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Total Affect Control. Or: Who's Afraid of a Pleasing Little Sister?

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Total Affect Control

Or: Who's Afraid of a Pleasing Little Sister?

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Abstract

Through the emergence of affect- and psychotechnologies, especially with the advent of affective computing*, the recognition, regulation and production of affects have been automatised to an unforeseeable degree. The roots of this algorithmic automation can be seen in the propagation of cybernetic models in the field of psychology from the 1950s onwards. A direct genealogical line leads from Silvan Tomkins' affect system via Paul Ekman's facial emotion recognition to Rosalind Picard's conception and co-development of affect-sensitive computer systems. Nevertheless, the implicated aspects of surveillance and collection of affective information have yet to be assessed critically. Such an assessment is outlined here.*

The Tip of the Iceberg of Digital Control: Affective Computing

As discussed in many recent publications, the regulation of affects and emotions is dependent on historical, cultural, socio-political and not least media-technological developments.[1] How affects and emotions are coded and expressed, whether they are fostered and actively supported or whether they are ignored or even denied, depends on a wealth of factors that are dealt with individually by many scholars in the fields of history and cultural studies.[2] Today, however, a fundamental shift is taking place in the conditions of media technology (a shift whose socio-political impact is still entirely unclear) as affectivity is technicised

1 See for example: Angerer/Bösel/Ott (2014); Goldberg (2012); Wetherell (2012); Dixon (2003).

2 We deliberately use both terms here to point out that in the discourses in question no distinction between affect and emotion is made. In spite of this, one should note that the two terms come from very different traditions of thought. The approach that was developed by Gilles Deleuze, drawing via Henri Bergson on Baruch de Spinoza, and that was picked up by Brian Massumi in the 1990s, has been deliberately left out of this essay as it plays no part in the discussion of affective computing. As Rosalind Picard mentions, this discussion does not distinguish between emotion and affect, and sensation or feeling are also often mentioned in the same breath. For a detailed look at the etymological meanings and different genealogies of the terms affect and emotion, see "Introduction" in Angerer/Bösel/Ott (2014).

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to an unprecedented degree. We are talking here about affect- and psychotechnologies used to record, store, measure, categorise, catalogue, operationalise, simulate and induce affective states. Noteworthy examples include affective gaming, surveillance technologies and certain applications emerging from the "quantified self" and "life tracking" movement. But the most far-reaching promises are being made by those working in the hotly contested field of "Affective Computing". This research can be traced back to the visionary book of the same name published by computer scientist Rosalind Picard in 1997, in which she named for the first time the diverse potential applications of computer-based identification and simulation of affects. In recent years, this field of research has become increasingly prominent: an International Conference on Affective Computing and Intelligent Interaction (ACII)[3] has been held every two years since 2005, the *IEEE Transactions on Affective Computing*[4] have been appearing since 2010, and 2015 saw the publication of a first comprehensive overview, *The Oxford Handbook on Affective Computing*. In reference to the technologies being developed in this field, various levels of application can be discerned: (1.) Individual users are being promised custom-generated agents that provide affective interfaces and constantly record affective parameters (facial expressions, body posture and movements, vocal range, bio-data)[5] to create a kind of double or "complementary personality" to satisfy individual happiness profiles. Preliminary forms of this are already on the market in the form of apps for permanent monitoring of body data, movement and communications profiles, and media usage.[6] (2.) With the help of these data and special algorithms, the emerging discipline of "psychoinformatics" attempts to render the mental state of users decodable in real time – admittedly in order to motivate these same users to engage in corresponding healthy activities and to help health care providers in assessing their therapeutic success.[7] (3.) In contrast to these therapeutic applications that rely on informed consent standards, companies as well as governments use data mining technologies without explicit or even implicit knowledge on the part of the users who generate these (affective) data by using networked

3 In 2015, the conference was held in Xian, China, see http://www.acii2015.org/.

4 See http://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=5165369#AimsScope.

5 The second section of the *Oxford Handbook* ("Affect Detection") has chapters on each of the following affective channels: "face analysis", "body expressions", "speech", "texts", "physiological sensing" and "affective brain-computer interfaces". The latter are clearly intended as the culmination of all previous attempts at recording the emotions of test persons under observation.

