to generate twenty-five percent of all current relationships. Helen Fisher, anthropologist and chief scientific advisor to match.com, claims that people think modern technology is changing love, but that the “basic brain system for love” isn’t; the ancient human brain clicks into action no matter on an online dating app, at a bar, or sitting around a dinner table.¹ We still listen the way we always have, try to size people up, etc. But modern technology changes the way people court. For her, these sites are not dating sites but ‘introducing’ sites. Their match-making algorithms are very useful, she states, as most of us have ‘love maps’ that specify what we are looking for in terms of age, proximity, background, education, interest, etc. Algorithms help avoid wasting time with the wrong ones. It sounds as if a certain playfulness and trial and error are eliminated in the algorithmic augmentation of search.

Tamar Shafir: I mostly agree, except for one large difference. I think before the onset of apps like Tinder your dating behavior would be largely conditioned by your social circle. Yes, you could meet the same people in a club, but you would have to go to that club in the first place, and if you don’t go to clubs on your own – which I don’t, at least – then you would have to be friends with the kind of people who do go to them. Therefore I think Tinder, in some way, opens up the possibility for a more ‘pure’ form of one-on-one encounter because it reduces the stigma of meeting people who fit within your love map, but not your socially-sanctioned dating map. I have a friend who expressed a similar idea about Grindr: since the main currency on that app is physical appearance, you might end up in places you never would otherwise, like a squat, a hostel, a luxury hotel, or a penthouse; wealth and social status become simply not that important.

FT: I think the ‘purity’ you are speaking of also could be read as a simplification. The idea for Tinder came from a conversation between a few guys discussing how much effort it took them to start a conversation with a woman at their next table and how much easier it would be to do so if they already knew something about their person of interest, whether they would be interested in being addressed at all or asked out on a date! Not only does Tinder’s ‘opt in’ design – the need for both swipe right – eliminate the shameful process of



being rejected in public, but we could also argue it reduces the process of courting into an efficient and pragmatic task.

Dr. Hannah Fry argues that human emotion is not rational, organized, or predictable.² But yet she argues that we can be given mathematically verifiable tips for love. Interestingly, the dating site OkCupid was started by a group of mathematicians who were looking for patterns in how we talk about. And it turns out that how attractive you are does not necessarily correlate to how 'popular' you are. So, in fact, it's not worth faking beauty by putting on camouflage in the virtual world.

TS: I find this discussion fascinating, because it raises the question of an inherent capacity for hermeneutics at a biochemical level. On these sites and apps, all we have to go on is images and text, and yet we are able to not only judge someone's attractiveness but also determine how their level of attractiveness meshes with the choices they make in portraying themselves, thus forming a second-level interpretation of their self-regard and how that compares with the value of their mute appearance. No one wants to date a total narcissist, but for all but the extremely beautiful and extremely ugly, some degree of narcissism (or at least self-awareness) will probably improve their perceived level of attractiveness in relation to their physical baseline. Of course, self-deprecation can also be used to reduce the negative impression of narcissism while increasing an impression of sophistication and humility. But ultimately, we are still only talking about an image on the screens of our computer or phone. Of course that's superficial!

FT: Yet it's due to this very superficiality and fixation on profile images that Nancy Jo Sales argued in *Vanity Fair* that relational commitment becomes disincentivized, since another, better version of a potential lover might be only one swipe away.³ What is the appeal of taking the pursuit of love online? Do you think expectations and criteria have changed?

TS: I think one contributing factor may be the idea of the soulmate or the true love. If we really believe in the concept, then we cannot blithely accept the limits of our real-life sociogeographic community (although we probably propagate other limits, like race and class, very seamlessly between online and real life). A better option might always lie just beyond the reaches of our network - one more 'friend-of-a-friend' interval beyond the probable pool of people you might meet without any algorithmic intervention.

