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FEELING (WITH) MACHINES

ABSTRACT

Computers and their networks are drastically changing our everyday lives. In this article, I focus on how this change affects the field of everyday aesthetics. I address my theme in four steps and ask: how could present and future developments affect, first, the creation of everyday aesthetic phenomena; second, aesthetic phenomena themselves; and third, the perception and evaluation of aesthetic phenomena? Lastly, if remarkable changes happen in all or some of these, how could that affect aesthetics as an academic discipline?

LOGIN

Computers are everywhere. The maze of laptops, phones, tablets, servers, databases, sensors, and robots, as well as the programs, algorithms and codes that run them, is becoming ubiquitous. It is changing our environments, working practices and lives in general so quickly and significantly that it is very difficult to foresee where it will lead us. We shop, chat, listen to music, drive our cars, write, exercise, run processes in factories, diagnose diseases, create weather forecasts, search for partners, analyze sports statistics, cook, and do practically everything with the help of computers, and they are getting much better than humans at more and more tasks. Some people install microchips in their bodies to monitor and control themselves with the help of computational tools, turning themselves into some kind of hybrid creature. There is no sign that this trend will change anytime soon.

How is all this changing the aesthetics of our everyday lives, and what will happen next? To be honest, no-one knows. This text is pure

speculation: an essay leaning towards the French verb *essayer*, from which the English noun is derived. I am trying to imagine some possible aspects of our future, things that do not yet exist but might become true. The future is necessarily based on the past and present, and it is not entirely open; as we know something about the past and present, we may also know something about the future that will grow out of them. Still, I do not pretend to know what will happen, and I only make suggestions and ask questions that may find their answers later. For now, we just have to settle for sketching various possible futures.

I muse on how computers and computational approaches are changing our everyday aesthetics. But when doing this, I emphasize the everyday aspect of my approach. I am not a computer scientist, not even an advanced and exceptionally active user, but a very ordinary, mid-range digital citizen living with various sorts of computers and software, such as Word, WhatsApp, Twitter, Outlook, Skype, ParkMan, Spotify, SoundCloud, LinkedIn, Google Maps, several online shopping channels, news portals, cameras, teaching tools, and others. In this, I am like most people in wealthy countries. On many occasions, our lives are guided by computers without us even knowing and noticing it. Recently, in discussions about the opportunities and threats presented by an advanced artificial intelligence, there have been two opposing extremes and everything in between: super robots will solve all our problems and make us their slaves ... or will just continue both helping and harming humans, like all previous generations of machines have done, changing many things but not everything. In every scenario, however, there will be impacts on our everyday aesthetics. What could they be? Where could the present situation lead us to?

I address my theme in steps and ask: how could present and future developments affect, first, the creation or production of everyday aesthetic phenomena; second, aesthetic phenomena themselves; and third, the perception and evaluation of aesthetic phenomena? Lastly, if remarkable changes happen in all or some of these, how could that affect aesthetics as an academic discipline?

EVERYDAY AESTHETICS

Before sketching how computers, and the algorithms that make them tick, may change our everyday aesthetics, it is necessary to describe briefly what everyday aesthetics is.¹

By everyday aesthetics, I mean the aesthetic deeds, objects, processes and experiences that we do, make, have and face in our everyday lives. I see the everyday as a relational concept. There is no list of things that would always be of an everyday type to everyone. Almost anything can be that to someone, at some point in their lives: certain kinds of clothes, food, sports, art, tableware, work, cars.... In addition, what is not everyday right now can become normal and habitual, and vice versa, meaning that the content of the everyday changes. True, everyday things often relate to our homes, work and hobbies, but what kinds of objects and events these actually include varies a lot. The essential characteristic of the everyday is that it is normal, habitual or commonplace; it is what we face repeatedly and are used to.

Everyday things, whatever they are, can be experienced as positive, negative or rather neutral. The everyday can feel safe and thus positive, because we know it so well and can trust it; and it can be boring and gray for exactly the same reason. Or it can be just something we rely on and live through without really actively thinking about and noticing it.