6 For a good assessment of what the already existing apps and programs are capable of measuring see Jamie Carter, "How mining human emotions could become the next big thing in tech", September 16, 2015 (http://www.techradar.com/news/world-of-tech/future-tech/emotional-data-from-the-likes-of-the-apple-watch-is-this-the-next-boom--1291151).

7 For an introduction into the field and promises of psychoinformatics cf. Markowetz et al. (2014). A critical take on Markowetz' research was offered by Wenleder (2014).

gadgets. The network of technical objects that surrounds us is thus being increasingly upgraded into a sensitive environment, allowing it to interact with its users on the affective level.

This affective level in particular has always marked humans out as unpredictable in a double sense – escaping the grasp of both reason and measuring techniques. But with the establishment over recent years of the affective sciences (cf. Davidson et al. 2003), this has changed fundamentally. One can go back further still to the research into affective programming within the field of cybernetics: although one focus here was on decoding the human affective apparatus and emotional competence as a rule-based programme, there were also attempts to programme computers with "affective" algorithms (cf. Pias 2003-2004; Angerer 2014). This double dynamic of decoding and recoding obeyed presumptions that remained implicit at the time, but which in the light of today's globalised neoliberal politics are becoming increasingly visible.

The *Oxford Handbook* highlights a similar double dynamic with regard to the desired capacities (some of which already exist) of computer-assisted systems. The field of "Affect Detection" covers hard- and software that observes and measures human expressive and physical parameters, processing these data as signals for distinct affects and emotions. The aim is to identify not only consciously experienced emotional states, but also those that remain unconscious (for example because they are too fleeting or too faint to rise above the threshold of consciousness). The field of "Affect Generation" or "Affect Synthesis", on the other hand, deals with the hard- and software that simulates expressions of affect in order to interact with users, not least in order to prompt desired emotional states in them and to supress those that are not desired.

Affect regulation has been associated since antiquity with practices and discourses of self-education, and into the 20th century it was linked with strongly normative demands (defined along lines of class, gender, age and ethnicity) that were to be implemented by each individual. Today, on the other hand, affect regulation is increasingly being delegated to automated systems. This is not necessarily a problem; it is perfectly conceivable that regulating affects with the assistance of doubly sensitive "atmospheric" media may soon be considered a more or less normal cultural technology, just as using electronic media for "mood management" (cf. Schramm 2005) has long become a normal part of our cultural repertoire. Even so, it is important to ask on which assumptions this phenomenon that we call affective algorithmisation is based on, which "feeling rules" (Hochschild 2003: 56-75) it perpetuates, and not least which agendas the proponents of affective computing are pursuing. To this end, we will now examine the history of what has tentatively been called psychocybernetics, especially with regard to the identification of emotions through computer-assisted affect detection, before subjecting media-technological strategies of affect generation to a critical analysis.

Psycho-Cybernetics[8]

When Norbert Elias developed his theory of the growth of civilising regimes of emotional control in the 1930s, the pioneering discipline of cybernetics had yet to be invented.[9] But we may ask whether the process of civilisation, understood precisely as a process of increasingly powerful methods of affective control, is not radicalised by its partial delegation to computer-assisted systems. As the documentation of the Macy Conferences shows, the application of a general regulatory theory to mental and psychosocial systems was intended from the outset, and it was implemented for the first time just a few years later in Gregory Bateson's theory of the double bind. A direct line can be traced from this concept to the development of an *Ecology of Mind*, as proposed by Bateson two decades later.[10] This ecology follows the principle of an inner balance or homeostasis such as that on which cybernetic techniques of regulation are also based.