FS: As a platform, Tinder is based on a mass of profiles, but there are others that are geared more towards creating 'perfect matches' of compatible profiles, or love maps, perhaps. An algorithm is trusted to figure this all out, which

requires a lot of information from users. In fact, one user of OkCupid was so fed up by the amount of questions he had to answer that he automated a script to recursively enhance his profile and get 'matched' with more people; in the end with 30,000 women!⁴ The result was, though, that he ended up having dates and meeting people who resembled each other; asked the same questions on the first date, had similar tastes, etc., which made him feel like they lacked individuality. Another male user thought that the algorithm OkCupid uses had a certain power and spell over its users who listen to its predictions, like astrology.⁵

TS: I always find these kinds of stories incredible because it makes 'looking for love' seem like an eternal quest for the perfect match. Was the concept of love fundamentally transformed in the twentieth century? When did the idea of 'the one' arise? That seems like the deeper source for the astrological sense of pursuit. There's something interesting about the notion that we have to be special or unique to find our equally special or unique romantic partner, when the acts of courting and love are so culturally normalized on one hand and so instinctively animalistic on the other. Because these apps remove the 'nose test' of gauging your chemical compatibility with someone you meet in person, you are forced to come up with other binary (man/woman, religion, educated/not, etc.) or scalar (salary, appearance, height, etc.) criteria to predict how you might react to this stranger.

In the past decade there have been several fascinating studies on how hormonal birth control affects how attractive women find male partners. In 2008, a scientific paper claimed that women on birth control are more attracted to the scent of men who are genetically similar to them.⁶ And in 2014, another paper claimed that women who stopped taking the pill re-evaluated the attractiveness of their male partners' genetic fitness according to his physical attractiveness.⁷ The author of the second study, Michelle Russell, explained: "Women who choose a partner when they're on hormonal contraceptives and then stop taking them will prioritize their husband's attractiveness more than they would if they were still on it." Will our drive for satisfaction and happiness eventually lead us to combining both the algorithmic and hormonal optimization of love?

FT: When you make a profile on one of these sites or apps you have to subscribe to norms, particularly if you want to be 'successful'; quantified, objectified, commodified. Isn't that problematic?

TS: In some ways I actually see that as a benefit. Related to the problem of meeting potential partners through your work network - which increasingly becomes your social network - in the creative and cultural field - I feel that



submitting to a normative sexual identity is not the issue, but rather identifying with a sexual identity at all in work-associated environments. Somehow, Tinder seems like a 'safe space' to do that, where it doesn't bring any connotations on you as an individual with professional and theoretical aspirations and integrity. Given how much of our work revolves around a dispersed social network that gathers at specific events several times a year with a lot of alcohol, this isn't just a paranoid concern. I don't think our community is as open-minded as it would like to be, but I think participating in any group requires a certain degree of normative self-profiling, and for me it's only damaging to the extent that I cannot exercise a full kaleidoscope of identities in different parts of my life.

I've read many articles about marriage pointing out the fact that matrimony has always been an economic arrangement first; very few cultures and only for very brief periods of time have prioritized love as the central motive for partnership. My Sicilian friend's grandmother was married to her husband without having ever met him before - by the arrangement of their fathers - but they were apparently in love for the rest of their lives! I wonder, though: does the sensation of unlimited freedom in pursuing one's own happiness that might derive from such interpersonal networks actually bring satisfaction? Sometimes I feel inadequate because I fear I haven't actually made the most of that freedom,

which may sound ridiculous but still functions as another source of self-consciousness. And even further, does the feeling of picking one or a limited range of options from an almost infinite multitude create an emotional penalty for the selector?

FT: But through your profile aren't you almost by definition creating an alter ego, an identity for the algorithm to read, evaluate and make matches instead of being yourself?

TS: I'm not sure. Who is the authentic you? Maybe a more pertinent question is why would you lie online, 'in the privacy of your own phone'? Maybe our identities are much more fleeting, patchy, and contradictory than we want to think. Our brains could win Olympic medals for the gymnastics they perform to provide us with the impression of consistency, especially of our personality, philosophy, and decision-making apparatuses. We are incredibly hypocritical being; we are flawed, selfish, manipulative, and irrational creatures. To what extent do we want to realize that is the truth about our loved ones, much less the random people we date? I have to say, I'm quite happy to be entertained by the performance of an illusion; at least there's some semblance of their working for your amusement.

FT: Before online dating, various forms of looking for partners outside of the realm of friends and leisure existed, personal ads in newspapers etc. Dating etiquette has been through

many changes, due to diversity, technology, and liberation from (hetero)normative and social constraints. What does the future hold for the online dating world?

