Valuative Intelligence The Creative Design of our Wellbeing

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I. Introduction

When we talk about 'creative thinking' we mean ideas which are new, useful, and they must also be a bit surprising. These are ideas which propose solutions or make suggestions of a *novel type*, namely, not only combining ideas that have not been combined before, but where their combination is not even similar to previous combinations. This is what makes them surprising, over and above being new. For example, the Swiss Knife exemplified a creative idea, which was new, because these particular items had not being combined before in one, but which was also a new type of combination of functions of that type. It was novel, it was useful, and surprising, as there had not even been anything like it before. Creative ideas are found in industry, business, media, crafts and arts, in engineering and in science. Nevertheless, are there domains where creative thinking does not extend? Are there domains where creative thinking might even be inappropriate? I wish to address the question of creative thinking in the domain of emotions and social values,

to investigate the possibility of the *creative design* of emotions and/or of social values.

First, let us address the question of whether we *need* to be creative in relation to emotions and social values. By social values, I mean all types of value we encounter in society, from personal to religious, cultural, social, national, gender, racial etc. There has always been change in emotions and social values, either motivated by political concerns, or national circumstances, or personal developments, etc. For instance, the move from determining value according to supply and demand, rather than according to the traditional criterion of exerted labour, was creative, when first introduced; so was the notion of a thief suing his victim for violation of the thief's rights (*Express* 2011). Typically, such changes are gradual, but they do eventually spread like waves in society. However, this is presently changing. I will argue that creativity in designing new emotions and values will become an everyday necessity for all of us, on account of the dramatic rate of intrusive technological change taking place in society, grounded on and informed by neurological research findings. I claim that we need to learn how to design new emotions and values ourselves, in view of the rate of social change we are beginning to experience, because we cannot wait for the cycle of academics or politicians introducing new theories/policies of emotion/value, to help us cope with the changing possibilities for attaining wellbeing in our daily lives

II. The need for a Creative Design of Social Values

To understand the possibility, reality and inevitability of rapid changes of social values, one may consider first the changes that have taken place in public values regarding the acceptance of gay people, at first, transsexual changes later, same-sex marriage, homosexual clergy, etc. (Dimock 2013). We have been much aware of such value changes, because of the publicity of their struggles. But there are numerous other changes of values happening all the time *without our realising the changes*, because they do not need to enter into legislation. For instance, changes in our values of privacy (van den Hoven et.al. 2016). What was guarded as

private, in the second half of the 20th Century, found its place on Facebook pages in the Millennials, motivated by social media companies, peer pressure, and our desire for attention. There were of course also reflective changes regarding such values, as the change in our attitude from snitching to whistleblowing; the introduction, acceptance, and even praise, of whistleblowing since the 1960's. However, there were also unreflective changes of value, as the request to declare and keep updating one's 'Status' on Facebook, which encouraged divulging personal information very publicly, information that would have formerly been kept private to the individual (Mullins 2016). Peer pressure, conformity, keeping up, etc., are all platforms for the exchange of values for social preferables of one kind or another.

Social values can also be *hacked*. Consider subliminal advertising (Merikle 2017). Its purpose is to influence the viewer positively for a product, without the viewer realising *the reasons* for the positive disposition they develop towards this product. The subliminal messages may be benign, e.g. a soft colour, but they may also be reprehensible. In either case, the user is developing a positive disposition without being aware of the reasons that are engineered to produce it in her. The possibilities of value-hacking are increasing as we speak, with the spread of social media and the digital methods they continuously innovate to generate new methods of influencing their users, or worse, with the way their networks can be used by others for their purposes. Children are naturally particularly vulnerable (Knorr 2014).

Although subliminal advertising and more generally value hacking have made a negative impression on us, technology is now generating positive reasons for deferring judgement regarding impact to machines – to algorithms. This is not a new trend that might affect our social values; it is an avalanche of social-value-change that will hit society in the coming decade and beyond.

