Chapter 4: Exploring the Limits of Pharmacology

4.1 Homeopathic, allopathic, and heteropathic pharmacology

If we take a step back, the question arises as to whether the idea of 'pharmacological analysis' is not only suitable for a systematization of "what is going on", but whether it might even constitute a type of theory which allows a form of social criticism — even beyond Rousseau's critique of contemporary bourgeois society. We have already seen that the distinction between different ways of practicing self-medication or auto-pharmacology is of great importance. We would now like to take a closer look at three ideal-types of pharmacological practice.

Re-reading Rousseau's texts as documents of an auto-pharmacological quest allows one to extract some important distinctions. First of all, what looked like "autonomy" can now be conceptualized as successful auto-pharmacology. Not the *nómos*, the rule or law, is at the heart of the matter, but the *pharmakon*. *Nomoi* are *pharmaka* in the sense that they allow a self-determination and self-evaluation. But not all *pharmaka* are *nomoi*: theatre, reading, and writing are the most important *pharmaka* that Rousseau discusses. Their use is homeo-pathic in that they try to heal what their misuse has caused.

This re-reading of Rousseau also allows us to distinguish more clearly between three variations of pharmacology: *homeopathic*, *allopathic* and *heteropathic*. The last, the *heteropathic*, is by far the most interesting approach, as it takes an orthogonal position: it fights fire neither with fire nor with water, but sidesteps the problem by

proposing a different (*heteron*) *pharmakon*. This approach seems particularly suitable for digital pharmacology, because it offers escape from the opposition between two polar choices: either a digital "cold turkey", or the surrender to digital *pharmaka* that takes place when apps are used in order to gain control over one's excessive smartphone use.

Let's illustrate how *heteropathic auto-pharmacology* works. In the movie *T2 Trainspotting* (Danny Boyle, 2017) two ex-junkies look back on their youth, which was at the center of the first *Transpotting* movie of 1993. Two of the main characters, Mark and Spud, go for a run and finally end up on a hill, looking down on the city of Edinburgh. Mark explains his heteropathic approach. Detox has never worked, and his advice to Spud is: "Be addicted to something else!" The two friends discuss different options: running, boxing, writing etc.

In the context of *Trainspotting* this advice has a specific connotation: trainspotting as a pastime is not only about drug consumption, but also about social stratification. All the drug-users among Mark's friends are from the working-class; his ex-girlfriend, however, clearly belongs to the upper-middle-class. She ends up as a lawyer and looks down on Mark and his friends. Apparently, their social class had no other *pharmaka* to offer that would have helped Mark and his friends avoid heroin. The most sinister and depressing scenes of the film show Mark's parents watching TV-shows.

A possible hypothesis might therefore be that a plurality of *pharmaka* is the privilege of particular social classes, and to counterbalance *pharmaka* with other *pharmaka* is possible if (and only if!) a variety of *pharmaka* is available. The British upper-class in the 19th century had sports, music, champagne, fox-hunting, religion, cigars, literature and whiskey; the working class had beer and gin. Thus the plurality of *pharmaka* accessible to one, we could conclude, indicates one's social status.

This perspective would frame mono-pharmacology as potentially problematic: to use only or predominantly *one pharmakon* might be a dangerous practice, because it tends to lead to overdosing. Religious fanatism would then look like a dubious mono-pharmacological practice in which being abstinent from other *pharmaka* triggers an overuse of religion (and vice-versa). It seems

to be more than a coincidence that fanatic Islamists and jihadists often refuse other *pharmaka*, just as the fundamentalist Christians in the Bible-belt tend towards abstinence. All the emotional management and self-regulation then needs to be done by religion — overburdening both religion and the subject which is using it. Polypharmacological use may thus prevent psychological mayhem.

There seems to be a structural analogy between this view and Nietzsches's criticism of monotheism. In his view, the polytheism of the Greeks was the more human, more life-oriented and colorful way of looking at the world. The Greeks were not only polytheists, but also poly-pharmacologists. They had a very elaborate culture of provoking different kinds of ecstasy, and a complex system of transgenerational education concerning the skills needed for life. In Nietzsche's view, both Judaism and Christianity lacked this Greek serenity; they already suffered from what we could now redescribe as mono-pharmacology.