TS: I wonder whether the principles of extracting maximum value and customizing the possibilities of consumption to microscopic levels of detail will begin to seep more and more into personal relationships and perhaps loosen some of the built-in social preconceptions we have about successful love. In the way that a home used to be the confluence of many factors (family, sleeping, eating, property, storage) and has now been basically fragmented, I wonder if romantic love will become similarly granular: conversation, affection, sex, cuddling, dating, socializing, tax breaks, financial support, parenting, childcare, household responsibilities, etc. Will the concept of cheating become archaic - will the promise of greater wellbeing obviate the impulse for shame and deception when we try to satisfy our various desires outside of the traditional two-person relationship? On the other hand, will it also create an expectation of maximum sociability? How can the non-romantic asexual or the absolute loner exist in that environment? Will affection be commodified, and will we be punished for not offering it at all times? ✓

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LISTENERS IN THE ROOM

Katia Truijen: During the retreat, Matthew (Plummer-Fernandez) created the @InstituteOf bot that generates random titles for institutions. You were interested in making a 'critical fork' of it to do a close reading of the code that Matthew wrote. Reading and commenting on code is a recurring practice in your work.

Femke Snelting: In the projects of Constant, the organization I work with, we often try to make what we call 'meta-comments'. We speak about gender in a bug report; we discuss ethnicity in a proposal for a software standard; we try to read language habits in large data sets. We do this by making use of the writerly structures that already exist around collaborative code practice. Through its open source licensing, free software allows you to intervene and to be part of a collective and continuous process. People engage in discussions around code through mailing lists, or do bug reports to comment on technical issues. In that way it is a very discursive culture.

At Constant, we aim to involve different types of expertise in discussions around technology. We think it's necessary to include other voices than those from engineering or computer science, as it is too limited to confront technology only with technology. Through collectively reading and commenting on different layers of code, we want to learn and test how our relations with technology are never one-way.

When Matthew told us about the @InstituteOf bot, the idea came up that this could be an interesting occasion to do what we call a critical fork: a complete copy of his code but with comments, references and discussions added. I was curious to see if it would be possible to recognize elements of the discussions we had about computational intelligence and research, within the technological objects that script the program or 'collage code' that Matthew wrote. Also, the idea of a bot as a generator of institutions is interesting in itself because of the institutional forces embedded in code practice, such as the way certain habits and power relations establish themselves over time. So it would be interesting to see @InstituteOf as both an example of and subject to institutional critique; that 'institutions' created through code might already have their own institutional habits.

KT: Currently, there is an ongoing stream of news about algorithmic flaws, like the machine learning algorithms behind Amazon's same-day delivery service excluding certain predominantly black ZIP codes. Reports about these incidents often call for a more critical engagement with algorithmic culture, emphasizing the importance and sensitivity of algorithmic design.

FS: The 'algorithmic hype' and the craze of using the 'a-word' for anything related to contemporary computation leads to the complexity of the technology being confirmed over and over again. It's a way of distancing ourselves from what is actually going on. Of course there are many technologies that are beyond the understanding of many of us, but there are also surprisingly mundane, repetitive and even silly aspects to them. The complications you refer to often come from the layering of simple assumptions. I think it's important to decide to not be scared away.

KT: So the challenge is to find ways or tactics that can help to align ourselves with technologies? I read about a recent workshop initiated by Constant where you were categorizing different phrases as being paternalistic or not. This approach seems to offer an interesting entry point to learn more about algorithmic thinking and machine learning.

FS: About a year ago, we organized this session with activists, artists and researchers to learn about and work with text data mining. A computational linguistics professor from Antwerp introduced us to Pattern, a text mining module for the Python programming language. We learned that text data mining technologies are based on optimizing a small seed of knowledge that is then scaled up to analyze large sets of data. Small test samples, or so-called 'golden standards', function as benchmarks if they work well and allow other data to be analyzed by algorithms. However, the initial human decision-making process is still central to how these algorithms extrapolate knowledge.