Aesthetics, in everyday settings, has to do with how we experience and interpret such everyday things with our senses, perceptually and often emotionally, with our bodies, and we typically describe all this with specific terminology referring to this approach. We can notice the *messiness* of our home, the *cool looks* of someone we meet in a café, the *smooth easiness* of our daily exercise routine, the *cuteness* of a cat, the *freshness* of a fall day, the *exotic character* of a new tea variety, or the *neatness* of our phone. Of course, we often also use various kinds of tools when making aesthetic observations and evaluations, but I would still think that the direct bodily, sensual, and emotionally charged approach is typically at the heart of them.

In everyday life, those features of things that are normal, ordinary,

¹ I have analyzed the concepts and relations of the everyday and aesthetics in more detail in other articles. See, for example, Naukkarinen (2013) and (2017).

and unsurprising can be precisely the goal that is very satisfying. For a businessman, a suit looks and feels good exactly because it does not scream and stand out, but slides smoothly into the normal daily routines of the surrounding culture. If we strive for something extraordinary, we break the everyday. This does not mean that we do not value and strive for exceptionally great, extraordinary things—of course we do—but they are exactly that, extraordinary: something that we cannot have every day.

Now, computer-based phenomena have become an essential part of normal daily life and its aesthetics, and they are becoming more and more dominant, changing the whole picture, creating a new normal.

CREATING DIGITAL EVERYDAY AESTHETICS

We all create everyday aesthetics, meaning aesthetics that we repeatedly face in our everyday lives. We cannot but do that because whatever we do or make (or decide not to do or make), it has its own aesthetic features that we can evaluate and discuss, if we want to. As a university professor, my everyday aesthetics are related to the things that I normally do in classes, meetings and the office: how I dress, talk, write, and so on. If I decided never to comb my hair, I would not create less everyday aesthetics in my life than someone else who spends hours on their hairdo. We would just produce different aesthetic results. Leading a life with no aesthetic deeds at all is not possible. True, one does not have to pay attention to them personally, but someone else always can.

In the future, too, many aspects of everyday aesthetics will be created in very traditional ways. We, as human beings, will still sometimes cook with fire, draw with a pen, wear jeans, grow roses in our gardens and play the acoustic guitar. In addition, animals, plants and inanimate objects and processes will continue to form our everyday aesthetics: things we can evaluate aesthetically in our everyday ways. Of course, it is highly questionable which non-human actors can *intentionally* create aesthetic products and events for us and for themselves, but it is possible that at least some animals, such as chimpanzees

and bowerbirds, can.² In any case, intentionally or not, animals and other non-human actors will keep on producing things that can form part of everyday human aesthetics, and non-living non-artifacts, such as stones and traces of erosion, can also be a part of this.

However, as human beings, we now have powerful computers to help us create everyday aesthetic phenomena and experiences. Anyone who writes texts with a PC, takes photographs or shoots videos with a phone, googles recipes when cooking, shares GIFs through WhatsApp, updates their Facebook profile, monitors their pulse and other bodily functions with an activity tracker in order to improve their diet to look better, tweets about a great movie, or searches for a scenic driving route with a map app is doing exactly that. We constantly create computer-generated or -assisted things in and for our everyday lives without always even thinking about it, in ways that were not possible some years ago. There is no doubt that there will be more and more possibilities for that, and as soon as 5G and 6G are here, everything will again be faster. Soon, there will be augmented and virtual-reality solutions that most of us cannot even imagine right now, but that will be widely used on a daily basis. This will probably be most evident in working-life environments, and these are at the core of most people's everyday lives. Everyday aesthetics of, for example, farmers, engineers and bus drivers can change drastically; farmers may work in cities, on buildings, and use computers to optimize hydration and fertilizer usage, taking computer-aided farming practices that are already used in countries such as the Netherlands to a new level; engineers working in factories will probably use virtual or augmented-reality head-seats to monitor and adjust production processes; and bus drivers will not drive but will become some sort of travel hosts in self-driving vehicles. Advanced chatbots will take over many service positions. We will also see completely new professions that we do not know of right now. Systematic forecasts about such changes have been made, the latest and broadest one in Finland being the publication by Risto Linturi and Pekka Kuusi (2018) for the Finnish Parliament, called *Suomen sata uutta mahdollisuutta 2018–2037*:

² The discussion about animal aesthetics and art can be seen as a special strand of the broader post-humanistic discourse, and it has been developed by, for example, David Rothenberg (2012).