One area that will make severe demands on the design of new social values is the new Generation of the Internet of Things (IoT) (Pieroni et.al. 2015). Smart 'things' will interact with us, on the basis of values that have

been programmed in them, or which they have algorithmically deep-learned or developed, and which will determine their behaviour towards us. Will we leave it to the digital technologists to choose what values to code into smart technology that will interact with adults, the elderly and children? Whose choice should this be? Should the requisite values for smart technology be replicas of our values or different? Are we communicating with persons or machines? Who will decide which and what? Digital companies are not waiting to find out. If machines are to use our values, where will technologists find these values to copy them into their designs or to be guided by them? Will machines need values we do not possess, because of their differences from us, and if so, who will design these values? Here is a simple case of the need for new values to be designed.

One domain in which moral and social values are presently being designed is the domain of driverless cars. These cars, which are being designed by car and AI companies dedicated to profit making, need to appeal to the public, in order to sell. This background principle affects and guides the design of values for the way driverless cars will run (Greenmeier 2016). The reason why we speak of 'designing values' in relation to driverless cars is that we need to codify good road behaviour into rules that can be implemented by the software of the car. These rules must be such as to enable the car to respond to any type of situation, combining unusual and odd circumstances and, particularly, priorities. For all these, which drivers handle on the basis of their developed driving dispositions, which they put to action at a moment of need on the road, the driverless car needs codes which will guide its actions. Some may be circumstances that even humans do not have rules of thumb to follow, such as the Trolley Example from philosophy, e.g. should one swerve left to avoid killing a baby, but risking killing three adults, or vice versa? However countless possibilities may arise. Can it be that a driverless car causing death is not comparable to a human causing death, but comparable to the Ministry of the Interior causing death by not spending more funds on road safety? Can it be that new *types* of value need to be

designed for cars; new *types* of culpability, which are neither human nor institutional?

A far more imperceptible change of value comes from a casual social media habit we all have. They have now developed an algorithm at Stanford, which collects and personalises the 'likes' and 'dislikes' a user registers in social media (Kosinski/Stillwell/Graepel 2013). This collection is then made available for commercial use to advertisers, to stores, to fundraising organisations, etc. Now one may wonder where the new value was generated. It is the following: if the data is sold to an agency that profiles citizens for their political preferences, then the 'likes' and 'dislikes' change their value for the user registering them, and become a public political statement of her beliefs. The innocuous 'likes' and 'dislikes' acquire great civil value for the user in certain social contexts, while the user is unaware of their value. More generally, our digital traces can be used in ways that *retrospectively* change their value and their standing from their original use. Since everything we do, nowadays, leaves our digital traces behind, everything we do may easily change its value for us, once a smart programmer authors a new algorithm for commercial or political use.

III. Holding on to our Autonomy

In his TED Talk on digital DNA, Genomics researcher Jun Wang talked of the 'Digital me' he has created of himself, in the context of a broader programme of developing digital doppelgangers of real people. With information about his own and other people's genetic code and health habits, he has developed digital profiles of each, and hopes to optimise personal and human health prospects by running tests of products and food on the profiles (Wang 2017).

I wish to present a different conception of our 'Digital Selves', which is coming to us uninvited and probably unintended, and which I believe will not only revolutionise our social enterprise, but undermine the very fabric of *personal and public personhood*.

The *Digital Me* or *Digital Self* that I am talking about is the result of the fast-developing *intrusive* digital technology. Already, computer technology can detect emotions on the basis of facial analysis of people: 'IBM's Watson AI can now understand our feelings' (Moldrich 2016). Soon, our mobile phone will be able to read our emotions, our reactions to situations, our feelings for those around us, our emotional profile, even our moral profile, our health condition, our sexual orientation and much, much more (Doerrfeld 2015). However, this is not what is alarming! What is alarming is that once such deep-learning algorithms are installed into our mobiles, they will be able to judge *better than we can judge* in all these domains (see e.g. Farnam Street 2017). Already, the algorithm that judges the sexual orientation of men is more accurate that human such judgements (Siddique 2015).