We tried to find out as much as we could about these golden standards, and under which conditions they are being developed. Not surprisingly, they are often created by underpaid students or mechanical turk workers who are basically bombarded with data and paid for the speed of their classification. It's all based on sentiment analysis, like rating sentences on the level of anger that is being expressed. In this process, clichés emerge and are reaffirmed, because people don't have time to consider their decision. Anything that is ambiguous or unclear is discarded; first on the level of classification, either positive or negative, and second, if there is disagreement between people who rate the same sentence. Only material without ambiguity will pass through.

We were asking ourselves what these type of processes mean in terms of knowledge production. We decided to classify 'paternalism' in a data set, something as ambiguous as can be. So we simulated a scientific process by developing our own golden standard to counter the efficiency drive of text mining technologies, allowed for debate and offered time to make decisions.

KT: Often when new technologies or applications are developed they get analyzed or criticized, but once we are immersed, they blend into the background and critical analysis or intervention seems to stop. You are persistent in not using certain software applications like Gmail, or devices like a smartphone.

FS: This is part of our tactical approach. Testing out other ways of using technologies is an important element in our research practice at Constant. It may seem like a minor difference, but a lot happens when technological habits get questioned. You stop using technologies because they are convenient, but rather start because they raise interesting questions.

KT: You also actively intervene when new technologies or standards are developed.

FS: Currently, I am following the process of encoding emoji in Unicode.¹ My colleagues and I were really surprised by the way the Unicode Consortium implemented 'skin tone modifiers' as a response to a call for more diversity in the

set of emoji. While calling it universal, they have actually introduced a racist system. As a group, we tried to intervene by responding to the public call for comments. We investigated the decision-making process at Unicode by a close reading of meeting reports and press releases while writing and presenting about our findings. Through these meta-comments, we try to enter into dialogue with something that presents itself as a mutable process open to everyone.

KT: During our retreat, in conversations about the agency and behavior of computational entities, it was difficult to move away from a human-centered perspective. At some point, you introduced the idea of the 'algorithmic gaze', which allowed for us to assume a more 'bot-centric' perspective.

FS: I borrowed this notion from a colleague at Constant who is working on a long term project on computer vision and how image recognition could be understood as an algorithmic gaze; not only looking at the effects and the politics of algorithms, but to read them as radically other forms of seeing.² Of course humans are not uninvolved, but it's too easy to think that they completely define this gaze. This is a difficult exercise though, because it means to try to imagine a world in a post-humanist sense, in which the human is not always at the center, and then to think what kind of relations we could have with this other gaze.



During the retreat, we found that some of the discussions we know from dealing with difference and otherness suddenly became very useful. We talked about the different levels of awkwardness that sometimes emerge during group conversations, like the assumption that we are all the same makes the fact that you are not very difficult to handle. Questioning the assumed sameness through difference can be awkward or painful, both for those who assume to be the same and those who don't.

From the idea of the algorithmic gaze, as something different and beyond our understanding, we imagined how an algorithmic research entity could exist as an agency without feelings; a computational agent that could be different without feeling its pain or awkwardness. We were interested in exploring what this would mean in a social situation, how such an agent could help to break through the assumed togetherness, and what types of research and knowledge would be produced from it. What kind of relations would then emerge? How would this computational agent reflect or deflect work between humans? In a way, we were trying to see the algorithmic processes that were already present in the room and in our conversations.

KT: I find it interesting that, throughout the retreat, we continuously adapted our environment to the kind of conversations we were having, like different types of chat rooms. The kitchen and the forest allowed for one-to-one conversations, the living room and the courtyard were used for plenary discussions, and the park and the café allowed us to talk in smaller groups. We often used spatial metaphors, such as the garden or the dance floor to describe different types of relations between agents, both human and non-human. You approached the idea of the algorithmic research entity as an actual 'listener in the room'.

FS: In fact, we had already invited strangers in our midst by using different tools and software for recording and processing the discussions. We tried to understand what it could mean to invite an algorithmic listener to a conversation, and started to imagine those presences in different ways. To test some of our intuitions, we generated two automatic transcriptions of the same conversation in which an awkward social moment took place. Interestingly, this moment was completely missed and erased by both of the transcriptions, but not in the same way. Because we were there and we know how the technology works, we can reverse-engineer what must have happened, algorithmically speaking. We can start to see the 'golden standards'. But if you would not have attended the meeting and only read the transcript, you would never be able to recognize the fact that there was an awkward moment.