Yhteiskunnan toimintamallit uudistava radikaali teknologia (One hundred new possibilities for Finland 2018–2037: Radical technology that will renew the operating models of society).

There are several layers in this. Most of us can take digital photographs and modify them to some extent, write texts, create web pages and PowerPoint presentations, order customized sneakers from a web shop, and perhaps sometimes design a new interior for our own home by using hardware and software that someone else provides. However, if we want to go further and create something different from just variations of off-the-shelf products, we have to learn to understand the possibilities and restrictions of such tools better, and at some stage, build and program them by ourselves. We need to understand how algorithms are created and what can be done with them, when combined with the physical machines that do what algorithms make them do. Without mastering this level, we cannot really understand how our everyday aesthetic environment is built, and we are rather helpless receivers of what is given to us by those who understand better. If we want to be creators of the digital everyday, we need skills that make this possible. Does this mean that everyone has to learn to code, or will there be completely new ways of interacting with computational machines? Will it be possible, for example, to program computers just by talking to them? Time will tell.

Even now, it is not just human beings, with the help of computers and their networks, who create our everyday digital environments and phenomena, but it is also computers themselves. They, to a large extent, create the digital bubble we live in, select the things we see, and the music we listen to. They are programmed to offer us newsfeeds, tweets, and shopping suggestions, and the more we use them, the more accurate they become; and using can sometimes mean just visiting a certain location with your phone in your pocket. In addition, such systems are becoming partly self-learning through autonomic computing, which implies that they are also, to some extent, true black boxes; they take care of and develop operations and algorithms in such a way that no human can, in practice, follow exactly how they gradually change. They have initially been programmed by humans, but the algorithms change independently of constant human interaction. As the changes are partly unknown, it is also very difficult to fix problems when

they arise, because it is practically impossible to trace their exact cause.

Little by little, machines may also come up with completely new everyday aesthetic solutions, be they paintings, songs, clothes, or something else we cannot yet imagine. For some, even sexual acts, which can be seen as a special case of everyday aesthetic activities, are already partly robotized, and not just through internet links and pages, but in the form of actual, physical robots with whom one can do whatever one pleases. As their “evolution” goes further, such robots can be active and suggest and invent novel things, and not only do what the user commands (Crist 2017). Of course, for the time being, human beings still plan, build and program such computers and robots, but as soon as that is done, the computers and robots can function rather independently and come up with things we did not expect. Who would have thought that Microsoft’s Twitter bot would learn to tweet like a racist idiot in just one day (Read 2016)? Sooner or later, computers will start to plan, build and program each other much more effectively than now. In the worst dystopian scenarios, whether we believe them or not, some kind of “gray goo” consisting of an endless mass of self-replicating nano-robots will take over everything else. In more positive utopias, super-intelligent robots or biobots will live side by side with humans and both “species” will have their own, partly overlapping aesthetic cultures. For now, this kind of world only exists in science fiction novels such as *Autonomous* by Annelee Newitz (2017).

In fact, we already have more and more of something that is called AI (artificial intelligence)- generated art. Computers have been taught to paint pictures; carve, cut and print 3D sculptures; and compose and perform music. They are on stage in dance performances. Companies such as StoryFit and Synapsify provide software that helps analyze and create stories that sell. Programs and hardware are getting so good that, in many cases, it is quite impossible for the observer to tell whether a piece is made by a human hand and mind or by a computer. The most advanced cases are far removed from the earlier clumsy attempts to imitate human art. For example, the computers that Robbie Barrat has programmed to create pictures come up with amazingly surprising results through so-called GAN (generative adversarial network) processes in which competing procedures spar with each other rather autonomously, without much human control. Yes, again,

it is still humans who design these systems, but that will eventually change. Machines are becoming more and more independent and active, and will create what we and they see, hear, touch, feel and smell in our everyday settings, whether aesthetic, artistic, or otherwise. Most likely, not all such creations will resemble the aesthetic phenomena that we are now used to.

