Towards a Cultural Critique of the Digital Humanities[1]

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"The English texts of non-native writers cannot be assumed to reflect their vernacular discourses."

A. Suresh Canagarajah, *Geopolitics of Academic Writing*

"[Nisargadatta] Maharaj said quite often that books get written; they are never written by authors. Only a little thought is necessary to see the truth of what he meant. He was NOT referring only to books on spiritual matters; he was referring to *all books*. In the overall functioning of the manifested universe, whatever was necessary as written or spoken words appeared spontaneously …. No credit or blame could attach to any individual writer for the simple reason that the individual is a mere illusion and has not autonomous existence."

Ramesh S. Balsekar, *Experience of Immortality*

1. The Last Dinosaurs

Is there a non Anglo-American Digital Humanities (DH), and if so, what are its characteristics? This is the question Manfred Thaller asked me several months ago and is the reason why I am attending this meeting. However, from our early exchanges a striking difference in our approaches began to emerge. Like other eminent European scholars, especially Dino Buzzetti and Tito Orlandi, Thaller identifies differences in methodology as the key criterion distinguishing several DH approaches (i.e. continental vs. Anglo-American DH). I agree that the methodological issue is very important, but I don't see our two opinions (i.e. methodological vs. cultural monopolization) in strong conflict. Of course much depends on what we mean by "culture" and "methodology". There has always been an attempt in Anglo-American DH/HC to maintain a methodological dominion (and dominance) in terms of applications, standards, and protocols. This is natural in any situation of competition. Besides, to assume that the root of this dominion is cultural does not mean to deny that a methodological monopolization exists. But where do the "monopolies" come from? In my opinion, methodologies are successful sets of interconnected discourses on procedures and rules that arise from dominant cultural visions. Any distinction or genealogic attempt reminds me of the obstinate persistence

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[1] Translated from the Italian by Federica Perazzini and Desmond Schmidt.

of the Aristotelian form/content dichotomy. This simple dualistic approach does not reflect the multi-layered nature of cultural objects. One of the core assumptions of my own approach to DH is that any human-born knowledge (including computer science) is subject to the *cultural law of the artifact* (Vygotsky 1978, 1986). This law affirms that both material and cognitive artifacts produced by humans are subject to the influence of its environment, culture, and the social habits of the individual and groups that devise and make use of them. The artifact influences and at the same time is influenced by its context; in other words, technology is always a part of culture, not a cause or an effect of it (Slack and Wise 2005, 4; 112).

Given this perspective, it is clear that answering our opening question is far less simple than one could expect. From the historical point of view, it would be easy to answer "Yes" since, for example, Italian "Informatica Umanistica" has a strong tradition and a long history.[2] But from the point of view of the scientific results, research projects, and institutional presence, Informatica Umanistica, like most of the "other" DH practiced in the world, practically doesn't exist. The reason for such a partial or total invisibility (depending of course on the countries and the observer) is no mystery: the indisputable Anglo-American hegemony in the academic research field. This phenomenon, certainly complex and debated, is perfectly summarized by Suresh Canagarajah (2002) in the famous story of Chinese dinosaurs. In April 1997, the *New York Times* published an article titled: "In China, a Spectacular Trove of Dinosaurs Fossils is Found". Although the discovery had been made around one year earlier, the American newspaper reported the news in that time because it was publicly announced by Western scientists the day before, during a conference at the Academy of Natural Sciences at Philadelphia:

> The discovery had been made by a Chinese farmer. The date he discovered the site is not given anywhere in the report. His name is also not given. The name of the international team and their university affiliations are, on the other hand, cited very prominently. … When the newspaper claims that "the spectacular trove was not announced until today" there are many questions that arise in our minds. Announced *by* whom? *To* whom? … The whole world, it is claimed, knows about the fossils after the announcement at the Philadelphia conference. It is as if the finding is real only when the West gets to know about it. It is at that point that the discovery is recognized as a "fact" and constitutes legitimate knowledge. Whatever preceded that point is pushed into oblivion. (Canagarajah 2002, 1-2)

Having said that, the aim of this paper is not to question the prestige of Anglo-American colleagues, reversing the current hierarchies or proposing new and more objective rankings. In fact, I came to realize that pursuing this kind of investigation would be a vain, though healthy, exercise. On the other hand, peripheral cultures don't need any revenge or, worse, any seat at the winner's table and that is why the aim of this paper is simply to acknowledge a situation, evaluating it for itself and perhaps suggesting that a different model is possible.