Obviously we should be careful about taking Nietzsche's view at face-value. After all, both Judaism and Christianity developed complex systems of poly-pharmacology. What is more inspiring is Nietzsche's view on the social stratification linked to this question: when Nietzsche describes both Judaism and Christianity as religions of slaves, he is pointing to the glorification of weakness, in particular in Christianity. However, we could also ask the question as to what degree social stratification is linked to a certain pharmacological polyphonic capability.

This would explain why heteropathic approaches in pharmacology are so difficult. In *T2 Trainspotting* the character of Spud has to develop the capability to use writing as a *pharmakon* which allows him to stay away from heroin. To find "something else" to be "addicted" to presupposes specific skills.

Rousseau's quest for autonomy now can be re-conceptualized differently. With Rousseau the paradigm of digital pharmacology shares the idea of human plasticity: living a human life is not to "create" oneself, but to define and re-define oneself by habits, decisions, and *pharmaka*. This process of constant "autonomy" now redefined as auto-pharmacology has its limits, of course. However, alongside allopathic and homeopathic approaches the heteropathic approach

of sidestepping destructive *pharmaka*-use by taking up other *pharmaka* offers promising solutions in many cases.

The most important lesson we can learn from Rousseau might be, however, that auto-pharmacology fails when it is understood as a solipsistic project: the Rousseau of the *promeneur solitaire* may be happy, but he is in an unstable, endangered state of mind. His happiness always risks shifting towards madness and desperation. In a way, solitude has become his only *pharmakon* and therefore all the problems of mono-pharmacology are present.

Hegel's way of transposing Rousseau's idea of autonomy to the level of the state seems to provide a more compelling answer to the challenge of auto-pharmacology: in order to learn, you have to learn *from someone*. Institutions ensure that the transposition of knowledge from one generation to the other is achieved. A community of auto-pharmacologists is always already a learning community.

4.2 How to do political pharmacology: 'liberal' or 'republican'

The whole point of the term *pharmacology* consists in the fact that it allows one to compare different pharmacological regimes, traditions, and governmentalities. Every culture in every epoch appears to have created its own pharmacological grammar: societies define what is acceptable and what isn't, what is prestigious and what isn't. And these explicit and implicit definitions have a huge impact on the *pharmaka* that are produced and distributed. The shift from alcohol use to caffeine use in Europe in the 18th century, for instance, had an enormous impact on the cultural and political landscape. Whereas alcohol had dominated the pharmacological field for centuries and served as a way of preventing the transmission of diseases via drinking water, caffeine had a different impact. Some scholars have argued that the rise of democracy starting in the 18th century can partly be explained by the rise of coffee-houses where

caffeine-animated debate took place.[1] Today, caffeine-consumption is a widespread element of a competitive global economy which demands that everyone be constantly alert.

In order to gain some orientation in the complex field of political pharmacology (and pharma-policy), it is helpful to distinguish two ideal-types in the regulation of a modern society. On the one hand, the liberal approach emphasizes individual freedom and individual responsibility. The liberal tradition argues that the market should allow grown up citizens to make their own decisions. State-intervention is usually viewed as a kind of paternalism, a typical way of framing state-regulation is the concept of the "Nanny-State". Legalizing cannabis, for example, is therefore considered to be a liberal idea, as it puts the responsibility for appropriate use of a substance into the hands of the individual. The mechanism of the market in this paradigm becomes a crucial element, for it is the market which decides on the options of the individual.

The contrasting political tradition could be summarized as "republican": this emphasizes the *res publica*, the perspective of public affairs, the common good, and *shared* responsibility. The concept of freedom from a republican point of view should not be restricted to "negative freedom",[2] i.e. freedom *from* state-intervention, but should also include the possibility to participating in collectively binding decisions. Input-legitimacy is what makes republican politics democratic, not the restriction of state-intervention. Citizens are therefore viewed not as an unbound self, as a *homo oeconomicus*, but as a *citoyen*, i.e. as citizens engaging with their political community.

This schematic distinction could be refined by adducing a wealth of historical detail on the interaction between liberal and republican traditions in political thought. The main point, however, is the following: the organization of social interaction will always have to

1 Schivelbusch, Wolfgang: Tastes of Paradise. A Social History of Spices, Stimulants, and Intoxicants, New York: Vintage Books 1993.

