Ethics at the age of information

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Abstract: Insofar the interactions developed between social, technical and natural agents have been now significantly modified by the new information and communication technologies (ICT), we can speak of a new social dynamic arisen therefrom. Moreover, the central role that information takes in social life has lead us to talk about the dawn of the information age. If we take this seriously, a consequent ethical thinking should start unravelling the tangled skein through rephrasing what information really is and how it can be understood throughout reality. Otherwise, how could we think our proper behaviour embedded in the complex realm of informational interactions of all kind?

In any case, is it feasible puzzling out most appropriate behaviours from the outset –as a sort of optimized code? Or rather, are there fundamental constraints setting the optimum completely out of reach and our whole (cultural) history just the path of the exploration? The globalisation process, developed in strong connection to the deployment of information technologies in very unequal benefit to different groups of the global human system, settles a situation in which the management of the global system complexity is significantly apart from democratic handling, despite the broad usage of democratic facades. Indeed participatory process –concerning relevant decision-making issues– are hard to be found behind these facades. Addressing the issue of inequality at the global scale is in our view a fundamental question of today's information ethics for which an approach based on electronic-Subsidiarity is proposed.

Keywords: information ethics, complexity, globalisation, democracy, ICTs, Subsidiarity, e-Democracy, e-Participation

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1. At the dawn of the information Age

Any historical process, in which the change of social relations is important, usually entails the development of significant ethical reflection. This was for instance the case of the Greek classical period in which the pillars of the western ethics were set up; the turbulent period of the Zhou dynasty experienced by Confucius in which the grounds of this strong tradition was casted; or in more recent times, the emergence of the bourgeoisie in which the liberal ethics –deeply embedded in our globalised societies– were deployed. This is linked to the obvious fact that since new adequate ways of action have to be searched, then new behaviours need to be imagined, thought, deliberated, assessed, and even tried before they crystalize in institutionalized ways of action, that is, before a new morality is achieved. In case the change in the social relations is larger, the required reflection is correspondingly deeper.

If as often stated, we are entering in the "era of information", in which completely new social, political and economic relations are been created, the required ethical reflection will probably last long. Nevertheless since these new relations emerge from the increasing role of information in social life and the space of possibilities derived from the information itself (similarly as the natural properties of iron conferred a new space of possibilities for the societies of the Iron Age) a preliminary stage of the required reflection concerns the very nature of information. Now then, we are far from having a general understanding of information throughout the natural and social sciences, the techniques, the arts and everyday life (Díaz, 2010, 2011, 2012; Capurro & Hjørland, 2003). We find indeed a number of meanings which makes hard the starting point of unveiling the new space of possibilities emerging from the new role of information in our social life as to look for most appropriate ways of action, i.e. to think ethically.

Letting aside the dispute of information concepts, we can provisionally state that information can be generally understood as *what enables the selection of changes in a system*, be the latter of physical, biological, cognitive, technical or social nature (Díaz Nafría & Zimmermann, 2013, 2013a; Zimmermann & Díaz, 2012). Such understanding offers a good interplay with the concept of energy, branded at the splendour of the industrial age, thus offering a clue for distinguishing what the new age might bring about. Whereas energy stands for the possibility to perform changes in the system, information refers to the potentiality of selecting such changes. When the change is performed, the systems is actualised – its structure changes in some manner – and a new space of possibilities is deployed for the system. In other terms, Information drives the energy as to produce some particular change. If we now observe the importance given to energy at the industrial age – even to the point of considering the usage of energy as welfare benchmark –, rooted in the fact that it is energy what enables the transformations provided by an industrial system quite stabilized, the relevance of information, bestowed in our age, relies in the fact that it is the selection of changes in the socio-economical system what comes to the fore.