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[2] There is not much information in English available on the history of *Informatica Umanistica,* but Geoffrey Rockwell has effectively outlined the Italian scenario on a recent post on Tito Orlandi *festschrift*: http://www.theoreti.ca/?p=4333.

In the last ten years, the extended colonization, both material and symbolical, of the digital technologies has completely overwhelmed the research and educational world. Digitalization has become not only a vogue or an imperative, but normality. In this sort of digital "gold rush", the digital humanities perhaps have been losing their original openness and revolutionary potential. If we want to win them back and, at the same time, move forward, it is important to start from the analysis of what I personally see as the most relevant DH bottlenecks.

2. Forms of the Crisis

The first, identifiable gap has to do the slight tendency of DH to develop what French sociologist Pierre Bourdieu called "a theoretical model for reflecting critically on the instruments through which we think of reality" (Bourdieu and Chartier 2011, 47). Or rather when new tools are created, one reflects on their use or their impact, but what is most important, namely their cultural foundation, is only rarely considered. In other words, it is as if DH has always started from the "results" without considering the entire process that led to them. A recent article by Alan Liu expresses concerns about the "lack of cultural criticism" (Liu 2012, 492) of DH, and with a very appropriate image (in complete contrast to mainstream tendencies), calling for the foundation of an "intellectual infrastructure" for the digital humanities. By underlining, among other things, the "political" limits of the instrumentalist approach, Liu's article is a breath of fresh air in the Anglo-American context, even though it doesn't address the geopolitical unbalance or the economic interests that operate at the heart of the DH system.

The reluctance of DH to reflect on the origins of its objectives has probably various causes, but there is no doubt that the historical character of the humanities disciplines has contributed to an excessive concentration on conservation, management and data analysis, while neglecting the more revolutionary contribution (in both a positive and a negative sense) of computing, and its capacity to affect research processes even before they produce anything.

Another, more concrete, limitation concerns the geopolitical and the cultural-linguistic composition of the discipline, and hence the tools used (Fiormonte 2001-2002). The problems here, although deeply entangled, are of two types:

a) the composition of the government organs, institutions etc., inspiring and managing the processes, strategies and ultimately the research methodologies (thus affecting also the visibility of the results);

b) the cultural-linguistic nuances and features of the tools (cf. Fiormonte 2008; 2009).

Within this second category one can also identify:

b1) the cultural and political problem of software and platform (e.g. social networks) almost exclusively produced in the Anglo-American environment, and b2) the cultural-semiotic problem of the different tools of representation: from the icons of the graphical interfaces to the Unicode standards, from the proxemics of the *Second Life* to the universal concept of usability etc.

The following section will focus primarily on a) and b2), sacrificing for reasons of space the important software issue b1). But proceeding in order, we start with the institutional and organizational structures.

3. Geopolitics of DH (and beyond)

Anything but a superficial investigation reveals that the influences of the coding system are in general pervasive, because they are accepted as the unquestioned standard. Each medium and its corresponding technical realization, as Harold Innis explained (Innis 1951), implies a *bias*, and is subject to the "cultural law" mentioned above. A banal example is the long dominion of the 7 bit ASCII code (American Standard Code for Information Interchange), which has been the character set used by most computing platforms – the Web included – for more than 40 years. The same techno-cultural bias also affects most of the services and instruments of the network, e.g. the domain name system. For the last forty years it has not been possible to use accented vowels in a URL address, and in spite of recent IETF and ICANN efforts[3] the new *Internationalizing Domain Names in Applications* (IDNA) system can be implemented only in applications that are specifically designed for it, and is hardly used in Latin alphabet-based URLs. Some of the original top-level domains can be only used by US institutions. For example, a European university cannot use the top-level domain .edu, which was and is still reserved only for US academic institutions. The domain .eu could not be included in the top-level domains until 2006, and applications for top-level domains using characters outside of ISO-Latin were only recently invited (requests are open from 12 January to 12 April 2012). ICANN (the Internet Corporation for Assigned Names and Numbers) finally allowed the opening up of top level domains to Arabic or Chinese characters, included in Unicode, but every decision rests in the hands of an organization under the clear control of western industries and governments. The request procedure is very complicated, many of the rules are described only in English, the cost of the application is $185,000, and the application does not guarantee that the request will be accepted. The applying institution needs to show a clear technical and financial capability that must be certified discretionally by ICANN itself. The problem is that ICANN, although it has always taken decisions of global relevance, still lacks a clear institutional and multi-stakeholder accountability. Up to 2009 the ICANN, self-defined as a "not-for-profit public-benefit corporation", was controlled by the US Department of Commerce[4] and even today, its current CEO, Mr Rod Beckstrom, is past president of the National Cybersecurity Center (NCSC) for the Department of Homeland Security[5] – an impeccable pedigree for a cybercop but less appropriate for a manager of a shared resource such as the Net.[6]

