Beauty Filters – When Beauty is Standardised

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It just takes a few clicks and you can fundamentally change your appearance on social media and elsewhere – using beauty filters. While, in the past, you had to hire a professional to improve the way you look in a photograph using complicated photo-editing software, today all you need is an app on your smartphone or a program on the internet. The filters that are used are geared to very strict patterns – bigger eyes, smaller nose, smooth complexion. Does this produce standardised ideals of beauty? And what does it have to do with privacy?

Blogger Melissa Wells criticises the technology corporation Samsung for integrating an automatized beauty filter into the smartphone cameras. Image: Melissa Wells, Instagram @iammelwells

WHAT ARE BEAUTY FILTERS AND HOW DO THEY WORK?

A beauty filter is a function that can be executed using an app. It is used to add a filter to a photograph or a video, placing this over the body of the person (or people) depicted and thereby changing their appearance. In most cases, some primary aspects of their appearance are retained – such as the colour of the eyes or hair – while others are manipulated. To do this, the users of these filters must upload a photograph or a video from their smartphone or other device onto a server via the app or their browser; alternatively, they can take pictures of themselves directly in the app.
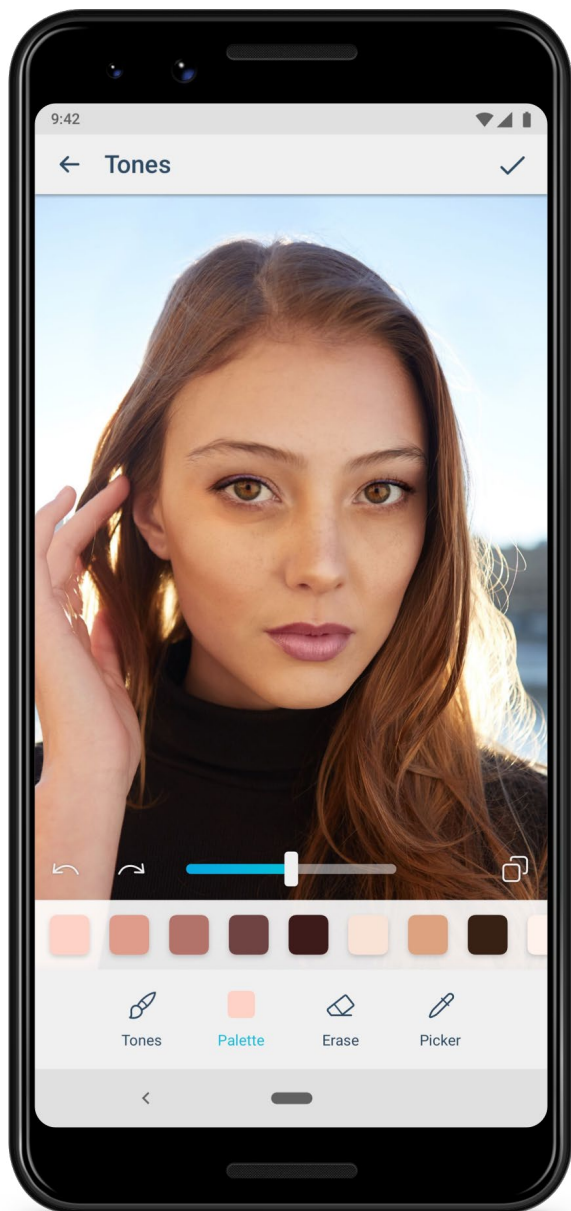
Demonstration of the app *Facetune*, image: Facetune

Beauty filters are based on machine learning.[1] Deep learning technology is used to train an artificial neuronal network, which, like the structures of the human brain, processes information from image data sets and thereby creates more and more new connections between them. This enables the machine to 'learn' and make decisions, though it can also question and change these decisions if necessary.[2] When a specific beauty filter is selected, the features that have been programmed are applied to the image of a person the user has selected, such as a filter for a smooth complexion achieved by blurring areas of skin in the photograph. This can only happen after the machine has 'recognised' the face and/or the body by comparing it to data sets from other photographs. A beauty filter must thus first understand the contours, proportions and individual attributes of the person in the picture before it can superimpose a standardised filter function that fits exactly over the photograph. [3]

