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Digital Sobriety: from Tips to Values

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ABSTRACT

While the dominant discourse, from both private and public organizations, promotes Information and Communication Technologies (ICT) as a solution for the environmental transition, it is now well documented that the digital world, on the contrary, is severely impacting the Earth. To tackle this issue, Digital Sobriety, the voluntary reduction of digital consumption appears essential, but it involves deep behavioral changes for which individuals and organizations are not ready.

For a better understanding of the obstacles to change, we propose to analyze underlying ethical values of Digital Sobriety. Values are general principles that guide people or groups of people. Often tacit, these values are also at stake in narratives, and their identification may help to build relevant narratives related to Digital Sobriety.

In the domain of Digital Sobriety, we have identified four ethical axes on which values and anti-values could be positioned: new/old, fast/slow, individual/common, and progress-oriented/frugal. We claim that in order to achieve Digital Sobriety, it is necessary to promote a lifestyle that moves away from new, fast, individualistic and progress-oriented solutions. This initial set of ethical values is tentative and should be refined in the future.

KEYWORDS

Digital Sobriety, Ethical values, Change management

1 DIGITAL SOBRIETY AS A RESPONSE TO PLANETARY LIMITS

Mainstream computing consists in constantly expanding capabilities of our digital tools, in terms of functionalities, efficiency, or speed[24]. It also carries a shared horizon for our modern society, a highly technological future where advanced machines (automatized, ubiquitous, intelligent, autonomous, etc.) are becoming increasingly present in all dimensions of society. This view has been naturally promoted by private companies, but also by governments during the last decades[10]. However, the future, as environmental scientists describe it, looks different. Not only will climate change and other environmental degradation affect everyday life worldwide, but also resources to build the digital world are becoming increasingly rare and expensive to produce. Importantly, while the dominant discourse consists in betting that computing will help us to become more sustainable in all domains, the reality is that the digital world is making things worse[12]: 4% of greenhouse gas emissions, 10% of energy consumption, soil contamination (mining and recycling), water consumption, etc. In addition, this impact is increasing faster than in other domains (estimated at 6% per year[27]).

One solution to this strong ecological impact of ICT is Digital Sobriety. Sobriety is a relatively new term, particularly used in French speaking zones; the term even became commonplace when

it was used by politicians at the start of the war in Ukraine in 2022, to encourage people to consume less energy ("sobriété énergétique", that is energetic sobriety). The concept is much older, and refers to notions such as simple living, or even asceticism, drawing its origins from philosophy and religion. Sobriety is "a lifestyle rooted in reducing consumption of material objects, digital technologies and energy"[13]. Digital Sobriety concerns digital products and services in particular. It covers different attitudes such as:

- Having/buying less digital hardware, software and services;
- Having/buying simpler digital hardware, software and services;
- Avoiding buying new digital hardware, and preferring other alternative options (second-hand, repairing, renting, sharing);
- Choosing products and services that are more eco-friendly (this is of course multi-dimensional);
- Diminishing the time spent with a digital device.

Naturally, Digital Sobriety only makes sense if the reduction of consumption is feasible. In regions where people have limited access to digital resources, there is little to reduce and it would be unfair to consider these situations as similar to the situation of rich countries. The need for Digital Sobriety is therefore specific to wealthy regions which happen to be the ones largely responsible for digital pollution. That is the background for this article.

Digital Sobriety intervenes at the individual level, the organizational level, and the political level. An example of the latter is the recent law in France that requires product manufacturers to provide a reparability index for their products, which promotes products that last longer, which contributes to sobriety (less buying). Note also that often Digital Sobriety applies not only to consumers but also to product designers to cover notions such eco-design [3]. In this paper, we will focus on the consumers or users of digital technology.

Importantly, Digital Sobriety should not be confused with a search for more efficient products. For example, optimizing the usage of a car's computer by using it for other tasks[32] is not Digital Sobriety but a gain in efficiency. While theoretically, it may lead to a decrease in usage, practically it often leads to a rebound effect: gains in efficiency are re-invested into an increase in computation and therefore environmental impact[12][11].

Digital Sobriety is definitely a desirable goal for a sustainable future. In addition, It is also beneficial concerning other societal problems induced by digital overconsumption, such as various forms of dependencies, stress, privacy issues, lack of self-esteem, attention deficits, etc. This article is not the place for a debate regarding these issues, but it is importance to note that the environmental impact of digital overconsumption is highly intertwined with these other societal issues, making Digital Sobriety an even higher priority.