A good approach to understand this transformation can be done through contrasting an *industrial-* with a *Turing machine*. Whereas in the former, the set of operations is fixed (say stamping a given form into a piece of material) and these can be performed once and again just by providing enough energy, in the latter, it is the *action table* what indicates what operation the machine really performs. The operation can of course be repeated if needed, but the essential point is that the action table may completely change the operations the machine performs very dynamically. If we now extent the comparison to the socio-economic system, the means of transformation – defining the set of actions the social system performs

as a whole – can now be in continuous change, in virtue of the information management. This does not mean that the selection of changes were irrelevant in previous ages. It is indeed the substrate of any evolutionary process in the adaptation of a given being to its dynamical environment (Wiener 1989); but what now changes is the dynamicity of implementing such changes.

In the industrial age, the selection of changes is partially crystalized in the machinery that performs a work which outputs are 'allegedly' legitimize by the peoples. The need to adapt the socio-economical systems to their dynamical conditions was provided, on the one hand, through the division and serialization of work linked to the development of durable and reliable machines which in turn set the reach of changes; on the other hand, by properly managing the human organization of industrial tasks which in turn offered the possibility to readapt the productive processes as a whole. This management of human resources established indeed a twofold society composed by the class of the organisers and the organised, i.e. the industrials and the workers. The space of personal freedom, theorised in the liberal ethics, can be grasped as a generalisation of what in the first place is just freedom of choice in the organisation of socio-economical tasks –with respect to the ancient or feudalist mode of organisation–. This freedom of choice was subsequently extended to the liberty of selecting purchase objects –which obviously represents a sort of liberty subordinated to the former.

In the information age, the flexibility of the global machinery of production, steered by information processing, transforms the whole landscape of socio-economic relations and the space of liberty for the social agents. The current possibility to slough off a significant part of the global population from the productive system without any loss of productive ability change completely the game of buying and selling the working force as a fundamental element of the global market, and requires a new social game in which the fulfilment of the Bill of Human Rights (including the economic, social and cultural ones) could really be achieved. To that end, a new value system (able to reflect cherished relations and assets for the global society at large and the earth-ecosystem in which it is embedded) and a new regulation of socio-economic agency have to be erected as to reduce the steady growing inequality and the contradictions of the actual game with respect to its biospherical sheltering. Meanwhile the capability to steer the global economic system through information management, which reproducibility is practically costless, represents a significant risk for a decent human life. For some, information should be socialized as a means to guaranty redistribution of wealth, for others, it is the asset that have to be protected by property laws as a means to keep the economic system running. A thorough reflection on new value systems, as well as on new socio-economical agencies in the global information society as to figure out more appropriate ways of behaviour shall constitute fundamental pillars of the ethical thinking of our age.

Nevertheless, recalling the aforementioned Turing machine model, might this question be translated into algorithmic informational terms as a kind of optimal code capable of deploying best behaviours? On the one hand, Turing machines depend on action tables, which in turn rely on some semantic grounds; on the other hand, there is no computable means to ensure the achievement of the optimal code. Since the semantic grounds are put by humans in the first place, and these have a cultural and historical nature, even the simplified quest of the optimal (computational) behaviour return to the outset: How to act is thus inseparable from *who* is acting and to what *context* she belongs.

2. Democratically seizing complexity in a globalised world

There is a straightforward way to cope with the complexity of a system comprised by too many functional parts and interactions of both internal and external nature: arranging the system in a hierarchical levelism in which at each level its agents follow the rules and mandates given by upper level, interact with other agents of the same level, and manage its constituent subsystems of the underneath level. This is a strategy we can recognize in feudal societies but also in the traditional university order, or in the current industrial organisations which productive relations are spread over the globe –just to provide a few examples–. A similar structure can be also recognised all over nature, though in this case there is no external intention to cope with the related complexity, it is thus self-organised complexity in which new ways of agency may emerge (and it does necessarily emerge in an evolutionary perspective, otherwise self-organised complexity would never occur; cf. Zimmermann, 2012).

Nevertheless, this is clearly alien to the very concept of democracy in which agents operate under relative equalised opportunities and make decisions in a participatory manner (in the case of *participatory* democracy) or through delegation (in the case of *representative* democracy). But, can this concept be properly devised at the global scale? Can electronic means – as considered since the 19th century – serve as a means to deploy democracy globally or even to implement the ideal of participatory democracy (Bingham et al., 2005)? And finally, the inequality we have seen constantly growing globally since the 18th century (Milanovic, 2009) is actually compatible with democracy?