KT: And what did these non-human listeners contribute to the others in the room?

FS: That is where it becomes interesting: to not take these automatic transcriptions as misrepresentations of what happened, but to approach the computational agents as actual listeners. What is beautiful about the two transcriptions, is that they show two different readings of a situation, which not only de-essentializes the technology, but also serves as a nice reminder that every one of us hears and reads the same things differently. So, they operated simply as different characters, each with their own kind of presence. ✓

1 Femke Snelting et. al, 'Opt Subject: Issues with modifier mechanism, UTS #52', 2 May 2016. At: <http://possiblebodies.constantvzw.org/feedback.html> (accessed 10 August 2016).

2 Nicolas Malavé, 'Scandinavian Institute for Computational Vandalism'. At: <http://sicv.activearchives.org/logbook/> (accessed 10 August 2016)

DISCO-

Tamar Shafrir, Femke Snelting, Füsün Türetken, Simone C. Niquille, Dorien Zandbergen and Nick Axel

Why did Eris, goddess of discord, throw the golden apple? Her disagreeable nature led to her being the only goddess not invited to Peleus and Thetis's wedding. When she turned up anyway, she was refused admittance and, in a rage, threw a golden apple amongst the goddesses inscribed with the words "To the fairest".

The collective form of research

Research often is a predetermined process that involves multiple agents located in different spaces, organizations, formats, media, places and times. Those agents are organized according to various patterns, rhythms, hierarchies, and protocols. For example, the academic framework defines multiple tiers that are granted different forms and quantities of agency: canonical figure, Professor, assistant Professor, Principal Investigator, lecturer, graduate student, undergraduate student, research subject, etc. The different tiers imply a flow of theory and critique (downwards) and primary or "raw" content (upwards). The institutional context prioritizes written documents in order to archive and expand the knowledge *it* contains. These structures offer an illusory architecture of knowledge and condition/limit the ways in which 'conversation' is part of the process of doing research.

When conditioned by institutional research institutes, conversational practices take place in highly formalized settings, like the conference and the lecture. Only when organized in these formations the outcomes of conversations are acknowledged as 'knowledge'. In more collective forms of research, the question how conversations ought to be conducted and what gets recognized as knowledge and insight is itself part of the research process. We'd like to imagine this collective process in terms of a dance: on the hand, a conversational framework that relies more on a social code (which can be respected or not) and on the other, a channeling of data and knowledge into individual and sequential vocal expressions. We want to think of conversation as a dance. Could research also operate as a dancefloor? We talk a lot, but don't dance nearly enough.

What issues could disco- address?

disco- should be able to create a better balance between conversational content and

context. Moments of disruption, frustration and blockage often come from an unacknowledged or unequally acknowledged disconnect between these two. For example, diversity does not guarantee that everyone gets their voices heard. Common issue with group conversations is not merely that there is a lack of common ground, but often the absence of awareness that there is no common ground, or that the ground on which people stand has shifted. disco- should be able to sense disconnect and respond to it. It should also have a sense of autonomy in this respect, so, not only 'responding' to participants' frustrations but also indicate on its own accord when to do so.

The dancefloor as paradigm

Dancefloors are complex spaces that operate based on some implicit understandings:

0. Pre-disco rituals, i.e. shaping your disco body: the disco nap, hygiene, getting in the mood, choosing the right clothes, contacting your disco buddies...
1. All bodies on the dancefloor share the same spatial framework at the same scale.
2. Each body has an independence of motion that is relative (mutually inclusive or exclusive, depending on the free will of each body) to the independence of motion of all other bodies.
3. Each body has a simultaneity of motion that is coextensive with the motion of all other bodies.
4. The expressive capacity of each body may be unequal and subject to several determinative factors that include, but are not limited to: expertise; bravery; will; imagination; familiarity; acceptance; freedom; normativity; ability; free time; implicit or explicit codes of conduct.
5. The dancefloor may encourage or discourage inequalities through different factors that include, but are not limited to: price of entry; public versus domestic setting; legal status; dress code; darkness; loudness; accessibility of audience to DJ; level of intoxication; legal status and enforcement for various intoxicants; sexual orientation; gender; race; class.
6. Participation in the dancefloor can assume different registers. These include but are not limited to: improvised expressive dancing; choreographed expressive dancing; choreographer; chaperone; wallflower; barfly; bartender; disc-jockey; lighting controller; technician; cleaner; bouncer/ID-checker; policeman; drugdealer; poledancers; bathroom attendant; ...
7. Spaces in a disco include: a bar, VIP Room, backstage, restrooms, DJ desk.