Deep-learning in AI is becoming very successful in developing algorithms which discern, and make judgements on a host of different circumstances, doing so *better* than humans can; for example, facial recognition, determination of sexual orientation, whether one is feeling empathetic, one's current emotional disposition, and many more. However, this is deep-learning only in its infancy. Very soon, algorithms will prove to be better, often much better, than humans at making judgement in all walks of life. We will trust our mobiles to judge *better than we could* our feelings towards others, and theirs towards us; our chances of professional success; our children's understanding of their homework, and their chances of success in class and in sports; our trust in the claims of others (including the news); and most significantly, our feelings and beliefs about *ourselves*. We will in consequence *voluntarily* ask our mobiles to judge everything for us, because we will think they can do a better job judging than we can. Alarmingly, we are already entering the next generation in the design of algorithms, the *post-deep-learning generation of algorithms*, where 'brain principles will be used in Machine Intelligence' (NUMENTA 2017).

IV. Mind the gap – the Agency Gap!

The natural consequence of this is that others will not respond to us according to how our behaviour strikes *them*; or think about us on that basis; or judge us, and even feel for us feelings according to how we strike *them*. Rather, they will respond, think, judge, feel for us according to what their mobiles tell them we are. They will respond, think, judge, feel what they do about our *Digital Selves* as these are discerned by their mobiles. And we will do the same about them.

The Digital Self is not something each of us possesses: it is a digital profile of us which others will have, and will interact with. It is as if we walked into a room, and all the others could see and respond to is our digital doppelganger in the monitors of their mobiles, watches, or smart glasses. The reason for this is that they will consider this digital doppelganger as more genuinely 'us', than their own conception of us, because this doppelganger will have been constructed on truer, more accurate judgements, made by their mobile algorithms. This is an *Agency Gap*, between the humans' conception of who we are (our Human Selves) and the algorithmic conception of who we are (that is, our Digital Selves in others' mobiles).

It gets more complex, as there is a second gap. When we decide and/or we act, we will not do so according to what *we* judge, but according to what our *mobiles* advise us to do. The set of algorithms in our mobiles, advising us on *our* decisions and actions, will be our Second Digital Selves. If the mobiles of others judge us from our facial expressions, they will not "discern" what our mobiles decide for us to do. This will generate a *Second Agency Gap*, between three agents: how others perceive us (our Human Selves); how *their* algorithms *discern* us (our Digital Selves); and how *our* mobile-algorithms *guide us* to decide and act (our Second Digital Selves).

However, there is an even worse fear. We will eventually relate to ourselves by conceiving of ourselves according to how our mobiles discern us. Our *own self-conception* will be mediated and shaped by what

our mobile-algorithms tell us we are. We will end up trusting our mobiles more than we trust our introspection. A not uncommon response to the increasing intelligence of AI is Bostrom (2015), in his TED Talk, where he expresses the hope that if algorithms develop into super-intelligent beings, they will share our values and so we need not fear them. I would never bet my life on such odds.

These changes are happening fast, and will thoroughly uproot the very way we conceive of ourselves, and how relate to everyone else, including our spouses, our children, our parents, and our best friends.

V. Towards designing and redesigning our wellbeing

How can we address this emerging problem of our *autonomy*, our autonomous agency and the sense of *who we are*? It is *impossible* to stop the progress of technology, for numerous psychological and sociological reasons. Nevertheless, leaving the direction and degree of social change to technological advancements in the private sector would be socially suicidal, because social flourishing is not a priority in a business company's list. If nothing else is done, we will rely on our mobiles to tell us who and what we are. *We will thereby transfer our autonomy to our digital selves*, namely, to the sets of algorithms to which we have relegated judging for us. It will feel as if we have consigned ourselves to our Wiser Big Brothers, because they are better at judging than we are – judging and deciding everything for us, about our environment and about ourselves.