But how to reach that goal? As sobriety is, by definition, a voluntary attitude, how to bring individuals and organizations to adopt this attitude? In many situations, there are insurmountable barriers to Digital Sobriety, in particular at the individual level. For example, in a university context, it has been shown that students must change their device every four years for obsolescence reasons [20]. Nevertheless, part of Digital Sobriety is also achievable at the individual level, and the same article mentions that many students changed their devices (in particular phones) within less than four years. In addition, some institutional decisions may also weaken the effect of obsolescence, which illustrates the importance of Digital Sobriety at all levels. Given the fact that sobriety runs against the ideology of growth and consumption, it is all the more difficult to implement it in our contemporary societies. Even if sobriety campaigns have existed in the past (see the energy saving campaign following the oil crisis in the 1970's), the above-mentioned tendency of governments to promote a digital future [10], combined with the huge marketing power of digital stakeholders, do not facilitate the transition towards Digital Sobriety.

This situation is already well studied regarding pro-environmental behaviors in general. Research in social psychology has shown that an individual will not change their behaviour just because they are aware of the environmental crisis [19]. Adopting a pro-environmental behaviour highly depends on social factors, such as the social norms that prevail in the individual's social environment. More generally, at the level of organizations, this issue also refers to the area of change management. In this area, a common metaphor is used to represent how difficult it is to change an organization, that of the iceberg. It suggests that what is visible, the people and the physical environments (offices, equipment) is the small visible part, the rest, under the water level, consists of the informal part of the organization, that includes "the values, norms, attitudes, and expectations of people who work within an organization" [2]. The domain of *system thinking* also makes use of the iceberg model [21], the deepest layer of the iceberg being either the "mental models", or the "vision" and the "beliefs", depending on the version.

Addressing the issue of Digital Sobriety and ways to achieve it, we believe that it is relevant to work at such deep levels, the deep motivation of people, beyond practical tips that can be given to individuals or organizations. This is not to say that these tips are not useful. From our own observations, it seems that people, once explained the environmental impact of ICT, are keen for advice on how to behave better with their phone or computer. In addition, even if these tips may be little things, they reveal an engagement of people in their lifestyle, and as such should not be discredited [10]. However:

- They are often insufficient, if not insignificant;
- They can be easily "forgotten" at the very moment an impactful decision is to be made (e.g. changing a computer);
- They are incomplete (they only target specific behaviours), therefore leave plenty of room to incoherent behaviours (cleaning e-mails and buying a larger TV the week after, not realizing that modern TVs have a large environmental impact related to manufacturing).

- The satisfaction of doing something good for the planet carries the risk of stopping there, that is avoiding to do more.

In order to tackle these issues at the "deep level of the iceberg", we suggest that a relevant concept is the notion of the **ethical values** that underlie Digital Sobriety. Identifying these ethical values (hereafter, we will simply use the term "values"), that will be defined and refined in the next chapters offers several potential advantages:

- Assessing to what extent an individual or an organization is able to fully embrace Digital Sobriety;
- Guiding the process of change towards Digital Sobriety;
- More precisely, providing the basis for relevant narratives accompanying the process of change.

2 UNDERSTANDING VALUES

The concept of ethical values has been studied for centuries, in various disciplines ranging from Philosophy to Social Psychology and Narratology. Faced with this vast theoretical field, we need to narrow our perspective and achieve an operational definition of the concept. In Social Psychology, S. Schwartz, who produced a seminal work regarding a universal model of human values, defines values as "trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or group" [31]. In this definition, the distinctive feature is "trans-situational" that indicates that values carry a general meaning for the individual or group. Also of importance is the notion of guidance, meaning that values come on top of existing mechanisms that underlie the "life of a person". On this last point, the above definition remains vague as it does not detail what, in the life of a person, is affected by values. The following definition, from a psychological perspective, provides more details on what values affect: "Values are internalized cognitive structures that guide choices by evoking a sense of basic principles of right and wrong (e.g., moral values), a sense of priorities (e.g., personal achievement vs group good), and create a willingness to make meaning and see patterns (e.g., trust vs distrust)" [23]. Therefore, values influence decisions ("choices") and judgments ("make meaning and see patterns"). Finally, what values are is also highly variable across definitions: goals, beliefs, cognitive structures, etc. In the end, values are expressed by a unique term (e.g. honesty), and individuals (or groups) are more or less committed to these values (continuous gradation). Therefore we will define a value as a general characteristic that one associates with actions or situations in order to evaluate them as good (in line with the value) or bad (not in line with the value). These evaluations are continuous, meaning that actions are more or less in line with a given value, to which a given person or group is more or less attached.