DIGITAL OBJECTS AND ENVIRONMENTS

Digital everyday phenomena are not aesthetic objects in the same way as many physical objects are in our traditional thinking. On the level of our everyday perception, we have spatial and temporal objects like tables, cars, paintings, songs and flowers, which are rather stable and distinct from ourselves, and have clear limits and characteristics that we can see, hear, touch, and perceive in other ways. True, the stability and clarity of the limits are dependent on our everyday-scale approach, and they do not exist for some other approaches, such as the one of physics, for which physical objects are ever-changing, statistically analyzable processes with no sharp borders between them. However, we do not see tables like that in our daily lives, and everyday aesthetics typically operates on the level of a more traditional object-based approach.

This, however, does not suit the digital world. There, it is evident that there are lots of things that are not objects in the traditional sense of the word. Of course, computers, phones, tablets and other tools are also physical objects and can be seen as such, but in many cases they are just means to get access to something else. We don't pay attention to them but to the things they open up: pictures, stories, songs, and recipes, which, in turn, are often linked to the non-digital world. In fact, the borderline between different layers of existence easily becomes very blurred.

In digital everyday aesthetics, the separation between the original and a copy, autographic and allographic, as well as spatial and temporal, works tend to lose their relevance. There is no such thing as the original, real object or work. Obviously, someone or something has created the original

file or algorithm at some point, with a laptop, camera or the like, but as soon as it is uploaded and others receive it with their gadgets, it starts to vary and spread potentially everywhere. Even if the algorithm behind various instances of, well, a “thing” on different screens or other interfaces remains the same (and it can alter, too), there is no way of knowing where and how and on what kinds of screens this “thing” will spread, how it will look, and to what other “things” (texts, images, sounds, hardware) it will be connected and when. If it is erased from one server or memory stick, it can exist somewhere else and start spreading again, with practically no time lapse. And how will this all be experienced in numerous changing contexts? The variations are practically endless. In principle, the same has always been true for recordings, books, compositions and other allographic art forms, but now the phenomenon is much stronger, wider, bigger, and more common. Everything that is digital can be copied, varied and spread endlessly, and this is exactly what is happening. This is on top of the traditional notion that even the one and the same object can be experienced in many ways. Now we have more variations than ever.

In addition, the difference between what is truth and what is a lie, and what is real and what is fictional, becomes challenging. It is becoming easier and easier to create fake versions of people and their activities on the internet. For example, when I was writing this article, by using software such as Face2Face and Lyrebird, it was possible to create a video in which a digital creature moved and talked exactly like, say, Arto Haapala, and the viewer could not tell that it is really “it”, not the real Arto. (When you read this text, such software may have a different name, and it will be much more advanced than the current Face2Face and Lyrebird.) For many people, if something looks real, it is real. In a sense, this means having an aesthetic relation to reality or having an aesthetic truth in a superficial sense: what looks and sounds like it, is it. We are already operating on the borderline of this when we make use of software such as Facetune, and tell selected stories about ourselves on LinkedIn, to appear slightly different than we do in our physical environments. In some cases, the fascination of such created identities is so strong that people also try to imitate them outside the internet; a contemporary version of Oscar Wilde’s notion

about life imitating art, and not the other way round. Cases such as Henry Harjusola—a well-known social media character who has openly said that he wants to look as good as his pictures on the internet—are extreme,³ but there are countless others who act in the same way in a more modest way.

In addition, this digital mesh, network, environment, system, mycelium or whatever name one prefers to use, easily swallows traditional objects, or at least some aspects of them. It is quite normal for there to be a traditional aesthetic object somewhere, such as one's dog, new chair, fresh hairdo, or painting, but the only thing most members of their "audience" perceive of them is what is happening around and after their "birth" on the internet: pictures on Facebook, Instagram, Pinterest, Snapchat and/or Twitter, comments about them, and links to and from them. This is also what David Joselit emphasizes as one of the most important features of the present art world, in his book *After Art* (2013). Most things that are seen on our screens—sometimes repeatedly, sometimes just once, sometimes by millions of others, sometimes by just a few—we do not face anywhere else. It would be misleading to call these phenomena representations of the original or the authentic, even if in some sense they might be that. Using the word "representation" carries with it the idea that there is something that is represented, something that is more valuable and true than its representative or trace. However, in the case of our everyday digital aesthetic phenomena, that is often irrelevant. Any instance of a net meme or tweet is as true or real as any other, and they all intertwine and pair with dozens of other things in an eternally changing flow, and they often come and vanish without our control.⁴