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[3] http://www.icann.org/en/news/announcements/announcement-30oct09-en.htm.
[4] http://www.readwriteweb.com/archives/commerce_department_loosens_grip_on_icann.php
[5] http://www.icann.org/en/biog/beckstrom.htm.
[6] While Western governments and companies try to preserve their primacy on the Internet, data show a different scenario. In terms of access to the Internet, Western Countries

And in areas closest to the hearts of humanists, the power structures don't appear to be any less discouraging. Unicode is a case in point. By its own definition the Unicode Consortium is, at least in theory, a non-profit organization "devoted to developing, maintaining, and promoting software internationalization standards and data, particularly the Unicode Standard, which specifies the representation of text in all modern software products and standards".[7] Its Board of Directors is currently composed of two from Google, two from Microsoft, one from Apple, one from JustSystems, one from IBM and one from OCLC[8]. The Executive Office is not much different: the president has been a Google engineer since 2006 and, apart from a couple of exceptions coming from the academic or research worlds, no public institution is represented. Seen realistically, Unicode is an industrial standard controlled by the industry. And claims about the neutrality or impartiality of this organization appear to be at least questionable.

If this can be taken as a credible example of the global situation, it is clear that the position of DH must also be affected. Compared to a survey carried out in 2001 (Fiormonte 2002), even though so much effort has been expended in making existing DH associations and organizations more international, the impression remains the same: a solid Anglo-American stem onto which several individuals of mostly European countries are grafted. Figure 1 shows how boards and committees of the eight top DH international organizations (four associations, one network, one consortium, and two journals[9]) are composed. The data are organized by country of institutional affiliation, i.e. what is shown is not the country of origin of the member, but the place where the individual appears to work. Table 1 aggregates data from the same organizations and shows the effect of multiple appointments, i.e. how committees and boards tend to replicate themselves, sometimes appointing the same people for up to five different organizations. These roughly collected data may be insufficient to demonstrate that current top DH organizations suffer from ethnocentrism, but they certainly point out a problem.

(Europe and USA) represent only 35.7% out of the total of the users whereas Asia records 44%. (Source: http://www.internetworldstats.com/stats.htm).

[7] http://www.unicode.org/consortium/consort.html.

[8] http://www.unicode.org/consortium/directors.html

[9] Association for Computers and the Humanities (ACH), Alliance of Digital Humanities Organizations (ADHO), Association for Literary and Linguistic Computing (ALLC), Centernet (International Networks of Digital Humanities Centers), Digital Humanities Quarterly, Literary and Linguistic Computing, Society for Digital Humanities/Société pour l'étude des médias interactifs (SDH-SEMI), Text Encoding Initiative (TEI).
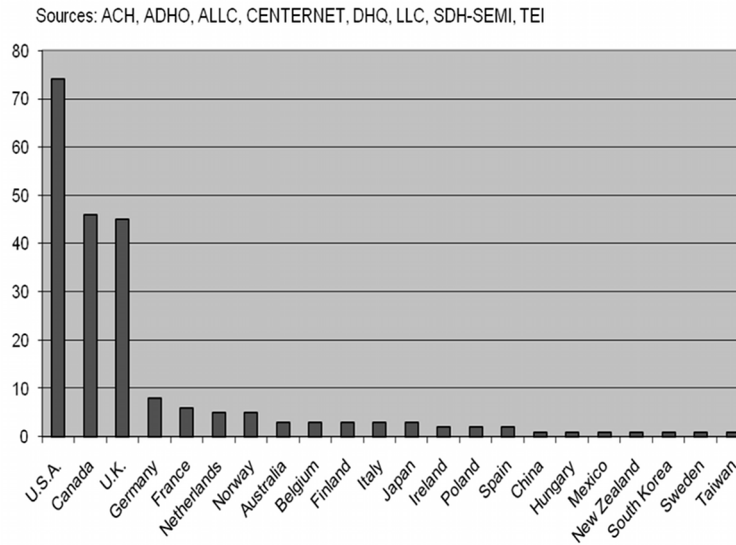
Figure 1. DH organizations: presence of individuals by country of institutional affiliation.