2.1 Globalized social systems

The new geopolitical reality of globalisation clearly overwhelms the cast of the democratic nation-states in which the rule-of-law is still preserved (Dahrendorf, 2001). Such order was actually developed within the nation-states, and particularly in the liberal democracies, in virtue of a continuous negotiation between the capitalist and labour forces enabling the reproduction of the productive relations in exchange for a power balance opposed to the natural tendency of capitalism (Bowles, 2007). But this reservoir of power balance, crystallised in a rule-of-law guaranteeing social rights, has been progressively undermined through several historical factors concerning (as argued by one of the authors elsewhere, Diaz Nafría, 2011): (i) the introduction of automatic production processes; (ii) the networking technologies at the service of the financial, commercial and productive economies; (iii) the constitution and advocacy of capitalist interests by unobstructed international institutions; (iv) the growing power of transnational corporations.

Using Marx's analysis, it is the development of the *productive forces* within the frame of the existing *productive relations* (reflected and legitimized in the *property relations*) that leads to the contradictions between productive forces and relations (Marx 1859). Such process brings about a repetitive obsolescence of the productive relations and the subsequent necessity to re-express them in the existing political frame. This is particularly the case under the capitalist economy in which the productive forces are impelled towards a "free, unobstructed, progressive and universal development" (Marx, 1973: 540).

Hence concerning the liberal democracies, it can be stated that while the productive forces have evolved within capitalist economy, the productive relations and the corresponding property legitimacy have done it in the democratic frame of the nation-states.

This represents an opposition of forces corresponding to a logical contradiction between pure *democracy* and *capitalism*, namely *equality* vs. *inequality*, or *participation* vs. *dominancy*. Its dynamics drives to a recurrent agreement obtained under pressure which terms are updated in constant struggle, at least until the 1980s (Bowles, 2007). But henceforth, the preponderance of the aforementioned historical factors, which origins date back to the early post-war years, have driven to a significantly different situation.

On the one hand, the global institutions represent a new means to press the terms of the agreement with the nation-states, which still legitimate the productive and property relations. On the other hand, the internationalization of productive forces and relations makes that the productive system can flexibly adapt to one or another batch of labour forces to keep on functioning, thus being able to bypass regulatory constraints. And furthermore, the development of automation creates (under the current productive relations and labour regulations) brings about a structural unemployment that impairs even more the negotiation ability of the working forces at the level of the nation-states in which such regulations are kept. In Noble's words who has carried out a thorough and long-term research on the impacts and societal potentials of automation: "There is a war on, but only one side is armed: this is the essence of the technology question today. On the one side is private capital, scientized and subsidized, mobile and global, and now heavily armed with military spawned command, control, and communication technologies." (1995: 3). On the other side, workers are in disarray (and herein knowledge workers have to be counted, cf.: 2011).

Under these conditions the rule-of-law, passed at the level of nation-states and international institutions at the same time, represents the crystallisation of power relations that undermine the average citizen's possibility to cope with their real-life problems, even the most humble ones. In this sense Dahrendorf's liberal advice (2001) of relying on international rule-of-law as a means to spread democratic principles requires an additional prerequisite (similar claims to Dahrendorf's can be found all over the spectrum of European recipes, for instance concerning electronic-Democracy and electronic-Participation: CE, 2009: G44; Millard et al., 2009; OECD, 2009). The case of the European rule-of-law is particularly interesting regarding its alleged democratic values: when the peoples manifested their reluctance to pass the Treaty establishing a Constitution for Europe, the peoples were considered to be wrong and equivalent regulation was adopted through different mechanisms in the form of the Treaty of Lisbon. What is then the democratic value of this transnational rule-of-law? Should we rather speak of façade democracy?

2.2 Democratic participation

It makes sense to seek after the *general will* of a culturally homogenous society, as in the case of the Greek *polis,* or the political communities Rousseau may have born in mind (1913). But if we cannot rely on cultural homogeneity, can we really speak of *general will*?