WHO OFFERS BEAUTY FILTERS?
The best-known apps with beauty filters are Aviary, Facetune, Perfect365 and Snapseed.[4] Many smartphone suppliers, including Samsung, Huawei, Xiao Mi, and Apple, also integrate beauty filters as standard features in their cameras.[5]

The most successful photo editing app with beauty filters is Facetune. It was released by the Lighttricks company and was first put to market in 2013.[6] After further development, it achieved international success in 2016. More than fifty million downloads in 2017 made this

the most popular paid-for product in the Apple app store.[7]

The Spark AR company develops the bulk of existing beauty filters (or commissions others to develop them). Since August 2019, Spark AR has made it possible for private individuals and companies to have filters produced using their services.[8] Celebrities like Instagram star Kylie Jenner have been doing this for some time – she developed a beauty filter for her make-up brand in 2018 that allows users to test various colours of the lipsticks she advertises directly on their own images.[9]

Before/after, image: Facetune

WHAT DATA DO BEAUTY FILTERS NEED FROM US AND WHAT HAPPENS TO IT AFTERWARDS?

A photograph or video on which beauty filters can be applied is used as a basis. Beauty filters also need image databases in order to 'recognise' the uploaded image and to compare it with other images, so that the filters can be correctly applied. There is nothing dubious about the filters themselves in terms of data protection, but there may well be concerns about the apps and the companies behind them. Some apps gain background access to contact lists and this may even happen without permission.[10] Other apps cannot be installed on smartphones at all unless they are given rights to access certain resources – media archives, contacts, microphone. Once access has been granted, data can be collected by the companies for their own purposes or even sold on to third parties.[11] This data is of interest to providers, particularly for advertising purposes. Some also feed it into the image databases that are required for facial recognition. This becomes particularly dangerous when sensitive data, such as online banking information, is tapped by integrated malware. This is more likely if apps have been downloaded from non-authenticated app stores – other than the Google Play Store (Android) or App Store (Apple). The data is also used to track and influence the purchasing behaviour of users. One way of earning money with beauty filters, for example, is the targeted placement of advertising before, during and after the use of a filter.[12]

TO WHAT EXTENT DO BEAUTY FILTERS INFLUENCE OUR IDEALS OF BEAUTY?

The use of beauty filters alters the appearance of people on photographs and videos. The filters that place identical features (like a smaller nose and fuller lips) on different users'

faces allegedly unify people's outward appearance. This is often welcomed, because, as social beings, we feel that a similar appearance can strengthen our sense of community. Conformity thus also means belonging. If it becomes possible for us to apply beauty filters on ourselves that high-profile people use while frequenting the same platforms, then the use of these filters can seem highly desirable, as it makes us feel close to our idols. This feeling can be reinforced when filtered images are uploaded, published and shared on social media platforms like Instagram and Facebook and on messenger services like Snapchat.[13]

The filter images circulating on the internet and on platforms train our gaze to recognize these as 'authentic' images. This runs the risk that users become accustomed to this adjusted, 'conformed' appearance, which in turn might influence self-perception and the perception of other people. Frequently, our perception cannot distinguish between non-processed images and images retouched with filters. This can help to create stereotypes that influence perception through the repeated use of the same filters, with the result that the characteristics of these filters are themselves perceived as 'beautiful'.[14] However, there is nothing new about these standards and they were not invented by the filters – pure skin and large eyes have long been a mark of beauty. But now there is no more need for professional graphic designers or photographers to adjust these features on a photograph of a face using complicated image-editing programs. The beauty filter makes it possible for everyone to apply a feature to their own face with just one click. The frequency of these filter images reinforces the view of beauty they convey. And it is not only that existing ideals of beauty influence the development of beauty filters; the beauty filters themselves have an influence on the actual beauty industry. There are make-up products that imitate the functions of beauty filters, like the one that can magically add freckles to your face. It inspired one company for beauty products to develop a make-up pen that enables you to paint real freckles onto your face.[15]

Blogger Melissa Wells criticises the technology corporation Samsung for integrating an automatized beauty filter into the smartphone cameras. Image: Melissa Wells, Instagram @iammelwells

Seen in these terms, beauty filters can be understood as neoliberal products, in two ways, since (1) they influence purchasing behaviour and product development and (2) these dynamics – which beauty filters reinforce – may sometimes also use the human body as a product on the internet. It becomes a surface representing certain ideals of beauty and images of the body, which is then displayed to get likes, comments, followers, and ultimately recognition. All of this clearly shows that beauty filters can also promote and define ideals of beauty.