	ACH	ADHO	ALLC	CNet	DHQ	LLC	SDH-SEMI	TEI
John Unsworth (5)		▨		▨	▨	▨		▨
Melissa Terras (5)		▨	▨	▨	▨	▨		
Geoffrey Rockwell (4)	⠿			⠿	⠿		⠿	
Michael Eberle-Sinatra (4)		⠿		⠿		⠿	⠿	
Ray Siemens (4)		⠿		⠿		⠿	⠿	
Stéfan Sinclair (4)	⠿			⠿	⠿	⠿		
Susan Brown (4)	⠿			⠿		⠿	⠿	
Bethany Nowviskie (3)	☆	☆		☆				
Daniel O'Donnell (3)		☆				☆	☆	
Jan Christoph Meister (3)			☆	☆	☆			
Lisa Lena Opas-Hänninen (3)		☆	☆			☆		
Lorna Hughes (3)		☆		☆		☆		
Neil Fraistat (3)	☆	☆		☆				
Susan Hockey (3)					☆	☆	☆	
Willard McCarty (3)	☆				☆	☆		

Table 1. Multiple or cross-appointments top-list. In cross-hatching are shown people who appear in five organizations, in four with dots, and with stars in three.

Of course, initiatives such as Centernet, ADHO (Alliance of Digital Humanities Organizations[10]) and CHAIN (Coalition of Humanities and Arts Infrastructures and Networks) have the merit of gathering and registering the major realities of the Atlantic Axis (USA–Canada–UK) but this is just a self-

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[10] At the moment, ADHO's Steering Committee is made of 7 members, of which only 2 are not from USA or UK: http://digitalhumanities.org/administration/steering.

strengthening operation of existing identities rather than an actual knowledge-sharing or an exploration of other cultures, methodologies or practices.

Consider also the monolinguism of the above sites and organizations. Their rhetorical structure doesn't leave space for anything but the "inner" Anglo-American rhetoric and academic narrative (Canagarajah 2002, 109-127). Furthermore, the self-report of some initiatives, such as Melissa Terras' *flatland,* contributed to presenting Digital Humanites as an empire made of two macro-kingdoms, USA and UK, about which orbit a few satellites (Figure 2). These sort of universalistic representations (or self-representations) appear only to reveal the actual state of subordination from which non-English speaking digital humanists suffer; a situation that is triggered the very moment we use the label "digital humanities".

One exception to this scenario is the THATCamp un-conference series (http://thatcamp.org/), which is becoming a good opportunity for peripheral communities to share alternative views of what the digital humanities are or could be.[11] This seems to be the case of the recent initiative Humanistica.eu, a project launched at THATCamp Florence in 2011[12] for creating a European Association of DH: a "new common space for nurturing and practicing this discipline from a genuine multi-cultural and multi-lingual perspective", as can be read on the website.
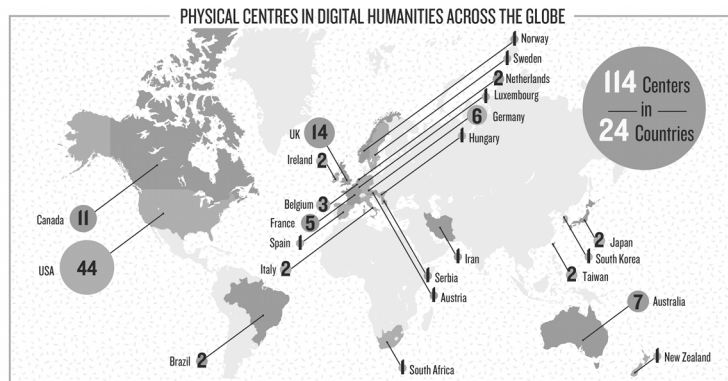