As this happens, it is not easy to feel that some particular moment or instance is important and valuable, because it will be soon replaced by something else. Stability and feelings of attachment or devotion do not belong here, and it is possible that we learn to treat everything else in the world in a similar manner. Just think of the difference between the feeling that you had when you found and owned a rare vinyl record in the 1980s,

³ One can follow Harjusola's activities in various digital and analog versions through <https://www.instagram.com/henryharjusola/?hl=fi> (downloaded 10 May 2018).

⁴ There are attempts to fight such endless flows of copies and variations. For example,

and the way in which we approach the icon of the same recording on Spotify. Yes, the music is the same, but the value of its carrier is entirely different; the former was a treasure as a physical object, the latter is one click among millions of others. We may learn to expect that the “real” world is like a click, too—again, quite as Oscar Wilde taught us that life will imitate art, now it will imitate our digital habits.

Together, some digital “things” form something similar to what Timothy Morton (2013) calls hyperobjects. Can we really figure out what Facebook, Microsoft and Amazon are, and how and where they exist? If they are hyperobjects, they are too vast and complex to be directly and completely perceived. They surround and penetrate us, are everywhere and nowhere, like climate change and chemicalization. If we want to make use of traditional aesthetic concepts to analyze them, the concept of the sublime is probably the one that might work the best. Sublime “things” are something that we feel that we cannot really perceive and understand in their totality, and they evoke some sort of awe that is both frightening and tempting at the same time. Depending on how one understands this kind of experience, it might be of a Kantian type, finally resulting in a revelation that has to do with our own capacities as rational and free human beings to make sense of such overwhelming phenomena, or of a postmodern variety that results in a feeling closer to (charming) despair and anxiety in front of something uncontrollable, incomprehensible and enormous. In addition, there is no clear-cut answer to whether it is more reasonable to think that some “things”, our experiences of them, or their combinations are actually what we call sublime. In any case, as our digital environments grow bigger and more complex all the time, impacting more and more areas of our lives, I would not be surprised if sublime experiences also became more common, or even rather commonplace. How many people can really understand how the system works? And can those who understand it really control and affect it? One can live with it, but it might cause the same sort of respect and humility as the vast oceans and the endless cosmos.

But that is only one possibility. There are much easier cases, too, and sublime experiences, in their extremity, cannot really be part of our

blockchain technology is sometimes used in digital art markets to guarantee the authenticity of a work. See Bailey (2017).

everyday all the time. Most of the time, I believe, we just idly float through the continuous flow of data, realizing that the “objects” we face are just disappearing vortexes in a bottomless stream, and that they are linked to other ones in ways that are often difficult to understand in detail, even if we wanted to. All that is solid melts into data and its perceivable islets. Google something today, try to find it tomorrow, and it might be gone.

All this also affects the non-digital, physical or analogical world. What we see and hear on the internet can make us, for example, order books and clothes to our homes, which means transporting them from somewhere, by some sort of physical means. This requires vehicles, oil and other materials, partly turned into kinetic energy. The computers themselves are also physical devices requiring materials and electricity. So, things happening on the internet are always necessarily also happening on a very true, real, physical basis. This basis is the planet we are living on. The materials are taken from mines, seas and forests. These, too, are someone’s everyday aesthetic environments. It is hard to imagine that mining and other activities that change environments will always change them for the better, aesthetically or otherwise. However, the ecological and aesthetic footprint of our daily digital diet is enormous; things may look good on the screen but be disastrous elsewhere. This complex is not an object either but something else, a constantly changing environment that you experience with all your senses, on different scales, being part of it yourself. It might be that, someday, a lack of materials and energy will make the present-day digital culture disappear, but a lot will happen before then.