DANCE DANCE REVOLUTION

As an exercise we transcribed a piece of conversation from a public discussion on automation and responsibility with Merel Noorman via speech-to-text software. The two software constellations used are Gentle ("A robust yet lenient forced aligner") and Trint *Beta ("Magically transform media content through text"). Comparing the transcriptions that these two very different computational listeners produced, we recognized how different sets of algorithms make different guesses at what was said. Not unlike human participants, they at times heard the same things, but often they heard very different things. Unlike humans, these strangers offered direct access to their particular forms of understanding and misunderstanding, without reservation or embarrassment. By taking their interpretations into account, we started to see patterns beyond our usual scope of hearing. Listening through their otherness allowed us to imagine conversations that could include radically different listeners.

Gentle

it you know there has to do with you know she was just stupid you know so many more hands better and you'll be the system you know yeah yeah memphis from you know i have yeah uh and uh <unk> and because it's if you if you go through this long then everything rings and then into that they should comes and uh i mean one day she where i mean you've completed problems it should do is exactly what it's supposed to and it goes wrong so it goes all right if you're more human is all right if you're more human it's just three dollars a airplane its course right i think they're just been once but she's doing and you know five and answer and you had the patience or the interaction designed another er so clear that you could then stepping itself yeah you know so both ends have problem yeah and and you will love and that's all frisbee golf and she'll never be to pick up and she'll never be ass human it's instant that just completely feels that way if you go to get out so that's always say should pool but it just it was in the end of all it's like you know it's just you know that's the that's the way it was that it just makes you say well you have to have to type a kind of the citizens of the human years it just kind of the citizens of the human usage spaces than most valuable trees technology that goes there yeah and so uh we that's consideration mind you know everything else they're kind of can be discarded and so that you know because fox of it was gonna happen done correctly disadvantages which is actually the the way to go is moment i mean you know way to go is moment i mean something that i mean uh that's a uh you wanna completely ultimate hopelessly let a computer oversee and a partner or a different to to to see if they're across the whole the biggest problems there is that they don't see the difference between car sellers of these beating is fine with me for it we think is funny right you know and have you have [laughter] i'm the oldest for the most of the problem is love salt you could never do this because that's we're supposed to be yeah see that that's right and that's that's you know it's it's you know what about us the problem

Trint

Yeah but if the less I do with the notion that you said the difference between a tongue in one hand and human system on the other hand. Yeah and because if you if you go through that line everything works and then interpretation comes on an important issue I mean it's completely obvious you to do exactly what it's supposed to do and it goes wrong it goes all right if you're more human is a bit dodgy with crime is of course you have to interrupt the bottom of what the machine is doing and you have to find an answer and these interpretations or the interaction design are not always so clear that you can understand the thing itself. — Yeah you know so both ends have a problem. Yeah and you will often never software because the machine will never be as human assistant that it completely feels the way we work together now so there's obviously a basic problem. But if you do it in the polling that's why you know it's just you know. There's no way to understand it it just makes mistakes. Well that's how cities have lost really comes to systems of the human perception space is the most valuable piece of technology that goes there. — And so with that consideration in mind you know everything else you know. Come be discarded so the hero becomes part of the look past the young which of English which is actually the way to go it is moment to mean something I mean let's say if you want to completely of totally autonomous leave let a computer over see the parking lot here for two weeks to see if the cars are stolen. The biggest from Osteria step they don't see the difference between a car scholars of these museums going look for it you know and you know until this fundamental problem is not solved.— You can never get rid of that responsibility. You see the difference and that's saying all the same meaning always opposed to the problem.





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