How can we flourish, in these circumstances? What does flourishing even mean, without autonomy and a sense of our own agency? Who is it that would be flourishing? We have encountered this conception of flourishing, early in the history of philosophy. Plato in his ideal state, in the *Republic*, tells us that the Philosopher Kings will come to understand the Good and what is good for society, and they will show the merchant class, who will not be able to comprehend the Good, how to live best and achieve their wellbeing.[1] In that context, the merchant class have deferred autonomy to the Philosopher Kings. Yet, since Aristotle, we have

learned to endeavour to seek our wellbeing ourselves, based on what we learn in society and what we can judge ourselves (Scaltsas 1996). But now, it appears we will move from an Aristotelian conception of well-being, where we author our wellbeing and strive for our flourishing on our own devices, to a Platonic conception of well-being, where *cognitively* higher experts (in this case, algorithms) will tell us how to live and how to flourish. When IT companies exalt the services that IT devices will offer us in the era of IoT, and tell us how such devices will empower us, they fail to see and mention that they will also rob us of our autonomy and agency. Do we want this? Is this inevitable, as a result of the success of deep-learning devices? If we do not want to lose our autonomy, can we do something about it to avoid it?

I believe we can, but we will need *new values* to help us redefine our flourishing, in view of the role that algorithms will play in our lives. So, how do we design new values? How do we design new conceptions of human flourishing and wellbeing, rather than have them dictated to us by deep-learners. Presently, we do not even learn how to design our wellbeing, but shape it piecemeal, on the basis of directions we get at home, at school, from friends and colleagues, and our own judgement. This, though, will not suffice, because *all of them* will be replaced by better judges, algorithms! How do we stay ahead of algorithmic advancement, and take hold of change, and be able to confidently allot algorithmic advice in its slot within our world-scheme, rather than allow them to a lot us in the slot of 'users' of their advice.

The need for such an education is urgent. We need to *modify* our understanding of personal and social wellbeing. We need to be able to design and redesign our conception of personal and social wellbeing, to keep up with, and even get ahead of technological intrusiveness, least we are flattened and replaced in its wake. Most of all, we need to learn how to *creatively design* new values, to design novel values of unprecedented types, for unprecedented social circumstances, for us and our machines. Yet, we need to start by learning how to design our wellbeing, before we can aim for redesigning it in creative ways.

VI. Valuative Intelligence

What I propose in this paper is that the general approach to the design of *new, even creative social values* (including all types of value governing and guiding our behaviours) is learning how to *trade emotions for values and vice versa*. This is a bold claim, which I will buttress with philosophical tradition and neurological discovery, and a challenging one, in view of the fact that nobody is being trained at school or university how to do so.

The philosophical tradition, which in my understanding grounds and supports the inter-trading of emotions and values, starts with Plato (Cooper 1997), and culminates with Aristotle's Theory of Deliberation (Barnes 1984). It all starts with Socrates' Hedonic Calculus, in Plato's dialogue the *Protagoras* (Cooper 1997b, 35lb-358d) and the *Phaedo* (ibid. 1997a, 68c-69c). Socrates considers whether our good and wellbeing is a good calculation of which pleasures to pursue, but ultimately rejects it in favour of pursuing the good. Importantly for our purposes, Socrates here distinguishes pleasure from the good, the latter given to us by rationality, and hence distinguishes pleasurable activities from good activities for our flourishing. Thus, we cannot inter-trade pleasure and the good.

Plato, too, does not think that we can inter-trade pleasures and the good, because they cannot communicate between them through rationality; appetitive desires are irrational, according to Plato.[2] However, I submit that Plato made a breakthrough that paved the way for Aristotle to introduce what I call inter-trading of pleasures and the good, or better, inter-trading bodily pleasures, emotions and values in our pursuit of wellbeing. The breakthrough is that there are 'rational desires'. This comes in the exposition by Plato of the Tripartite Division of the Soul, which classifies the motivations we have for decision and action into three: the Rational motivations; the Emotive motivations; and the Appetitive motivations. What I consider Plato's breakthrough is that all three types are presented as *desires*, which shows them to have a common genus, at some level of classification: rational desires; emotive

desires; and appetitive desires. The philosophical tradition and commentating on Plato's work has considered the irrationality of the appetites as determining the breakdown of communication between the three parts of the soul. I am saying, by contrast, that their common desiderative genus can become the ground for the development of an exchange between them, which is what I have argued Aristotle has done in his theory of ethical deliberation.