It is also worth considering what kinds of things can be part of the digital world. What will necessarily remain outside it and why? It is not the whole world, in the end. We still have our analogical world and not everything, probably, can be computerized or seen as a set of algorithms. The current developments probably force us to study better where this difference actually lies, and at the moment, it is difficult to find a good answer. The deeper we drill, the more blurred the difference between physical and computational, human and non-human, and matter and energy becomes. Will *anything* be left outside the digital, in some respect? This sort of total merger is not how we experience things in our everyday lives, but will the

situation change if we learn to see the world in this way?

On another level, there are political and economic reasons for different datasets to include different data or digital “things”. This has nothing to do with ontological and existential features of data, but such inclusions and exclusions will still have a strong role in our everyday aesthetics. For example, what do Spotify or the National Library have in their files, and who has access to these? Who is allowed to be part of the digital world and its everyday aesthetics and why? For example, quite simply, if you do not operate in English, do you have a place in global data flows? As the giants of digital economy—Facebook, Google, Amazon and Apple—gain more and more power, whom and what will they include and exclude and where? Even if other big players, such as the EU, try to affect the direction of travel by means such as GDPR (General Data Protection Regulation), no-one really knows how all this will develop in the coming decades. One thing is clear: actors such as the MyData Alliance (<https://mydata.org/finland/>) are urgently needed.

AUDIENCES AND RECEPTION

If someone or something creates digital everyday aesthetic environments, objects and “things”, who or what perceives, uses or consumes them? Who or what is their audience? Well, we are, obviously. But what are “we” nowadays and in the future? And is it only us?

Natural scientists have shown that human beings are not just human through and through, but that we also consist of archaea, bacteria, fungi, viruses, and other organisms without which we would not survive. According to the most extreme estimations, over half of “our” cells are of this type (Gallagher 2018). Whatever the exact proportion, it is clear that we are walking combinations of various organisms, and there is no distinct borderline between them. I am we.

We are also growing together with computational machines, without which we feel that we cannot survive. In fact, there is no radical change in

this respect. We have been quite dependent on all kinds of technologies since the invention of the first tools thousands of years ago, and the Industrial Revolution made machines ubiquitous. Nowadays, we have new types of gadgets that do things that previous ones could not, but our dependency on machines as such is nothing new. The world as we know it has been technically mediated for millennia.⁵

New digital technologies, combined with, for example, chemical ones (that are largely computationally designed), have an impact on receiving and evaluating (and also producing) everyday aesthetic phenomena. In some scenarios, not all of us will remain human beings in the sense that we are used to. Instead, some will become some sort of transhuman creatures who have much better capacities to live longer and do things more effectively, with the help of computers and computer-generated drugs, and instructions on how to live in a certain way (Harari 2016). We are already going in this direction, and events such as the *Upgraded Life Festival* <http://www.upgradedlifefestival.com/> bring together existing companies operating in these fields. Future upgraded beings could see the world differently from us. If they live longer, they will be more experienced, and if they perceive things more accurately, they will probably know more. If they are more intelligent and have more memory space, they will be able to understand the world better, or at least differently. Aesthetics concepts such as beauty might mean something different to them, and new concepts might arise: concepts that we could not understand any better than bowerbirds can understand “sublime” or “romantic”. What such concepts could be, I don’t have the capacity to guess. This might sound utopian, but it is not entirely fictional. Just think how differently we understand the world and how we boost our capacities with computers, compared to people who lived two hundred years ago and used just hammers and steam machines. If they were transported to our time, they would not understand very much of what we do. There are no biological, evolutionary differences between us, and they would quickly learn our habits, but at first they would be completely lost and unable to make any sense of our everyday aesthetics. We are very different types of human-technology combinations than our predecessors were, and

⁵ In my experience, one of the clearest books giving a historical perspective of this discussion is Marttinen (2018).

there is no reason to assume that this trend will not continue.