There are some counter-movements, however. The face positivity and body positivity movements attempt to counter rigid ideals of beauty that advance stereotypes. They do this by posting photos and videos without filters on social media. They aim to promote positive

self-perception, by not just accepting but also celebrating people's own unprocessed and real bodies. The photos are published after being given hashtags like #facepositivity or #nofilter. One problem here is that, in many cases, photos that have actually been through a beauty filter are also posted under these tags and our perception is once again manipulated to see these images as 'natural'.[16]

Blogger and body positive activist Rini Frey questions self-presentation on Instagram with the aid of make-up and image editing. Image: Rini Frey, Instagram @ownitbabe

DO BEAUTY FILTERS MAKE US ILL?
Internet users are permanently confronted with photos that use beauty filters and suggest some kind of 'perfect appearance'. These images can lead to people comparing their own looks with what they see and then devaluing themselves. By using beauty filters on the digital self, we can alleviate this feeling of inferiority and our self-esteem is temporarily boosted.[17] In such cases, our gaze may become completely accustomed to the manipulated image. Our self-perception then changes and the digital self seems more familiar than the real self that we see in the mirror.[18] Filters that give us unblemished skin, longer eyelashes and brighter eyes can starkly contrast with our own real bodies. This can even lead us to reject the way we really look, resulting in negative feelings, insecurity and depression.[19] The desire to optimise our appearance can also be transferred to the real world – plastic surgeons report that there are more and more customers wanting beauty operations that implement the features of beauty filters on real bodies. The term *Snapchat dysmorphia* is typically used in this context.[20] It describes a mental illness in which the person affected suffers from a warped perception of their own appearance as a result of beauty filters. These people can only see themselves in a distorted and negative light. In some cases, this can also contribute to eating disorders.[21]

Spark AR responded to these developments by changing its guidelines. All beauty filters that alter people's facial features and appearance in a way that resembles cosmetic surgery – such as facelifts or fuller lips – have been deleted from its catalogue, according to a statement on Facebook.[22] The problem here is that Spark AR has not made the criteria for deletion transparent. Filters like *Bad Botox* and *Plastica* have also been deleted, even though these were actually critical of the beauty craze and superimposed scars and wounds from operations on people's faces.[23]

… AND WHAT DOES ALL OF THIS HAVE TO DO WITH RACISM?
When the results of the *Beauty.AI* beauty contest were announced, it triggered a debate on whether artificial intelligence was racist. Although six thousand people from more than a hundred countries took part in this public contest, nearly all of the forty-four winners had a 'lighter' skin tone.[24] The jury that selected the winners was an artificial intelligence that was supposed to ensure that the decisions were not influenced by personal human preferences