The Rational part of our soul, speaking Platonese, may be motivated to seek healthy pursuits; the Emotive part may be motivated to aim for honour or an emotion; and the Appetitive part may be motivated to pursue bodily activities and desires. As soon as one recognises that there are desires that are generated by rationality, namely, *rational* desires, as Plato recognised through the Rational part of the soul, pone is introducing a *desiderative-lingua-franca* between the parts of the soul, *even if reason cannot function as lingua-franca between them*. *Reason can prevail by the strength of the rational desires as desires, rather than by convincing appetites through reasoning* – which it cannot do, since appetites are not sensitive to reason. The exegetical tradition has understood the Platonic trichotomy as documenting the breakdown of communication. I am suggesting that, on the contrary, it opens the way for the communication between all the parts of the soul: goodness can be achieved by the *balanced satisfaction* of the desires of the three parts of the soul.

The difference between the (early-Plato) Socratic Hedonic Calculus and the (middle-Plato) Tripartite Division of the Soul is that, once rational desires are introduced, which are desires stemming from what we now call *values*, e.g. for health, wellbeing can be pursued by balancing these desires – by running the Hedonic Calculus across rational, emotive, appetitive desires. Plato did not see this, because he thought there is an insurmountable obstacle between rational and appetitive desires.[3] I am claiming Aristotle saw this possibility, and explained it, introducing even *pleasures* of virtuous activities from the satisfaction of rational desires, and implemented it. This is why I see Aristotle as finally paying justice to

what Socrates was trying to do with his Hedonic Calculus in Plato's *Protagoras*.

Aristotle has a different conception of the human soul than Plato, believing that the soul is divided into a Rational and an Irrational part, but where the Irrational part is sensitive to the Rational one.[4] What does sensitivity mean or entail? It means that the agent has methods by which to *train* and to *shape* their irrational desires to accord with the rational ones. For example, if one believes that excessively fatty food is unhealthy for them to consume, they may train themselves *not to desire* such food. As that agent trains her appetites to dislike excessively fatty food, she is enabling her appetites to 'listen' to reason by becoming shaped (through training) by considerations of reason. There are many qualifications to this method, having to do with the age of the agent, the type of the desire, the method of training them, etc., but we will not get into this discussion here. Rather, we leave it as a subsequent question to pursue, for the *educational* programme that would follow from this proposal of inter-trading appetites, emotions and values in the pursuit of our wellbeing.

Aristotle holds that our wellbeing can be achieved as the harmonious activity of rational biological organisms. It is what we may call a '*Holistic Hedonic Calculus*', where the holism will be explained below as the agent's ability to reshape the desiderative parts to fit the eudaimonic whole through joint satisfaction. The argument for this position is complex, and involves the Doctrine of the Mean, as Aristotle understood it, and his Function Argument for human beings, which I will not discuss here (Scaltsas 1996). What I will point out here is that his argument is not intellectualist. I submit that Aristotle does not set rationality as the ultimate common denominator, the way Plato did. For Aristotle, I contend, rationality is constituted by the Holistic Hedonic Calculus of the harmonious pleasurable activity of the totality of one's desires.