2 Instead of summarizing this debate in detail, we will simply name the most important proponents of contemporary Republicanism: Michael Sandel, Philippe Pettit, Quentin Skinner.

locate itself somewhere on the spectrum of privatization on the one hand and collectivism on the other hand. A democratic state will always have to decide whether things need to be regulated or if they can be left to the free-floating forces of the market. Both options imply very different and specific grammars framing the democratic process. Our proposition is to use this distinction in order to extrapolate two kinds of pharmacology: liberal and republican. The way we use *pharmaka* can be viewed as a private enterprise, providing private joy, private advantages, but also private risk. It can also be viewed as a common task, a collective challenge which needs to be discussed and regulated by collectively binding decisions. As we are currently exploring the possibilities and difficulties of a digital pharmacology, the distinction might help us to evaluate the options.

The distinction between a republican and a liberal approach in pharmacology is related to different ways of organizing public health in general. Public health can be viewed primarily either as a result of individual efforts — or as common challenge. The different reactions to the Covid-crisis in 2020 and 2021 illustrate the enormous ramifications of this difference. A liberal approach would emphasize the individual responsibility to protect oneself; wearing a mask then primarily aims at protecting oneself. From a republican point of view, public health is a common good that can only be achieved by a coordinated effort, by collectively binding decisions and rules that are applied to everyone.

4.3 The toolbox of digital pharmacology

Analogies, we have argued, can serve to explore new territory: what they suggest needs to be tested, elaborated, reconsidered. What would we see if we pushed the idea of digital pharmacology to its limits? The analogy of "classical", i.e. chemical pharmacology and digital pharmacology provides us with a huge set of political mechanisms which seem to have helped dealing with non-digital *pharmaka*:

a) The political ontology of substances

Stiegler himself claimed that an ontology of *pharmaka* in the strict sense wasn't possible. Indeed, the "pharmakon-in-itself" ("an-sich", as Kant would say) seems impossible to extract from the levels of framing, contexts and usages. However, there is an ontology of *pharmaka* as a social practice: societies define classes of substances and they categorize different kinds of *pharmaka*. We distinguish stimulants, sedatives, painkillers etc. It is important to remember that these social constructions have very real consequences. The social ontology of *pharmaka* defines whether a product is put on the free market or whether its access is restricted. The classes of substances are usually rather elaborate in their definition: there are substances you are allowed to buy in a supermarket, others are only sold in a pharmacy and of these many require a prescription. And then there are substances such as strong, addictive painkillers which are administered only by medical authorities under medical supervision and are not allowed at all to be placed in the hands of patients. In the case of digital *pharmaka* we are only just beginning to develop useful categories. Distinguishing different techniques, algorithms, exploits or addictive mechanisms would be a preliminary requirement for dealing with them properly, and developing the art of using them in a skillful way. The analogy would therefore imply the option of establishing well-defined categories and classes of digital *pharmaka*. Is this a task we should carry out collectively? A republican digital pharmacology would imply a public categorization and a public definition of different digital *pharmaka*.

b) Exploring the effects of specific pharmaka

In all Western societies the research on *pharmaka* seems to be both a public and a private good. On the one hand the pharmaceutical industry uses private investment to develop new drugs. On the other hand, there is a public interest in supervising this process. Not only does every democracy have some kind of a "Food and Drug Administration", the famous FDA. Most democracies also provide public infrastructures which allow the study of *pharmaka* outside an economic framework. Universities, for instance, provide the opportunity to study the effects of drugs, substances and behavioral pat-

terns. What would be the analogy in digital pharmacology? At the moment almost all research on digital pharmacology is done in the private sector: Google, Facebook, Netflix, Youtube etc. It's the big players who develop new *pharmaka* and analyze their effects. This research is usually directly linked to marketing-models and is driven by the interest of selling advertising or products and gaining data or money. Only in rare cases do public universities produce elaborated research on digital pharmacology. As far as the exploration of digital *pharmaka* is concerned, we are operating in an extremely liberal framework. However, analyzing digital rhetoric, exploits, micro-targeting etc. could however also be viewed as a public task.

c) Regulating consumption

The regulation of non-digital *pharmaka* is a huge field in which very different tools and mechanisms are used. The consumption of chemical *pharmaka* can be influenced by mandatory instruction leaflets: consumers need to be informed about what they use. The equivalent can be found in the "terms and conditions" that we usually quickly agree on when we want to use an online service. A sharper method of influencing the use of *pharmaka* are taxes. The Scandinavian countries are known for taxing alcohol in a rather extreme way; in Sweden or Norway a small bottle of beer can easily be priced at an equivalent of 10 USD. Regulating the use of digital *pharmaka* could also be tried by taxing exploits or cookies.