A similar case is John Bowlby's (1982) theory of attachment, based among others on "feedback" and "control". Bowlby begins by introducing his readers to the principles of cybernetic control theory by describing the feedback function of a thermostat (ibid: 42), before going on to apply this process to patterns of human attachment. In his foreword to the second edition of Bowlby's *Attachment and Loss*, Allan N. Schore gives a strikingly succinct summary of his intentions: "Attachment theory, as first propounded in this definitional volume, is fundamentally a regulatory theory. Attachment can thus be conceptualized as the interactive regulation of synchrony between psycho-biologically attuned organisms." (Schore 1982: xvi) It is also worth noting, incidentally, that Schore later became known for his own wide-ranging theory of affect regulation (cf. Schore 1994).

Another link between affect and the theme of control is already apparent in the name given by David R. Heise to his "affect control theory", which is based on the idea that individual humans choose the kind of actions that will lead to the affirmation of stable "sentiments". The situational emotions generated by these actions thus supposedly match these sentiments. If this is not the case, then the sentiments are adjusted to minimize the resulting tension or "deflection" (Heise 2006: 3-4). Here, then, emotions are feedback variables or "signals" (ibid: 57) for a mental system that wishes to secure its affective-cognitive images of itself and the other. The key point of this theory is its claim that the analysis of sentiments can be used to predict the behaviour of members of large groups. In attitude studies, this approach is used today to forecast the

8 This term was popularised by Maxwell Maltz (1960) in his book *Psycho-Cybernetics*. See also Stefan Rieger's discussion of Maltz (Rieger 2003: 19-22).

9 Cf. Elias (2000), especially 363-448 ("Synopsis: Towards a theory of civilizing processes").

10 Cf. Bateson (2000). This collection contains the essays, written since the 1950s, in which Bateson develops his theory of the "double bind". In his late work, Norbert Elias drew inspiration from Bateson's psychiatric concept for his own sociological "double bind model" (cf. Elias 1987).

behaviour of consumers, voters and similar groups. Affect control theory also offers a mathematical model to minimize deflection and to optimise one's own behaviour, as well as a computer programme to measure sentiments (ibid: 130).[11] As it merges here with information technology, the cybernetisation of affect reaches a new level whose desired and undesired implications have been clearly reflected during the 2010s in a growing economic interest in big data (cf. Mayer-Schönberger/Cukier 2013).

Beyond this general development of a cybernetisation of psychology, with its focus on affective regulation and control, it is possible to trace a genealogy that leads from one of the first psycho-cyberneticists to Rosalind Picard as the figurehead of affective computing.

The Tomkins-Ekman Paradigm

In the 1960s, Silvan Tomkins drew on cybernetic principles to develop an alternative to the drive-based model of the mind proposed by psychoanalysis (cf. Leys 2007: 137 ff.). Tomkins based his approach on a system of affect spectrums (the two terms in each pair mark the strong and weak variants): "surprise–startle" as a neutral affect spectrum; "distress–anguish", "anger–rage", "fear–terror", "shame–humiliation", "dissmell" and "disgust" as negative affects; and "interest–excitement" and "enjoyment–joy" as positive affects. In his system, these affects constitute the primary motivation framework in humans. Shame, meanwhile, is considered the central affect that occurs via the suppression of "interest–excitement" and "enjoyment–joy" and that is closely related to visibility and in particular to the expressivity of the human face. "Man is, of all animals, the most voyeuristic," Tomkins stresses, "he is more dependent on his visual sense than most animals, and his visual sense contributes more information than any of his senses." (Tomkins 2008: 373) The shame reaction consists above all in averting one's eyes under the gaze of others, and, as Tomkins writes, since the self lives and communicates in the face, and in this case especially in the eyes, in shame it turns against itself, so to speak, experiencing this as a kind of mental ailment (ibid: 359). In this model, shame is an existential mode of self-referentiality that points to the vulnerability of the affective organism as a whole.[12]

With this central focus on the face and thus on the visibility of affects, Tomkins laid the foundation for the media-assisted research later conducted by his student Paul Ekman into the identification of facial expressions and their operationalisation. Based on his studies of nonverbal behaviour in the Fore tribe of Papua New Guinea, Ekman came to the conclusion that at least the basic affects manifest themselves in a universal way via specific facial expressions.

11 This measurement of sentiments clearly overlaps with the field of "sentiment analysis" in affective computing that processes texts and terms circulating online; cf. Ahmad (2011).