Values have been defined above as something that intervenes in human action and judgement. But one must distinguish, at the individual level, between declared values and values effectively at stake when making those judgements. Similarly, at the level of a community (e.g. a company), values exist as part of the culture of the group (these values more or less match values of individuals within the group), but they may be different from values explicitly mentioned in the group's communication (e.g. corporate communication). These distinctions are important, and the establishment

of a system of values for Digital Sobriety that we are aiming at is only a first step. When it comes to using these values to promote change, one has to take into account the whole complexity of the values in groups and individuals. There exist a multitude of values and systems of values. Some research aims at establishing a short list of universal values, often grouped into large domains[30], but it is also possible to identify much more specific values. For example, 500 values are listed in a business-oriented website, so that companies can choose which ones will constitute their core values[7]. In the next section, we will attempt to identify which values underlie Digital Sobriety.

3 VALUES RELATED TO DIGITAL SOBRIETY

Digital Sobriety, and its opposite digital consumerism, are part of a larger concern, that of environment. The link between ethical values and pro-environmental behaviours is being investigated for a long time. For example, in the domain of Education for Sustainable Development, a framework is proposed that incorporates a system of four values (respect of the environment, empathy, respect of others and self-esteem), and also refers to other basic values of environmental education (e.g. Solidarity, Tolerance, Altruism, and Responsibility)[9]. However, L. Sauvé warns us that that "there are no environmental values", meaning that there exists a large panel of systems of values related to environmental ethics, each of them presenting a certain viewpoint regarding the environment, but there exists no consensual system of environmental values[29]. Our attempt to identify values of Digital Sobriety may therefore be naive and vain, but we believe that this quest is useful, should our first attempt be implicitly limited to a certain context[29]. In the domain of Design, the idea that values could guide the process of designing digital products beyond the mere answering to stakeholders' needs has been put forward by several research communities. In Value-Sensitive-Design [14][16] for example, designers are encouraged to integrate ethical values within their design choices. Several values have been identified, including "environmental sustainability" [16]. Our intention is to provide a more detailed account on values underlying digital sustainability, for designers, users, and decision-makers.

We propose in the following a set of eight values, grouped into four ethical axes, each containing an "anti-value" and a "positive value". The anti-value is a value that, when adhered to, goes against digital sobriety. The anti-value is not negative per se, but only related to the viewpoint of digital sobriety. As we will see, these anti-values match our current consumer society. "Positive values", or values of digital sobriety, on the contrary, would tend to favor Digital Sobriety. Importantly, it is perfectly possible to not commit to the anti-values without committing to the positive values. To take a general example outside our domain, a person may not commit to cleanliness (meaning that being clean is not a value for them), without necessarily committing to dirtiness (they would not adopt behaviors that particularly value dirtiness).

3.1 Age vs Newness

In the domain of ICT equipment, it is often particularly important for people and organizations to show that one possesses the latest technology. Beyond technical justifications of this (e.g. in terms

of security), newness of equipment is a symbol of prestige. The "prestige value of newness", as explained by H. Redmond, is cultural, and comes late in our history. While this value is not specific to digital products[5], it seems particularly relevant in ICT, because the digital realm is associated with innovation, which has become highly valued since the middle of the last century[1].

This value of newness is an anti-value, as defined previously: it fosters the constant change of digital equipment, which is a major cause of environment destruction. If, within an organization, this value can be discarded, that is if people stop paying attention to the fact that the equipment is old or new — which, in the end, is a rational judgement— then this organization can make a big step towards Digital Sobriety. But such an organization may go further: it may commit to the corresponding positive value, that is the value of age (or oldness). This value is very present in many cultures, including the western cultures, as evidenced by the popularity of flea markets, historical exhibition, etc. Naturally, it is a bit odd when associated to computing, and we are not recommending to equip an organization with Apple II computers! Nevertheless, it is conceivable for an organization to actively promote the longevity of digital equipment and reward its members who manage to continue using a computer or a phone for 10 years. The members of this organization would be proud to keep this equipment and receive a reward for it.

But, as discussed above on a general level, forfeiting the value of newness does not imply committing to the value of age.