A specific challenge would be to consider interaction between non-digital and digital *pharmaka*; although it seems difficult to prevent such interaction, the massive mixed consumption of caffeine, alcohol and news is a global phenomenon which requires systematic research. Mixed consumption is, of course, not at all a new practice; it is reflected in classical habits such as reading the newspaper and drinking a cup of coffee in the morning, which can now be framed differently: as a double triggering of dopamine via caffeine and pleasurable mental stimulation at the same time.

d) Protecting the population; i.e. pharmacological "bio-politics"

A classic example of a pre-digital biopolitical attempt to regulate *pharmaka*-consumption on the level of a whole population can be

found in the struggle against alcoholism in the 19th century. The so-called "gin-craze" of the 18th century was viewed as a massive societal problem.[3] Gin made alcohol consumption less expensive and more accessible, in particular for women. The 19th century then saw massive programs to combat the endemic alcohol-problem, in particular in the working-class. Modern equivalents can be seen in regulations such as the EU-regulation REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) ((EG) No. 1907/2006).[4] The aim of this is to protect EU-citizens from intoxication by dangerous chemicals that can be found in all kinds of products.

On the level of digital *pharmaka* the General Data Protection Regulation (EU) 2016/679 (GDPR) looks like a first attempt to ensure something like the large-scale protection not just of individuals, but of a whole population. What Foucault described as "bio-politics", the attempts to direct the hygienic practices of a population, to prevent pandemics, to render the "body" of the people strong, has an *analogon* in political measures aiming at protecting and furthering the mental well-being of the population through systematic regulation of digital *pharmaka*: which would be the politics not of *bios*, but of *nous*, *noo*-politics.

e) Self enhancement — from caffeine to productivity apps

The importance of the rise of caffeine (and decline of alcohol) in Europe since the 17th century has been discussed at great length. New *pharmaka* can change societies for the better; the coffee-houses were not just spaces of open debate and intellectual exchange, but also provided a substance that would allow people to work and think more. The coffee-house in this sense also points to the necessity to frame new *pharmaka*, to control their use and to provide opportunities for the social exchange of experience with self-enhancement techniques. The equivalent of the coffee-house (or for that matter

3 Dillon, Patrick: The Much-Lamented Death of Madam Geneva. The Eighteenth-Century Gin Craze, London: Review 2002.

4 https://ec.europa.eu/environment/chemicals/reach/reach_en.htm (3.2.2022).

the tea-room) can be identified in the virtual spaces of the internet where people talk about their experiences with new self-enhancement technologies, for instance apps such as 'Headspace', or fasting apps.

However, coffee is not the only analogy that can be made. There are more severe substances of self-enhancement such as cocaine, low-dosage consumption of LSD, all kinds of "go-pills" or simply Ritalin. At this stage, we find it difficult to imagine a digital *pharmakon* boosting human performance so intensively that restrictions could become necessary.

f) Pandemic misuse — chemical and digital

The most commonly recognized example of mass misuse of a helpful substance is the pandemic consumption of sugar, causing millions of people to suffer from a fatty liver, diabetes or many other health problems. Cheap carbohydrates could also be classified as a substance almost equivalent to sugar, as they are easily convertes into sugar in the human body. Western societies are only just beginning to understand the pandemic scope of the problem. Fighting bad nutritional habits has been identified as a political challenge, since the health problems caused by overweight, diabetes and liver-failure are going through the roof. In the same way a pandemic of ADHD is calling the overuse of digital media into question, in particular among young children. As we have established that fighting bad nutritional habits is not a plausible individual challenge, but a societal problem, this insight should be used for the fight against the pandemic health problems caused by digital *pharmaka*. The most important lesson here seems to be that it will become inevitable to confront the economic interests of important and powerful players: multinational businesses which generate their profit by offering consumers the quick dopamine kick triggered by glucose, fructose, carbohydrates or digital communication.

g) Addiction, chemical and digital

The opioid-crisis in the US has shown what disastrous consequences an unskillful, profit-driven use of *pharmaka* can have. Opioids are of specific interest when it comes to the analogy of chemical and

digital pharmacology, because in this case the ontological quality (one might even say "essence") of the molecules has such evident impact on the way such substances are used or misused. Of course, opioids can be used in a skillful way as painkillers for short periods of time, as Stiegler also states. However, in this case, the addictive character and the massive impact on the human brain are so strong that strict regulation is needed.