Aristotle seeks to harmonise the desires of the soul (Scaltsas 1996, 299-302). Harmonising them will be guided by the *experience* we have inherited from our elders, and from our own experience, understood as a

whole through rationality. Rationality is not presupposed as a primitive it is built up, bottom-up.[5] Reason and the rational desires are put to the test, and are shaped and reshaped along with the rest of our desires, to finally deliver the best balance for the achievement of harmony in the satisfaction of the desires of the whole soul. It is what we might call a rich conception of rationality, grounding the achievement of wellbeing. What I have been referring to as the *inter-trading of appetites, emotions and values* is exactly this shaping and reshaping of desires of all kinds, of the rational organism, to achieve harmony between them. Rational desires ground values and motivate us towards values; emotive desires ground moods and attitudes, and motivate us towards items we feel for; and appetitive desires ground sensations and passions of various types, and motivate us towards 'objects of desire'. Harmony between them is not a matter of balancing them against each other; it is a matter of shaping them and reshaping them to achieve a type of unity in the activities of the rational biological organism, which the ancients called *eudaimonia* and we call flourishing and wellbeing. Wellbeing is not a sensation of pleasure, or an emotion of happiness, or an experience of satisfaction. Wellbeing is activity, it is a way of living life that achieves *harmonious satisfaction* of our rational, emotive and appetitive desires.

Is Aristotle, or the reading of Aristotle I propose, credible and sound? Can, indeed, emotions and appetites be *traded for* and *reshaped with* rational values, and vice versa? Can this trading require or result in new types of value and feeling which we will *design*? My claim is that we can take this step confidently, going a step beyond what Aristotle described, by allowing for the *creative* design of values, emotions and appetites I base my claim on the Aristotelian background theory of wellbeing, and on neuroscientist's Antonio Damasio's findings that the origins of our mental life, which governs our behaviour, including appetites, emotions and values, are physical feelings (his somatic marker hypothesis, e.g. itching, hunger, longing, etc.) (Damasio 2008, 1991). Physical -feelings have grounded the desires (Lenzen 2013) that turn out to be our evolutionary currency for appetitive, emotional and valuative reactions to the world.

VII. Neuroscience in support of the *Holistic Hedonic Calculus*

According to Damasio (2001), physical feelings were the proto-conceptual; proto-emotional; and proto-valuative experiences of the 'mind'. Physical feelings grounded emotional reactions (widely speaking) towards the environment, which have been the fundamental currency of the mental in its evolutionary history. These emotional reactions can be organised, classified, streamlined, to ground mental conceptions, dispositions, and principles that govern our lives (Stenning 2002, 263-266). Backtracking on our evolution, we can 'liquefy' the mental conceptions, dispositions, and principles we have developed into the currency of positive and negative emotional reactions, or desires at large (which were originally grounded on physical feelings), in order to redesign these desires and reconfigure them into new forms of conceptions, dispositions, and principles that will facilitate our flourishing and wellbeing. Experiments of Antonio Damasio, which have shown that emotions (i.e. desires at large) are much more primitive, as a ground of reasoning and of decisions to behave, than concepts (Damasio 2010, 2003, 1999). Emotions (broadly understood) have guided action, pre-conceptually, as early in the evolutionary chain as before simple organisms were formed – when there were only gene formations of life. Concepts came much later, *not* to replace the behavioural compass of emotions, but as an additional layer of organisation of mental life, to guide behaviour, in working out the utility and functionality of emotional evaluations of the environment for the organism. Stenning (2002) built, theoretically, on the experimental results of Damasio, utilising Wittgenstein's semantic theory of definition, and explained how emotions operate as the ground of *abstracting* and of classifying, on the basis of similarities of impact of the environment on the organism. More generally, the way the world impacts emotionally on us grounds the way we comprehend our world. We classify things, activities, and relations in our environment on the basis of the feelings generated in us from infancy in our interaction with our environment (Stenning 2002). It is emotions that underlie analogy, comparison, and similarity. The concepts we use to classify and order our representations of what there is around us have non-linear, affective foundations; these affective foundations predate, evolutionarily, the creation of language,

and have guided our behaviour towards others, and towards cooperative or adversarial situations in our environment.

VIII. Teaching the *creative* design of wellbeing

We live in an era of constant radical change: of environmental, social, and digital transformations. Our possibilities for flourishing and for wellbeing alter drastically every decade, and soon, every year, rather than every era. We face the need of designing and redesigning our wellbeing *ourselves*, if we are to attain flourishing within our lifetime, let alone to flourish in every phase of our lives. How do we do this, in the midst of digital social flux? What we learned as children about flourishing and wellbeing from home and school does not suffice for guiding us through the new digital infringements and predicaments. How do we design, and redesign anew our wellbeing?