It is also possible that, sooner or later, computers will generate aesthetic events and objects for each other. Even now, systems like Spotify can suggest music to us, although “us”, in this case, is in fact our computer profile. Spotify does not care whether an account is really used by Arto Haapala or another computer; it can suggest playlists in both cases. For now, it sounds reasonable to say that computers cannot be genuine audiences of aesthetic objects or events, even if they can create them. They cannot perceive paintings, music or food in the same way as human-technology combinations can, although they can select and choose. They cannot emotionally feel, like, prefer, have taste or be touched and impressed. They don't cry, laugh or get excited. They are not, moreover, conscious of themselves as emotional entities, and they have no identity in this sense. They are not living beings, and even the most developed robots, such as the famous Sophia and Asimo, are still very clumsy in most tasks that are quite easy for humans.

Perhaps machines are not like us right now, but it is possible that one day they will be. True, for now, their sensors and web crawlers only detect what they are programmed to detect, but as mentioned above, they are learning new things all the time, partly rather autonomously. When this goes even further, they could have an aesthetic culture of their own that could be wildly different from ours. They could have their own kinds of museums, concerts, and Ms and Mr Algorithm contests that they would evaluate and experience by themselves... or something completely different, for which they would need no human participants. And if at least some parts of all this were perceptible to us human beings, this would probably, again, change our everyday aesthetics surroundings, as well. Future computers will probably invent all kinds of things that people cannot. It is a different matter whether we could understand anything about what was going on. At some point, the entire human species might be gone, but such developed machines could continue their culture and maintain their own everyday aesthetics. What and how future machines could experience and feel is quite unclear, of course, and may remain so for us humans forever. However, this does not mean that such experiences could never happen. In novels such as Newitz's *Autonomous*, robots even have something that resembles

the human orgasm (they “run that program again”), and they tackle similar emotional and cultural issues to humans, as well as others that they think humans cannot understand.

If we think of academic aesthetics and its audience, it might already be possible for a computer to write an article and send it to an e-journal, where another computer or robot reviews, accepts and publishes it, so that a third robot can find and read it. I am not sure whether there are still technical obstacles to this, but if there are, they will disappear in the near future. If the outcome is an academic article that is published in a journal that is listed in an academic database such as Web of Science or Scopus, monitored by even more computers, it will be recorded as the research output of a university (affecting the funding of the university) without a single human being ever having anything to do with it. Eventually, this may result in academic article factories, like academic bitcoin mills. This makes one wonder why we are here. Could we witness what Daniel C. Dennett sees as one possibility: “So practical, scientific, and aesthetic judgments may soon be off-loaded or outsourced to artificial agents” (Dennett 2018, 392)? If so, then maybe “[t]he real danger, I think, is not that machines more intelligent than we are will usurp our role as captains of our destinies, but that we will over-estimate the comprehension of our latest thinking tools, prematurely crediting authority to them far beyond their competence” (Dennett 2018, 402).

Here, too, a highly relevant question is who is allowed to have access to what kind of data and be the audience of what. Technically, more and more people (and machines) are getting easy access to more and more data. Obstacles are often political, legal, and economic, and they are presently tightly connected to ownership and copyright issues, including who can decide who can use what, where, and how, and how much each user should pay and to whom.

With regard to our everyday aesthetics, here we are very close to privacy policies, too. Technically, it is quite easy to follow in great detail what we like, buy, and eat, how much we earn, where we go, whom we meet, and what we say. Based on this, a computer “audience” can draw a very precise picture of our aesthetic taste and, say, market new products to us or assume something about our political or sexual preferences. It is not hard to imagine a society

in which such profiling could also be used for discriminatory purposes, and something of this kind is probably happening more often than most of us know. Already, there are very disturbing reports, for example, from the Chinese province of Xinjiang, where the Uighur minority is effectively monitored using advanced technologies, and (aesthetic) deviations from the majority culture seem to be enough to lead to arrests and hard-handed “re-education” (Phillips 2018). We don’t typically like to let strangers into our physical homes to see what we do, but we don’t necessarily know who or what is following our digital activities in our digital “homes” and for what purposes. Still, our activities can say a lot about our aesthetic tastes; and taste, in turn, has traditionally, since Hume and Kant and even earlier, been seen as some sort of overall social ability that reveals something essential of our character. That is why it is so important to know who or what is monitoring and evaluating it, and to have control over one’s own profiles.