Is there an equivalent of opioids in the digital sphere? It might seem a little exaggerated to think of online gambling as a highly addictive "substance", especially as there appears to be an important difference between chemical and digital *pharmaka* which is very relevant to the case of opioids: digital *pharmaka* can trigger the release of dopamine, certainly — but they cannot themselves replace it. At this point the analogy seems to have reached its limits. Whereas hard drugs such as opioids interfere immediately with the brain chemistry, digital *pharmaka* can only trigger the self-regulation of the messenger substances in the brain.

h) Employment protection

Nevertheless, we need to keep in mind that in both cases people do not expose themselves to chemical and digital *pharmaka* only by their own choice.

Most of the time, it seems that people allow chemical or digital *pharmaka* to enter their bodies because their jobs require it. In this sense a worker in a production plant exposed to chemical substances and a manager exposed to massive digital input could be viewed as analogous. In both cases the question of a collectively defined and legally permitted "maximum permissible dose" seems to be an appropriate response. Not to be forced to answer e-mails in the evening or on a weekend can thus be viewed as an element of employment protection, just as the protection from chemical exposure was defined from the late 19th century on. This, of course, is of particular importance for people working in call-centers or online services.

i) Class differences in self-medication

The analogy of chemical and digital "maximum permissible exposure" clearly raises the question of class differences. Champagne or beer, Cuban cigars or cheap cigarettes, the Italian opera or the brass band — naturally, class differences have always been important in the use of *pharmaka*. Today, there still seem to be important differences between underclass alcohol consumption and upper-class cocaine "self-medication". There are important differences between the consumption of beer (or for that matter gin) on the one hand, and cocaine on the other. Not only in sports do people attempt to distinguish themselves class-wise and to communicate class-identity (e.g. by playing tennis or lifting weights, as Bourdieu has shown)**:** class distinctions and class-consciousness are also evident in the use of *pharmaka*.

They can now be conceptualized as tending towards self-programming and self-enhancement in the case of the upper-classes and distraction and confusion in the case of those exposed to poverty. Pharmacology as a project of emancipation would then hope to put everybody in a position which allows them to use *pharmaka* in a skillful and controlled manner. Just as reading was an important element in the emancipation of the working-class in the 19th century, we are now confronted with the challenge of achieving a new, digital alphabetization.

j) Protection of children

The analogy would also allow us to frame the protection of children from digital *pharmaka* in an appropriate way**.** Exposing small children to uncontrolled TV- or internet-consumption then can be viewed as a form of intoxication, i. e. mayhem. Criminal law would therefore have to be adapted to fit this new social condition. Again, collectively binding decisions are necessary to implement in the digital sphere what is common practice in chemical pharmacology. This would also force us to re-evaluate systematically the way children are exposed to digital *pharmaka* in schools. The class differences here are also evident: upper- and middle-class families protect their children by sending them to Steiner schools, while others see their chil-

dren constantly exposed to digital frameworks, even in elementary schools.

This would also imply the "protection of minors", the necessity of which is evident to everyone when it concerns alcohol, but which is by no means so widely recognized in the case of digital *pharmaka*: access to digital *pharmaka* needs to be restricted legislatively in the same way that other laws enforcing the protection of minors operate.

k) Restricted prescriptions/Regulations on who can prescribe what drugs to whom

The concept of digital pharmacology would also allow us to question who is allowed to prescribe what to whom. Once we reached an agreement that digital *pharmaka* should be treated like chemical *pharmaka*, it would become obvious that not everybody should be allowed to provide any and every kind of digital *pharmakon*. Every country has strict regulations on what substances can be prescribed by what kind of doctor, some regulations being more liberal and others more restrictive. Some kinds of digital *pharmaka*, in particular those developed as extensions of the gambling industry, should not be sold on an unregulated market. Just as pharmacies have the license to sell certain drugs, so digital businesses should be subject to selective or specialist legitimation of what they do and what they sell.