The educational challenge goes deeper. At school we are taught how to solve *conceptual* problems. Wellbeing is not a conceptual puzzle; it is a problem that involves conceptual, emotional, appetitive and valuative incongruities, together, which we need to smooth out, so as to attain goodness in our lives. Smoothing out incongruities can be achieved only by redesigning our desires through training. So here is the new challenge: How does one solve the problem of redesigning concepts, emotions, appetites, and values, in order to handle the radical flux of algorithmic digital intrusions into our lives? We conducted an experiment to find out.

In Project C2Learn (2012-2015) about teaching 'emotive lateral thinking' in schools, during the pilot phase of the project, our educators asked the participating students 'Socratic Questions', to understand their process of thinking, which motivated them to propose *creative solutions* to the problems we had posed to them (Stenning et.al. 2016). What soon became clear to us was that, intuitively, the students were putting into practice Aristotle's intuitions about deliberation, vindicating Damasio's (2010, 2003, 1999) conjectures about the origins of our mental life and the *primacy* of emotions and feelings in our mental evolution. What the

students were doing was to search and find ways to 'trade off' values for emotions, in their effort to plot ways out of the predicaments we had presented them with in our stories.

We presented intractable social problems to school students in three different European countries, and suggested methods to them of how to go about devising conceptions of wellbeing for exactly such incongruous circumstances. Our goal was to see if they could cope with the challenges, and if yes, what the mechanism was for achieving the goal of innovating new shapes and colours of human wellbeing.

They surprised us. We gave them stories, with dissonant social situations they had not encountered before, and they innovated in their design of possibilities for flourishing in them. They did it effortlessly, uninhibitedly, but sensibly. So, what did we learn from them? We learned that they can understand how appetites, emotions and values can be designed and redesigned, by 'liquefying' them, recalibrating them, recombining and remixing them with appropriate training. The 'key' for this procedure was: trading, negotiating, mixing, carving up, and redistributing appetites, emotions and values, which initially had seemed resistant to bartering and reshaping.

This is what we need to introduce in educational training in schools, in order for students to learn to design values and emotional responses to challenging predicaments, rather than learn to 'conform' to these demanding circumstances and accept their inevitability. When systematised, this training will involve Emotional Intelligence and Valuative Intelligence, explaining the methodological differences between them. This would empower students, and any adults so trained, offering them understanding and showing them how to take the 'pilot seat' in the algorithmic challenges we will face in the era of the smart IoT, by designing *themselves* and their own future *wellbeing*.

Explaining what *Valuative Intelligence* is to school students is demanding and requires a panoply of examples, suitable for different ages, about how we can *generate* new values, as opposed to simply inheriting them through social media interactions and social traditions. We need to

explain to students what 'value hacking' is, by the deep-learning algorithms of intrusive digital technologies in the smart IoT era, and show them how they can, in response, design and shape their own *values* – whether moral, social, cultural, gender, ethnic, racial, etc. values.

It is essential to begin teaching this skill to all: students and adults alike. The method has been given to us by Aristotle: Deliberation, which is the ability to *weigh up and rationally trade* (by training) emotions, feelings, and values, in order to attain a coherent and harmonious operation of the total activity of a human organism.[6] However, going beyond Aristotle[7] we need to learn to *design* new types of value, and new types of feeling to situations, in order to respond to unprecedented social circumstances that await us in the coming days. Emotional Intelligence will help us identify our emotions, feelings and attachments towards situations and people, including ourselves (Goleman 1995). Valuative Intelligence will help us identify our commitments to principles that govern our behaviour, and the reasons for them. We need to learn how to let our Emotional Intelligence communicate with our Valuative Intelligence, in order to keep building conceptions of wellbeing that will incorporate the changes in society rather than surrender to them.