in order to obtain a supposedly 'neutral' result. The artificial intelligence, which was the product of deep learning technologies, based its decisions on large sets of photographic data. The faces in the data sets were analysed with the help of an algorithm to ascertain particular beauty features before these were compared with those of the contestants. However, the data sets primarily consisted of images of people corresponding to a white norm – which the artificial intelligence also 'learned' to recognize as a norm – so that in the end these people won the competition.[25]
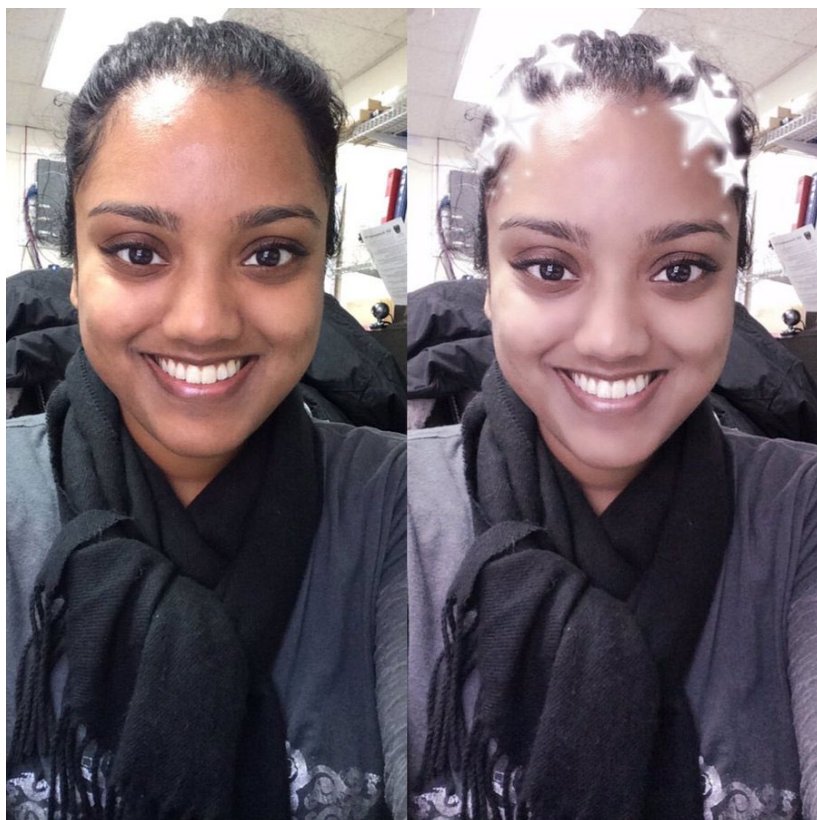
Twitter user @mangiferin shows how a Snapchat filter lightens her skin and makes her face appear narrower. Image: Twitter @mangiferin

Critics in the scientific community pointed out that technologies cannot be neutral – on the contrary. Racist thought structures are embedded in them and, historically, cameras and scanners were developed to cater to light skin and the norms associated with it. But what does this have to do with beauty filters? This example shows that technology firms influence ideals of beauty via their programming of artificial intelligence and the data sets they feed into it, as described above. The majority of images show Caucasian people. These images, which circulate on the internet and help define beauty, are the same images that the filters draw on, giving everyone a slim face, a slender nose, large eyes and lighter skin. This can reinforce negative preconceptions that see white looks as 'more beautiful' and assess 'other' looks as a deviation from this, while also associating them with 'negative' traits. Or to put it more starkly – hegemonic visual tropes are reproduced, suggesting that it is desirable to be 'white'.[26]

Beauty filters also tend towards racism because they are optimised for white people. If Black People or People of Colour use a filter, then there is a higher probability that the app will not work properly.[27] BIPoC (Black, Indigenous and People of Colour) – like Aminata Belli and Moshtari Hilal – are constantly drawing attention to these issues, as they seek to counter the problems inherent in this norm and obtain visibility via social media. It is a question too of positive self-images (as expressed by the hashtag #blackgirlmagic) and involves the exchange of experience, community empowerment and critical discussions.[28]

WHAT OTHER CONSIDERATIONS ARE THERE?
Beauty filters can optically improve our own appearance on photos and videos. This can lead to a feeling of affiliation with certain peer groups who also use these filters, which are shared

on social media platforms and messenger services. The conformity that beauty filters create can thus strengthen communities.

At the same time, beauty filters can also lead to dependencies and make people unhappy with their actual appearance because this deviates so dramatically from their image on the internet, which has been optimised by a filter. These filters are also a product of our visual culture, just as they also shape this culture, and we should thus critically reflect on the key narratives associated with them – such as what should be regarded as 'beautiful'.

This brings up the question of how beauty filters should be used. They are not subject to age restrictions and can be used by anyone – children, young people and adults. It is thus worth considering where media-focused educational work is needed to shed light on the issue. This can be used to address and understand the advantages and disadvantages of beauty filters, as well as the impact they have and the connections between these filters and social interactions. Educational drives on social media might help here.

A school subject could also be introduced or workshops held to explore new phenomena of this kind. These forums could promote a critical and considered take on beauty filters without condemning the technology from the outset.

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