3.2 Slowness vs speed

It is now commonplace to emphasize the ever increasing speed of our society, and that the digital transformation contributes to this acceleration. In this process, speed has become a value. As C. Honoré already wrote, twenty years ago: "The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry"[15]. Regarding computing, we, as users, want to access information in seconds or less, appreciate fluid interaction, expect answers in minutes (social network), hours (e-mails) or days (e-commerce) depending on the context. As mentioned above, this value is in line with research effort in mainstream computing, focused on increasing the speed of calculation for decades.

Consequences of this "cult of speed" on the environment are manifold. First, in correlation with the value of newness, it encourages consumers to buy new equipment, because it is faster (or supposedly faster). Note that it also encourages to buy new software, which then forces users to buy new equipment, for technical obsolescence reasons. Second, also at the individual level, when facing an equipment requirement, buying new hardware is always the quickest— if not the cheapest— solution, while this is the worst solution from an environmental point of view. Alternative solutions include buying second-hand hardware, borrowing, repairing, etc., but all these options require time and effort, especially in institutions that are organized around the procurement function for decades. Finally, at the more general level, valuing speed pulls the market towards ever heavier infrastructures: new networks (4G, 5G and beyond), new undersea cables[26], etc.

The corresponding positive value is slowness. Back in 2005, E. Giaretta proposed that companies could behave more ethically if they chose slowness as a value. It is interesting to note that this proposal was not particularly motivated by the environmental impact of consumerism, but by other ethical issues: dysfunctional products marketed in haste and imposing on customers innovations that they do not really want. More recently, the idea of "Slow Tech" is emerging, as an environment-based alternative to mainstream high tech[25]. Slowness can inspire new technological design[4]. Also, movements promoting disconnection from the Internet follow the value of slowness[18]. It's worth noting that the value of slowness also responds to other societal issues linked to digital overconsumption, such as stress and various psychological problems roughly linked to addiction.

Refusing the value of speed, and committing to the value of slowness are difficult changes, in a society that includes deadlines (including the one for writing this paper), pressure for efficiency, and fierce competition.

3.3 Individual vs community

Individualism consists in valuing a person's independence, freedom and ability to realize one's own goals. While it is dominant in western culture, it is both criticized and valued[33][22]. Individualism is opposed to collectivism. This latter ethical dimension is often at stake when environmental values are discussed. Values such as solidarity, responsibility, cooperation, altruism, are often mentioned as values favoring pro-environmental behaviours[9][29][8]. We are putting such values forward, not only for people to focus on the others (which is effectively central when dealing with environmental issues) but more precisely as a way to solve problems. Again, we take the example of an employee who needs to acquire some equipment. The individual way to solve this problem is to purchase this equipment. The collective way is to tell others, and, for example, to borrow this equipment from a colleague, or to exchange it (for example, exchanging two screens). Similarly, when hardware is outdated, the individualist way to deal with the situation consists of discarding it, while the collective way consists of offering it to the community, hoping for further usage.

More generally, seeing computing resources as valuable assets, shared within a community, may not only rationalize usage, but also help committing to the values of digital sobriety, because it is easier to adopt pro-environmental change when other adopt these changes collectively rather than in isolation: social norms play an important role in the adoption of pro-environmental behavior.

3.4 Frugality vs progress

For some years now, there has been lively debates around the concept of degrowth vs growth in Economy. Beyond the precise meaning of these terms (what grows), these terms themselves resonate with a fundamental value that modern societies have fully integrated: you always have to move towards a better situation than before, in particular in material terms. The value of progress finds its root in the Enlightenment philosophy and it is still dominant, even if the term itself has been largely discarded in the second part of the twentieth century[1]. On the scale of an individual lifetime, we expect comfort to improve steadily, at least not to diminish.

In the digital realm, who would easily accept to have a smaller computer or TV screen than before? Who would accept to replace their flat screen with a black and white monitor? This value has obvious consequences on environmental degradation, as it encourages the constant renewal of equipment and software. Of course, this value is reinforced by the marketing effort of the companies selling these products, that invest considerable sums in persuading customers that their products will enable them to progress towards something better. This value must be distinguished from newness: this is not a question of prestige or social value of newness that is at stake with the value of progress, it is simply the fact that comfort improvement is in the order of things. Rejecting this value means accepting, at least occasionally, that comfort remains the same, or could slightly diminish. It is important to stress that this accepting does not mean "going backwards", since we are talking about slight losses, such as accepting a slower connection in some contexts, accepting that a computer might have issues when aging (e.g. keyboard issues), accepting a smaller screen, accepting a user interface that is not "cutting-edge", etc. Disregarding the value of progress means accepting a loss for a greater good, the safeguarding of natural resources.