Figure 2. M. Terras' DH Graph[13]

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[11] A quick look at the upcoming THATCamps shows that out of 35 THATCamps listed on the website 24 will take place in USA.

[12] See the relative Manifesto proposed in Paris: http://tcp.hypotheses.org/411. A group of scholars who signed the Manifesto has recently launched a survey for trying to map out the geographical composition and linguistic diversity of the field: https://docs.google.com/spreadsheet/viewform?pli=1&formkey=dG9vVGJTeERuOUtCdV FRRVZQQWp6Nmc6MQ#gid=0.

[13] The complete graph is available on line: http://www.ucl.ac.uk/infostudies/melissa-terras/DigitalHumanitiesInfographic.pdf.

In this perspective, I could go on with further considerations regarding the cultural and epistemic bias implied in the markup languages as well as in the solutions proposed by TEI.[14] However, in the next paragraph I would rather focus on relaunching the fundamental question of the importance, especially in the humanities and social sciences, of the *residual categories.*

> Any attempt to create an obligatory system of classification, rigid and universal, will result in residual categories … It is necessary to root the awareness of what happens every time one tries to standardize. In other words, that in this creation there is someone who wins and someone who loses. This not a simple question, nor a matter easy to analyze. (Bowker and Leigh Star 2006, 13)

The problem of the crisis (which is also one of self-esteem) in the humanities[15] could be summarized as the constitutive necessity to continue to exist, to be always on the margins, to be a hybrid, a variant of the system. And it is here that the first obstacle arises: the potential friction between the role of DH and that of the humanities, because it is clear that a revival or at least a revitalization, which is not a simple defense of what already exists, can't be realized without a critique of the economical and geopolitical interests that lie beyond the universe of the Net and its applications. It appears that the digital humanities are the victims of a continuous paradox: demonstrating their ability to keep up with technologies (and with their actual and virtual protagonists) and, at the same time, not to become subject to them.

4. Standards and Cultural Hegemonies
According to G. Bowker and S. Leight Star "classifications and standards are material, as well as symbolic", and their control "is a central, often underanalyzed feature of economic life" (Bowker and Leigh Star 1999, 15; 39). In their studies the two sociologists show how the classification techniques (and the standards generated from them) have always played a fundamental economic and socio-cultural role. Current digital technologies standards appear to be the result of a double bias: the technical one and the cultural one (geopolitical). These two biases are entangled and it is almost impossible to discern where the technological choice begins and where the cultural prejudice ends.

As the lexicographer and blogger José Antonio Millán noticed more than ten years ago: "while networks are the highways of digital goods and service flows, technologies linked to the user's language are their compulsory tolls" (Millán 2001, 140). Thus, at the roots of economic, social and political primacy we do not find "just" technology, but rather the mix of copyrighted algorithms

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[14] To deepen this issue, see Schmidt 2010; Fiormonte and Schmidt 2011; Fiormonte et al. 2010.

[15] The link between the crisis of the Humanities and the role of the DH is the central theme of the *advocacy* initiative carried out by a group of universities, associations as well as British, American, Canadian and Australian research center: http://humanistica.ualberta.ca.

and protocols that manipulate and control languages. In this perspective, standards are the results of a balance of powers.[16] Presiding over linguistic technologies has thus become both a profitable business and a geopolitical matter. As Millán states, for many countries, not investing in this sector presently means being forced to pay to be able to use one's own language.