l) Military use of pharmaka

The use of poison gas by the German Reich in World War I was probably the first use of chemical substances for military reasons in modern times. The chemical industry soon became an important branch of the military complex. In World War II, the German military used what was called "tank chocolate": *Pervitin* was a substance which allowed German soldiers to fight in for three days without a break, as the German "Blitz" destroyed neutral Belgium.[5] Of course, Pervitin is just the most striking example of a military use of chemical *pharmaka*. Alcohol has, for centuries, fueled the aggression and

5 Ohler, Norman: Blitzed. Drugs in Nazi Germany, London: Pinguin 2016.

perseverance of soldiers. In the Vietnam war cannabis and heroin became important factors that influenced the state of the American Armed Forces. Today, suicide terrorists often intoxicate themselves with ketamine in order to overcome all inhibitions.[6]

In our modern age, evidently, digital *pharmaka* have become an element of warfare in our days. This is not only true for cyber-attacks which aim at infrastructures, but in particular for the "weapons of mass distraction"[7]: fake news, micro-targeting, (brain-)hacking, the influx of polarizing ideas and distracting topics in the news — all these elements are nothing other than the military use of digital *pharmaka*.

Up to now, all attempts to regulate or ban the use of these weapons seem to have failed. The only option left appears to be an equivalent of the gas mask, i.e. education, which may immunize citizens against the most destructive effects of digital *pharmaka* used as weapons. Framing the problem in this way will, hopefully, help people to understand the gigantic scope of the problem.

4.4 A community of learning citizens: towards a cura publica

Our presentation of the distinction between a liberal and a republican approach to digital pharmacology has helped, we hope, to show different options for dealing with the massive influx of digital *pharmaka* into our societies. The different elements have illustrated what a republican approach to the politics of digital pharmacology would look like: the pressure and complexity of dealing with new *pharmaka* would be seen as a common challenge, not as an individual task. The great strength of the analogy between pre-digital and digital *pharmaka* resides in the conclusion that it allows: no one would claim that dealing with complex pharmacological substances could

6 See for example: Basra, Rajan: Drugs and Terrorism: The Overlaps in Europe, London: ICSR 2019, pp.24ff.; available at: https://www.icsr.info.

7 The term was already used as the title of a television film in 1997.

plausibly be a private matter. Obviously, it is quite simply impossible for the individual to understand and use chemical substances alone, without external aid. No one would claim that finding out about appropriate medication should be the single individual's own responsibility. We need medical assistance, the expertise of psychiatrists and the regulation of the state in order to ensure use of predigital *pharmaka* in a skillful way. The same is true for digital *pharmaka*.

Digital *pharmaka* are *res publicae*, and therefore need to be dealt with in a collective effort, in a common, public and political framework. Only a *cura publica*, a common and public system of care will allow us to use digital *pharmaka* in a skillful way. Large-scale social-psychological health-care is not something human beings can provide on their own; it is not even something that should be left to families or civil society. In order to make sure that the *cura publica* is really public and political, we need to overcome a phase in which the influx of digital *pharmaka* is left to the private interests of the business sector.

In our view this new perspective has a variety of advantages in comparison to preceding attempts to react to the digital crisis. Drawing the conclusions we propose here from re-reading Rousseau will in our view help to overcome a paradigm that might be called "Kulturkritik", following the classical authors of the German Weimar Republic.[8] The digital crisis is not about "decadence" and not about *pharmaka* in general, but about finding and establishing new ways of applying them skillfully. Digital pharmacology is far from an attempt to ignore the great opportunities the new *pharmaka* offer. However, it puts the challenge in a larger perspective.

The German word "Sammlung" ("collection" as well as "contemplation") expresses the idea of a both material and intellectual effort to counteract entropy: As in Richard Long's Circle of Stones, which is reprinted on the cover, collection allows contemplation — and

8 Examples would be authors such as Oswald Spengler, Ernst Jünger, Carl Schmitt, Hans Frayer. In a wider sense, Adorno's essays could be viewed as "Kulturkritik" as well.

vice versa. We view Richard Long as an artist of neg-entropia, of "Sammlung".