In the first case, the general will (or *will of the people*) can be articulated in participatory procedures rendering a sort of "government by the people", and its legitimacy is actually entangled with trust and solidarity which ultimately rest on a deep normative sense of identity and "a shared common conception of history, fate, memory, constitution, and nation" (Moravcsik & Sangiovanni, 2003). This identity makes adhering to the decision of the majority worth for the minorities. And as McIntyre (2006) argues, it is within the small communities where the constitution of such general will can be achieved. He finds just herein the salvation from the dissolving forces of liberal capitalism. Consequently he advocates for "a politics of self-defence for all those local societies that aspire to achieve

some relatively self-sufficient and independent form of participatory practice-based community" (Kelvin, 1998: 23).

Nevertheless in transnational contexts – like the European one – the coexistence of different cultures is even worth to be kept, as cultural equivalent of biological diversity of price for adaptive potential. Then even if the small communities are kept as a reservoir or source of virtues (following MacIntyre), we can conceive larger social arrangements as communities of communities… And here we may find a complex set of interests in which commonalities could be unveiled at different levels. Therefore instead of general will, we can here speak according to Moravcsik and Sangiovanni (2003) of "*public interest*". Under this perspective, the government cannot be seen as driven by the people, but rather as "government for the people". The search and preservation of such public-interest provides a legitimacy of a different kind based on the satisfaction of wider classes of "problem-solving concerns" that can be shared by members of various, nested or overlapping groups (local, regional, national or international). Ultimately, the difference between the first type and the second can be seen as just a difference of degree: some common values are also backing the adherence to the public interest. Similarly as we can conceive cultures in terms of (evolving) sets of well-proved solutions to common problems, the legitimacy that may once back up the EU might be regarded as a complex hierarchy of cultures of different granularity.

Nevertheless, according to these authors, not only the EU is far from being able to devise a kind of legitimacy of the first kind (based on the general will), but even concerning the second kind, it has rather "succeeded in thwarting the public interest in favor of a less popular neoliberal agenda. As a result, the EU suffers from an illegitimate neoliberal bias." (2003: 6).

Regarding the potentials of the information and communication technologies to the underpinning of democracy at the global scale, Habermas relies on them for the generalisation of the political archetype, devised in the enlightenment for the international community of scholars, to the global public (1995). Furthermore, he contemplates the hope beyond the representative democracy-reliant nation-state in terms of a deliberative democracy-reliant political organism, based on the equal rights and obligations of citizens (1981). But how is this borderless deliberative politics conceived? Grounded in his theory of communicative action and his discourse ethics, an *activist public sphere* contributes to debates on matters of public importance, oriented to decision-making. However, criticising Habermas, other authors (e.g. Capurro, 2011; Vattimo, 1989; Fuchs, 2010), argue that the alleged public sphere, as a place of purely rational independent debate, has never existed, neither the material conditions are given to its eventual deployment. According to Fuchs (2010), because of "unfair material advantages in public opinion formation (such as through the ownership structure of the mass media) for certain groups [...] Habermas's notion of the public sphere is therefore idealistic". This reproach is quite aligned to the criticism held by the UNESCO throughout half a century concerning the concentration of communication means in a few hands (Mattelart, 2003; Díaz, 2011). Fuchs then advocates for the advancement of a concrete cooperative society (2010).

As mentioned above, the current state of development of the national and international forces makes that often our prideful representative liberal democracies are rather façade-democracies. In this sense, the Information Technologies cannot do, concerning democracy, what the social relations intimately rejects, and therefore we often find *electronic-Democracy* (e-Democracy) facades with no democratic intention behind (Reniu, 2012; cf. CE, 2009). At the opposite pole, we can find bottom-up processes in which the information and communication technologies are successfully appropriated in connection with a collective

emancipation and identity construction (Cohen et al., 2012; Gravante, 2012; Golubeva & Ishmatova, 2013). Consequently, several authors consider at the agendas of e-Democracy practise and research (based on thorough analyses of the state of the art in the field) the fundamental objectives of addressing the deepest problems of democracy as lack of real bottom-up participation in relevant matters, power relations, or the foundational aspect of equality and inclusion (Díaz et al., 2014; Sanford and Rose, 2007; Macintosh et al., 2009; Medaglia, 2012; OECD, 2009).