"Localization still matters," and the researchers of the Language Observatory Project (http://www.language-observatory.org/) noted that although Unicode is recognized as a step forward for multilingualism, "many problems in language processing remain":

> The Mongolian language, for example, is written either in Cyrillic script or in its own historical and traditional script, for which at least eight different codes and fonts have been identified. No standardisation of typed fonts exists, causing inconsistency, even textual mistranslation, from one computer to another. As a result, some Mongolian web pages are made up of image files, which take much longer to load. Indian web pages face the same challenge. On Indian newspaper sites proprietary fonts for Hindi scripts are often used and some sites provide their news with image files. These technological limitations prevent information from being interchangeable, and lead to a digital language divide. (Yoshiki and Kodama 2012, 122-123)

The Italian linguist and anthropologist Antonio Perri has offered convincing examples of the cultural bias of the Unicode characters representational system, showing the concrete risks of oversimplifying and drying up of the "phenomenological richness of human writing practices" (Perri 2009, 747). Perri analyzed a number of encoding solutions proposed by the Unicode consortium for different problems related to Indian sub-continental scripts, to Chinese, Arabic and Hangul (Korean writing). In all these cases, in addition to being excessively dependent on visualization software, which raises problems of portability, he showed that the Unicode solutions were based on a "hypertypographic" concept of writing, i.e. western writing embodied in its print form and logical sequencing. By neglecting the visual features of many writing systems this view overlooks their important functional aspects. Perri gives a striking example of this bias when discussing Unicode treatment of ligatures and the position of vowel characters in the Devanagari Indic script. Often in Indian systems aspects of a graphic nature prevail over the reading order of the graphemes. As showed in Figure 3, in the second glyph the order pronunciation/graphic sequence is reversed. Unicode experts, however, argue that Indic scripts are represented in its system according to a "logical scheme" that ignores "typographic" details. Perri concludes:

> But why on earth should the order of characters corresponding to the phonetic segment be considered logical by an Indian literate? Who says that the linearity of Saussure's alphabetic signifier should play a role in his writing practices? … It is therefore all too evident that the alphabetic filter, the rendering software and the automatic process of normalization of Indic scripts are the result of a choice that reflects the need for structural uniformity as

opposed to the *emic* cultural practices of the real user (Perri 2009, 736; our translation).
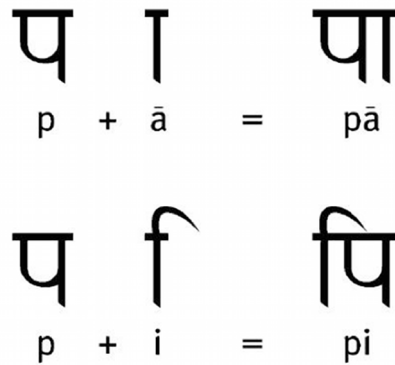
पा Ⅰ पा
p + ā = pā

पा f पि
p + i = pi

Fig. 2 - Fonte: Lussu, *La forma del linguaggio*, cit., p. 41.

Figure 3. Two graphemes of Devanagari Indic script as shown in Perri 2009, 735.

Unfortunately, the problem of cultural primacy overflows linguistic boundaries. The pervasiveness of cultural representations and metaphors belonging to the Anglo-American context in all technological appliances and computing tools is a well-known tendency since at least the 1960s. Many familiar elements borrowed from everyday US life were exported to the computer world. We are not speaking here of programming languages or algorithms, where the deep semiotic bias is intrinsically evident (Andersen 1997), but of the "superficial" (and not less subtle) world of icons and graphic user interfaces (GUIs). One example is the manila folder, an ubiquitous object used in all American offices that owes its name to a fiber (manila hemp) commonly used in the Philippines for making ropes, paper products and coarse fabrics. An object coming from a removed colonial past suddenly, thanks to the Xerox Star desktop,[17] became later the metaphor for any computing content: a symbol that conceals the bureaucratic origins of the desktop computer and its unique ties to the cultural imagination of the average US customer. Examples of symbolic cyber-colonization are Second Life facial expressions and user-playable animations, where we find body language gestures that can be only deciphered by expert American native speakers.[18] Take, for example, the famous "kiss my butt" animation (see Figure 4), where both the verbal expression and the body posture would suggest (at best) deceptive or vaguely alluring meanings to most of Latino or Mediterranean cultures.