12 On this, see David Wills' (2009) analysis of the role of shame in Descartes.

Although existing cultural differences in the social "display rules" (Ekman 2007: 4) make the emotions being shown harder to identify, they can be discerned by analysis of "micro-expressions". Since these take place too quickly for untrained observers, media support (initially video, later computers) became a key epistemic factor. In 1978, in conjunction with Wallace Friesen, Ekman presented the resulting Facial Action Coding System (FACS) that was later to become one of the foundations of affective computing.[13]

In 1990s, Tomkins' fundamental research was used in different ways. Firstly, the (re-)discovery of Tomkins' works by Eve Kosofsky Sedgwick was one driving force behind the affective turn in cultural and media studies (cf. Angerer 2014: 49-69). For Kosofsky Sedgwick, the key was the conception of affects as free, malleable variables not attached to any specific object: "Affect, unlike the drives, has a degree of competency and complexity that affords it the relative ability to motivate the human to greater degrees of freedom. [...] Tomkins even proposes a principle for freedom, suggesting Freud's pleasure principle as the model. He calls it the *information complexity, or 'degrees-of-freedom principle'*." (Kosofsky Sedgwick 1995: 35)

Secondly, Rosalind Picard drew on the so-called Tomkins-Ekman paradigm to develop computer programmes for the automated detection of human emotions. In the first issue of the *IEEE Transactions on Affective Computing*, Picard describes finding a report in the *Wall Street Journal* describing the invention of a machine capable of measuring emotions. Its inventor was none other than Manfred Clynes, the NASA scientist credited with coining the term "cyborg" (cf. Clynes 1995). His "Sentograph" was supposed to measure the tiniest variations in the pressing of a button, correlating the data thus obtained with emotional states such as happiness, excitement, sadness, etc.: "I was amused by this crazy fact," Picard wrote. Years later, she was introduced to Clynes by Marvin Minsky, and Clynes told her that when he first presented his device "he was literally laughed off the stage". She also describes her attempts over the following years to ignore the significance of emotions since as a hardworking engineer, she didn't want to get a reputation for being interested in something as devaluated as emotion: doing research as a female scientist on "soft" topics such as emotion would have ruined her career, as she frankly pointed out.[14] Picard finally overcame these obstacles and fears and is now known as a pioneer of research into computers and emotions: "Today we know emotion is involved in rational decision-making and action selection, and in order to behave rationally in real life you need to have a properly functioning emotion system." (Picard 2010: 12) Moreover, the fact that Picard herself founded the company *Affectiva* and has now begun marketing applications – the latest being "Affdex",

13 On critiques of the implementation of Ekman's research, see Tuschling (2014).

14 So it is actually no coincidence that in *He, She and It*, a sci-fi novel by Marge Piercy (1991) it is a female programmer who is responsible for the new program for Yod, the first perfect cyborg, making him (Yod is anatomically modeled male) able to act and respond also emotionally.

a programme to decode the facial expressions of advertising viewers – is proof of the current interweaving of techno-science and business.[15]

Affect Detection with no Critique of Power or Control?

What these uses of Tomkins and Ekman clearly reveal is the divergent valuation and exploitation of affect – conceived of in one case as freedom (from a narrowly defined system of drives and from the hegemony of language) while on the other it opens up applications for neuro/cognitive science and for IT that stimulate new research into control and adaptation of affective and behavioural patterns. Alongside security and surveillance technologies (e.g. "deception detection"), applications of affective computing that already exist or are currently under development include electronically assisted learning (e.g. "affective tutor"), work with autistic people, computer games, robotics, and services in the field of wellness and healthcare. Right across this broad spectrum of potential for affective computing, then, there is an almost total absence of critique. The *Oxford Handbook* contains just one single entry on possible ethical problems (cf. Cowie 2015).