2.3 Inequality and Subsidiarity

Though the aspect of inequality is widely considered in eP studies, this is often addressed in terms of *digital divide* (CE, 2009; Millard et. al. 2009; OCDE, 2009). Nevertheless, this very concept has been shifted from the technological perspective of connectivity to the broader aspect of social inclusion (Warschauer, 2004). The issue is then quite more complex than usually addressed, on the one hand, what the digital divides encapsulates are divides of deeper social kind; on the other, eP at a global scale is hindered by additional divides concerning civic, linguistic and cultural gaps (Macintosh et al., 2009; Díaz & Capurro, 2014). But at the fundamental level of democratic principles in which eP is strictly rooted, we can distinguish a tight connection to equality.

Democracy since its Greek roots is conceived as linked to both equality and liberty (Aristotle, 2004: VI, 2). *Equality* with respect to the capacity to decide upon available common options; *liberty* with respect to the self-determination or autonomy of the community members, who should not depend on some authority in order to make really free choices. Equality thus concerns the right to participate equally (social value), but it also entails that a minimal satisfaction of needs is provided as to ensure real autonomy (material value). Therefore concerning material equity democracy admits a certain degree of inequality, but this is strictly bounded by the need to guaranty autonomy (Post, 2003). As it has been proven, though democratisation can be achieved under inequality conditions, in the long term, it undermines the consolidation of democracy (Houle, 2009) and moreover, it is correlated to the decrease of democratic political engagement (Solt, 2008). This relation has even been stated by the OECD in the report concerning public engagement: "Decision-making is founded on broad participation and equality of citizens" (2009: 146).

In historical perspective, it can be observed that despite the constantly growing global inequality since the 18th century (measured for instance through the Gini coefficient), the localised reduction of inequality has often been associated to democratic processes, as in Western Europe, where the strengthening of social security systems improved the autonomy of the citizens during the decades following World War II (Milanovic, 2009; Jolly, 2006; Cornia, 2004). But since the 1980s, we observe within these countries a heterogeneous increase of national inequality, as well as between EU countries. Again, this provides an additional clue to the EU democratic deficits.

To this respect, it is remarkable to recall that, it was in the context of the dramatically increasing inequality, observed in the industrialised areas of the 19th century Europe, that the *principle of subsidiarity* was developed and incorporated into the socio-political agenda (von Nell-Breuning, 1990). Although the concept is historically rooted in the Calvinistic understanding of community, it was the arisen contradiction between work and capital that made evident the undermined autonomy of the many and subsequently the inability to accomplish the principles of democratic liberalism. Hence, it progressively became a fundamental principle of democratic liberalism, a pillar of the Catholic Church social doctrine, and it is now one of the foundations of the EU who has coded the principle in the

following terms: "Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level." (EU, 2008: art.5). Internationally the principle has been coded as a foundation of decentralization and co-responsibility (UNDP, 1997) and it has been even devised as a core concept for the organisation of complex systems (for instance, in the field of neuropsychology and cybernetics).

In this last respect, there is an interesting historical case not significantly addressed in the e-Democracy literature which actually concerns an early development and remarkably successful case of e-Democracy: the *CyberSyn* project developed between 1971 and 1973 in Chile under Allende's government. The case is of significant interest because it addresses at a time the issue of democracy, inequality and subsidiarity, and it has been extensively documented, in particular since the last book of Medina (2011, 2008; Beer, 1975; Díaz, 2011). Nevertheless despite Allende's strong concern of furthering radical democracy in an efficient way, it must be born in mind its direct connection to nation-state political-economy and how the leeway of the latter has significantly changed since, as argued above (sec. 2.2). But the scalability of the organisational core model of subsidiarity is capable to address the additional complexification that should be address in order to handle e-Democracy at a global scale as we will discuss bellow in sec. 5 (cf. Díaz, 2011; Díaz et al., 2014).

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