IMPACTS ON ACADEMIC AESTHETICS

With regard to the serious study of the everyday aesthetics of the contemporary and future digital world, most traditionally educated philosopher-aestheticians do not have the sort of literacy that would be required. In computing and engineering, people sometimes talk about black boxes, referring to devices whose input and output are known but whose inner operations are not. We do not know what happens inside them. Living with so-called black boxes means that our relation to computers and their products is largely aesthetic in a superficial sense. We often settle for what we perceive directly with our senses. For most of us, the operations that take place within a computer and its network is something we do not have access to or understand. Rather few users really understand the components of a device, what they do, how they are manufactured, how machine languages work, how electricity flows through the whole, how different programming languages differ, what algorithms do what, how they are coded, and so on. We know that when we click this

button, this or that happens, but we cannot really explain why or how. In fact, most things around us, digital or otherwise, are actually black boxes in most respects. We understand something about them but far from everything. For everyday purposes, this kind of aesthetic approach is quite enough.

This must change if we want to remain relevant as academic aestheticians who are able to analyze what others do and how the world around us functions. For this, we will probably need to cooperate with professionals from other disciplines more often than we do now.⁶ Then, a unit doing research on everyday aesthetics will be a multidisciplinary team, not an individual scholar in their study, as it used to be. This should also be considered in the education of future aestheticians. In fact, this approach is already being taken into account in some other fields close to aesthetics, such as art education. There, as described by Tomi Dufva (2018), even rather young children are taught, for example, how to code creatively so that they can express themselves through computer-based pictures. This requires educational teams to include people who understand education, human development psychology, computers, and art, at least.

Many things evolving around us and forming our everyday aesthetics can be seen as a series of black boxes that just operate and push out things, but whose operations we do not understand. However, aestheticians, I think, should not settle for this. We should have at least a basic understanding of how computers and their networks function; what they do and what they cannot do. This is just as important as understanding the core features of oil paintings, realistic novels and classical Greek philosophy is for those aestheticians who focus on them. I seriously think that it is very difficult, or even impossible, to understand present and future everyday aesthetics without understanding how computer systems work.

On the other hand, this does not change the basic philosophical starting point of, for example, Kendall L. Walton's classic category thinking. In this new situation, we should also have an idea of what kinds of things are characteristic of certain categories. What is possible, what impossible, typical, standard, non-standard, accidental, and so on, for each. What can

⁶ I have started to practice this, and the first results have been published in Naukkarinen (2018) and Naukkarinen and Pacauskas (2018).

we expect of the latest phone models or future VR equipment? Why?

As new tools and networks are very complicated, and they create complicated cultural-technical phenomena—even if certain interfaces seem simple and may lure us into thinking that we have mastered them—it is quite likely to be almost impossible for individual scholars to really understand what is going on. This suggests that aestheticians should probably be more active in building cooperation with scholars from other fields. Such combinations would be better equipped to understand everyday aesthetic phenomena. It is quite clear that these are not just technical issues and cannot be analyzed by, say, engineers alone, but they require philosophical approaches, too. However, philosophical aestheticians cannot manage alone either. In the best case, future scholars of aesthetics would be educated so that cooperation is natural for them. What this would mean for intake processes and degree structures of academic degree programs is a different matter and would require an essay of its own.

Will there be a place for traditional philosophical or humanistic aesthetics, done by human beings reading books, meeting in conferences and analyzing artworks and their general questions? I guess so. Whatever machines do, even if they learn to feel and develop a genuine identity and consciousness, as long as there are human beings, we will have our own approach to everything around us. We will still want to do, make and perceive things by ourselves, and to explain them to each other, using human language, using human eyes and bodies. There will still be countless things with which we interact and for which we don't use computers, even if we could. Humans will still understand and feel the world by other means: by swimming, running, cooking, dancing, discussing.

Very often, we do things in cooperation with computational machines. This essay has not been written by a computer. However, it has been written together with one, or with a whole network of them. No doubt, it would be completely different if we did not have computers. In that case, this text would not exist at all, or its theme would be quite fictional. But now, in the digital world, it would be even more fictional if I tried to imagine completely non-digital everyday aesthetics.⁷

⁷ I want to thank Johanna Laakkonen and Kasperi Mäki-Reinikka for their excellent advice

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