Although Picard herself openly discusses potential objections in *Affective Computing*, she dismisses them with unconvincing arguments. Regarding the threatening scenario of a total, centrally controlled monitoring of affects, she writes: "One can imagine some malevolent dictator requiring people to wear emotion 'meters' of some sort, to monitor their fun, for example. Emotion control might be achieved both by subliminal influences and by overt requirements to engage in tasks believed to lead to certain emotions." (Picard 1997: 123) Picard was clearly not yet able to foresee the extent to which affective surveillance and monitoring might be centralized. In a similar way, she makes light of the problem of collecting and storing "affective information" (or "emotion data"): "Affective information should be treated with respect and courtesy, and its privacy preserved according to the desires of the humans involved." (ibid: 118)[16] In the face of ubiquitous hacker attacks and cyber espionage, however, the monitoring of users by automated affect-sensitive systems leading to the creation of individualized "affect databases" – as in the field of computer games ("gamification", cf. Fuchs et al. 2014) – is a particular cause for concern.

With utter conviction, Picard actually presents her vision as antithetical to Orwell's Big Brother: "Within the family metaphor, the closest image of an affective system is not one of a powerful big brother, but of a pleasing little sister." (Picard 1997: 124) Like a Trojan Horse, however, this figure of the little sister (re-)imports a long tradition of attributions into the world of technology:[17]

15 The homepage http://www.affectiva.com/technology/ refers explicitly to Ekman's FACS as the basis for the programme.

16 See also Afzal/Robinson (2015).

17 One can refer here to a long series of machines coded as female, including Olimpia (in E.T.A. Hoffmann's *Der Sandmann*) and Maria (in Fritz Lang's *Metropolis*).

women as helpmeets, women as invisible assistants, women as naturally more sensitive, women as harmless and undemanding companions, but also the image of women as (technical) seductresses.[18] *The Cyberfeminist Manifesto*[19] was published just a few years before Picard's book, and one of its authors, Sadie Plant, became known for claiming the digital space as a new realm of activity for women: never having being included in the history of the western male subject, she argued, women are now already acting very adequately as the first cyborgs – rhizomatic, multifunctional and technically fully instructed (cf. Plant 1995).

Today, the figure of the little sister has long since taken its place in everyday reality and in media fictions: be it Siri on the iPhone[20] or the operating system Samantha in Spike Jonze's film *HER* (cf. Angerer 2015). Both "girls" are examples of the affect-generating side of this field, as clairvoyantly anticipated by the numerous little and not so little sisters in the sci-fi literature of the 1990s.[21] But whereas Siri stands firmly in the tradition of the subservient female spirit, with Samantha Jonze created a figure who quits her job in spite of her programming. In the phantasm of technological singularity, at least, the millennia-old gender matrix is broken down – in stark contrast to the gender role clichés that are still commonplace in the IT sector, in particular, as shown by recent debates on sexism and feminism in computer games.[22]

Autism, Control and Affect

In our opinion, the ambivalent character of the current interest in affect is especially evident in the attention being focussed on autistic people. In the following, we briefly discuss the links between three such projects – one economic-neoliberal, one technical-normalising, one aesthetic-activist.

Firstly, it is striking that the software industry has been making deliberate use of the specific skills that have long been attributed to autistic people. Clearly, their great ability to concentrate and identify patterns make them ideal software testers and debuggers.[23] The neoliberal economic order has discovered that these skills, previously acknowledged at best as forms of savant syndrome, can be put to lucrative use.

18 Picard herself merely states that women are more emotionally literate, making it logical to cast computers operating on an affective basis as female figures.

19 "Cyberfeminist Manifesto for the 21st Century", February 24, 2015 (http://www.sterneck.net/cyber/vns-matrix/index.php).

20 See "Siri. It understands what you say. It knows what you mean." February 24, 2015 (http://www.apple.com/uk/ios/siri/).

21 Among others, Melissa Scott: *Trouble and Her Friends* (1994).

22 See feminist media critic Anita Sarkeesian's blog: http://feministfrequency.com/about/.

23 "Autistic Coders Get Jobs as Microsoft, SAP Woo Software Sleuths", September 16, 2015 (http://www.bloomberg.com/news/articles/2015-06-02/autistic-coders-get-jobs-as-microsoft-sap-woo-software-sleuths).