IX. Conclusion

Our *intuitions* are not sufficient to guide us through the search for our wellbeing. The demands of continuous social flux are too challenging and urgent to face them untrained in Valuative Intelligence. Traditionally, parents and schools teach society's code of ethical behaviour to young people, and the professions to adults – the do's and don'ts. Nevertheless, bygone are the days of aspiring and acquiescing to 'leaving things as we found them'; things as we found them cannot cope with the changes happening from every direction, nowadays. Today's changes of the environment, of society, and of smart IoT technology are fundamental and uprooting. Students and young adults will not be able to use the emotional and valuative solutions for wellbeing that worked for their parents, which they learned from their parents. In addition to the

wellbeing codes of their parents, young people need to learn *how to design their own codes of wellbeing*, lest algorithms do so for them. They are not taught this skill anywhere, at present; but training them so would equip them to configure, themselves, ways of flourishing, despite the incongruities they will face in their social environments. Students need to learn *if and how* goals, feelings, and principles *can* or *cannot* be reconfigured, in order to attain the elusive wellbeing in today's society. If we do not empower them so, the changes of smart IoT will roller-coaster over their lives.

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[1] Plato, 'Unless . . . philosophers become kings in the cities or those whom we now call kings and rulers philosophize truly and adequately and there is a conjunction of political power and philosophy . . . there can be no cessation of evils . . . for cities nor, I think, for the human race.' (*Rep*. V. 473c11–d6)

[2] *Republic* 439c-d: 'there is something in the soul … with which it loves, hungers, thirsts, and feels the flutter and titillation of other desires, the *irrational* and appetitive—companion of various repletions and pleasures".

[3] According to Plato, appetitive desires are a-rational, namely, they are not sensitive to rational considerations. Plato's example is that when one is thirsty, one wants a drink, rather than a healthy drink; thirst does not recognise healthiness as an advantage of some drinks over others, making them 'good' or 'better' drinks. In consequence, the Rational part of the soul needs to impose itself on the other parts, especially on the Appetitive desires, in order to satisfy only the desires that would not undermine the pursuit of the Rational ones. In other words, wellbeing is achieved, according to Plato, only by the use of self-control in the pursuit of the soul's desires, frustrating some in order to pursue others. Plato, *Republic* IV 436e–441c.

[4] 'The appetitive and in general the desiring element [in the soul] in a sense shares in it [in the rational principle of the soul], in so far as it

listens to and obeys it; this is the sense in which we speak of paying heed to one's father or one's friend.' (*Nicomachean Ethics*, 1102b 30–32).

[5] I believe that this includes the Principle of Non-Contradiction, which Aristotle discusses us in *Metaphysics* Γ (Gamma) 3–6; but I will not argue for it here. Aristotle says is that even if one denies the Principle of Non-Contradiction verbally, her behaviour will betray her: 'For why does a man walk to Megara and not stay at home, when he thinks he ought to be walking there? Why does he not walk early some morning into a well or over a precipice, if one happens to be in his way? Why do we observe him guarding against this, evidently because he does not think that falling in is alike good and not good? Evidently, then, he judges one thing to be better and another worse.' (*Metaphysics*, 1008b 14–19).

[6] Aristotle says: 'it is held to be the mark of a prudent [*phronimos* = practically wise] man to be able to deliberate well about what is good and advantageous for himself, not in some one department, for instance what is good for his health or strength, but what is advantageous to the good life in general [*eu zên ólôs* = wellbeing].' (*Nicomachean Ethics*, 1140a 25–28).

[7] This is deliberately provocative. Aristotle standardly said that we deliberate about the means for an action e.g. *Nicompachean Ethics* 1112b15-20; but he also said, enigmatically, that 'Virtue makes the target [the end] right; practical wisdom makes the things towards it [right; i.e. the means]' (*EN* 1144a7-9). However, since virtue is developed by training in the values of society, the possibility emeges of diverging from tradition, when society designes new values through such training.

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