What would be the associated positive value? This is not straightforward, and it would be a mistake to simply oppose progress with regression. In fact, the associated positive value resembles sobriety itself: valuing the attitude that consists in diminishing comfort, of being content with little. We found that the appropriate value would be frugality. Frugality has been part of traditional culture and religions for centuries, with extreme examples of ascetics living in isolation in nature, but since the Enlightenment period, it has lost its positiveness[28]. But more recent theorists on sustainability try to rebrand the concept, and make it positive[28]. Valuing frugality means valuing all efforts towards a reduction of individual consumption, should this reduction constitute a small or great sacrifice.

Once again, rejecting to the value of progress is one thing, committing to the value of frugality is another thing. Both attitudes are relevant for Digital Sobriety, the latter remaining difficult to promote in our current society.

3.5 Summary

We have proposed four values for Digital Sobriety, associated with their anti-values. These anti-values are in fact dominant values of our current period, that of Digital Transformation. For Digital Sobriety to be applied effectively, we need to stop valuing digital solutions just because they are new, fast, individual-centred and improve convenience. And then, to go further, we may value digital solutions that promote old equipment, slowness, collective action and frugality.

4 THE USE OF VALUES

Although the previous discussion is at a fairly theoretical level, as it explores a system of values in line with Digital Sobriety, our aim is practical: how to foster change in individuals and organizations towards Digital Sobriety. We believe that the above values, not necessarily all of them, should accompany any campaign for Digital Sobriety, by infusing discourses promoting Digital Sobriety. However, persuading people to commit to some values is not something

possible via a transmissive approach. "New Stuff Sucks", "Slow is Beautiful", "Together is Better" and "Less is More" are slogans that you can find in books or on the Web, but diffusing these messages would have a limited effect. Values are deeply rooted in our personal history, and particularly in our social life, and they are not affected by such slogans. Moreover, the mere idea of "transmitting values" is not in line with current approaches in education for sustainable development. The focus is more on developing critical thinking, letting people progressively build their own values. Finally there is a risk that the above-mentioned slogans will be blocked by an image-conscious hierarchy. To sum up, more subtlety is needed.

We suggest that stories are particularly well suited to transmit these values. In narrative theory, values play a central role in stories. They form the core of the message that is conveyed by the story: what is good and what is bad. The story's author builds those values not by explicitly putting them forward, but by using various indirect strategies: what characters want, what they do, which decisions they take, whether they achieve their goal or not, and how various characters interact around these achievements [17]. In particular, the outcome of the hero's quest, which constitutes what narratologists call the "sanction" in French [6] reveals the underlying value. To put it a little caricaturally, if the character behaved according to some values considered as positive, then he or she is rewarded. Conversely, he or she is punished when behaving against these values. Values and stories are therefore two highly intricate concepts. Telling stories is a natural and preferred way of conveying values, as it has already been highlighted in value-sensitive-Design: "a scholarship of values needs to integrate stories from concrete situations of design practice" [16].

Which stories should be told around Digital Sobriety? Several approaches can be taken: future stories about beneficial or detrimental environmental long term consequences of committing or not to above-mentioned values, fictional short stories related to digital sobriety, or real short stories describing in positive terms how individuals have contributed to environmental safeguarding by adopting some sober digital behaviors. We believe the last approach to be particularly relevant, in line with the use of Digital Storytelling in education and culture.

5 CONCLUSION

Digital Sobriety is becoming an unavoidable issue, given the considerable impact of digital technologies on the environment. Beyond concrete tips and advice regarding Digital Sobriety, working on the underlying values is necessary to bring about changes in behaviour. We have identified four values that should be disregarded in order to achieve profound changes in favor of Digital Sobriety: newness, speed, individualism and progress. In addition, committing to respective opposite values would also help achieving Digital Sobriety: age, slowness, collectivism and frugality.

Is this system of values for Digital Sobriety complete? Probably not, and we expect it to evolve in the future. For example, no value concerns nature itself, which is surprising in the environmental context. The values associated with the notion of caring for objects should also be studied.

Through this short essay, we hope we managed to bridge the gap between high level philosophical and ethical considerations

regarding values and the concrete need to take actions that effectively change our habits and discard our tendency to reason as if there were no limit. Some of our contribution is certainly not new for people engaged in ecological activism, but we believe that our system of four value / anti-value couples enables the creation of a discourse specific to computing and applicable in concrete situations.

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