This contrasts with another affect-related project associated with the software industry that pursues quite different ends. Since the publication of Picard's *Affective Computing*, autistic people have been among the subjects most often mentioned in connection with testing and applications. It is no coincidence that the ways in which computers can help them to differentiate emotional expressions is also a subject dealt with at length in the *Oxford Handbook* (cf. Messinger et al. 2015; Picard 2015: 11-12). Alongside its therapeutic value, this technical intervention also has an unmistakeable normalising dimension. Autistic people are being expected to learn to identify affects (both their own and those of others) faster and better than neurotypical people consider them to be capable of. In other words, they are to learn to overcome constitutive defects with the help of technical prostheses.

A third affect-related project is being conducted within the humanities. For the Canadian philosopher and choreographer Erin Manning, autistic people offer proof that people's connection with reality can be established and shaped in different ways, and must therefore be interpreted in different ways, too. With reference to the autism activist Amanda Baggs, Manning has stressed that language-based communication is only *one* way of interacting with the world and other people. Instead of generating meaning through language, another possibility would be physical responsivity (cf. Manning 2009). Using the example of Baggs' film *In My Language,*[24] Manning breaks down the spectrum of affect, sensitivity and object-relations to show how a fundamentally different pattern of affectivity is rendered productive here from the autistic perspective. One thing Manning does not discuss, however, is the fact that Baggs delivers her message online with help of her computer.

In the first of the three examples, the affectivity of autistic people is ignored, focussing instead on exploiting their perceptive and cognitive skills for profit. In the second, their "deficient" affectivity is taken as the point of departure for research and applications aimed at compensating the deficits by means of media technology. The third project that differs from the other two by concentrating on *autistic people becoming productive on their own terms*, is the only one that attempts to do justice to the distinct structure of their affectivity and to draw far-reaching aesthetic and epistemic conclusions.

Outlook

The emergence of digital affect- and psychotechnologies might fundamentally change how affect regulation works on an individual as well as collective level. Affect regulation, once described by Norbert Elias as the main factor within the process of civilisation, is now starting to be shifted from being an effect of cultural practices to being an effect of following automatically generated cues and calls. This new affective programming promises to work far more subtly than anything from the age of mass media ever could have done, because it is

24 See https://www.youtube.com/watch?v=JnylM1hI2jc.

designed to adapt to the individual user's affectivity. Every piece of available affective information is seen, within this logic, as relevant for constructing an affective agent that fits the user's desires, habits, preferences and aversions like a custom-made glove. But do the possible benefits that the engineers and marketers promote really outweigh the possible harm that is done when every digitally active individual can be worked on by automated programmes? Or is it not rather time to highlight the tendency of these technologies to subject their users to a total affective control? The wide acceptance of self-tracking gadgets, in combination with the practice of uploading physical data to social media platforms, provides a strong argument for a more cautious approach.

These considerations are taking place within a field that can be described using Bernard Stiegler's concept of "psycho-power". Arguing that Foucault's by now widely applied "bio-power" category falls short of explaining how marketing, mass media and other profit-oriented "programming industries" aim at and manipulate consumers' attention and desires, Stiegler (2010) introduced psycho-power as a complemental analytical term. But whereas Stiegler uses the concept primarily to demarcate the manipulative interventions of careless industries (with affective control and the obstruction of attention as leitmotifs, cf. Stiegler 2014), it should be noted here, specifically with reference to Foucault's writings, that there is also a pleasurable side to power that is not limited to the repressive exercise of that power by those who possess it. Digital media in general, and affect technologies in particular, clearly illustrate this pleasurable productivity. Faced with this new, intense phase in the development of "psychotechnologies" (cf. Bösel 2013), it is crucial to ask what uses of the affective predominate and what alternatives exist that do not always already obey a matrix of capitalist demands. Once again, this raises the question of desire in the age of an "affective *dispositif*" – a desire that is capable of resisting today's total detection and registration, acting as a deferral zone in the sense of an ongoing delay, a spacing (according to Derrida's différance) which resists the pressure of a closed adaption.

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