[17] "By far its most striking feature was its graphical user interface, ... The arrangement of folders and icons built around what the Star engineers called the 'desktop metaphor' is so familiar today that it seems to have been part of computing forever." (Hilzik 1999, 364).
[18] A complete list of such animations can be found in: http://wiki.secondlife.com/wiki/Internal_Animations#User-playable_animations.

Figure 4. The "kiss my butt" gesture in Second Life

5. Language Differences and Global Inequalities

Our last example isn't a real example, but a comparative experiment based on two graphic representations. The first image (Figure 5) is a map of world income inequalities from the University of California Atlas of Global Inequality database. The second world map (Figure 6), is a Wikipedia image based on Ethnologue.com sources, representing linguistic diversity in the world: in dark grey (red in the original map) are shown the 8 megadiverse countries that together represent more than 50% of the world's languages, and in lighter grey (blue in the original), areas of great diversity.
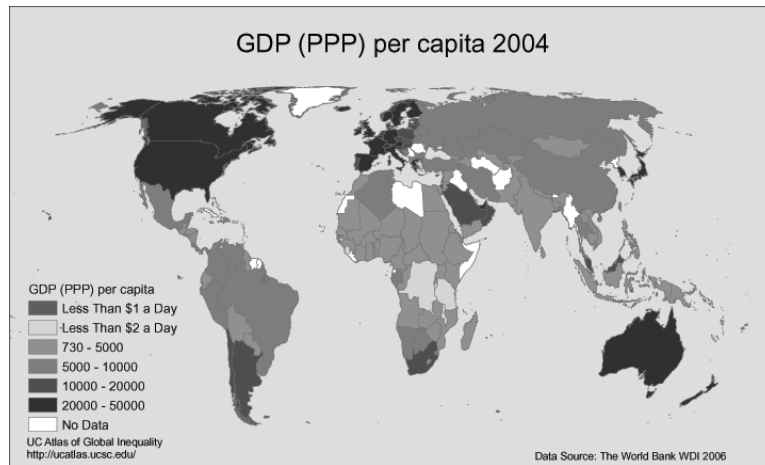
Figure 5. World Gross Domestic Product in 2004. Source: http://ucatlas.ucsc.edu/
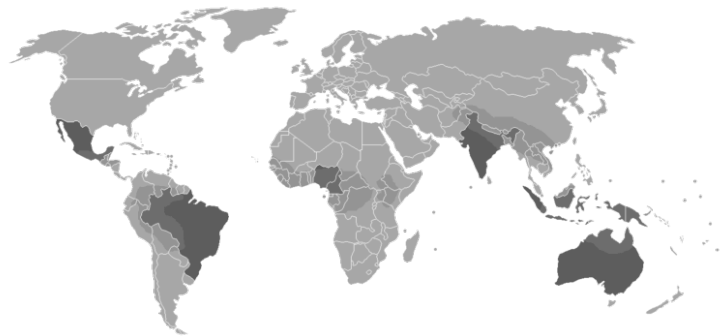

Figure 6. Linguistic diversity in the world. Source:
http://en.wikipedia.org/wiki/Linguistic_diversity#Linguistic_diversity

    If we overlap these two maps, we can notice that – excluding Australia, where linguistic diversity is due to the enormous number of immigrants from all continents[19] – the lower income countries of the first map in many cases fit the areas of greater linguistic diversity. In other words: cultural richness does not necessarily match material wealth.

    The comparison between the two maps we have proposed does not seek to suggest superficial and easy conclusions; however, it is legitimate to believe that in

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[19] According to the Australian Bureau of Statistics, the European invasion during the XIX and XX centuries eradicated both languages and cultures from the aboriginal populations: "Today, there are approximately 22 million Australians, speaking almost 400 languages, including Indigenous languages". (http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/1301.0Feature%20Arti cle32009%E2%80%9310?opendocument&tabname=Summary&prodno=1301.0 &issue=2009%9610&num=&view=)

some of the poorest areas of the world, in deserts, jungles, and mountains at the margins of our globalized society, a handful of communities continue to cultivate the last resource still entirely in their own hands: language.

Finally, it is not surprising, that the world income map perfectly overlaps also with the "Quantifying Digital Humanities" one produced by the UCL Centre for Digital Humanities.[20] This seems to confirm Millán's hypothesis on the strict relation between economic hegemony, technological concentration and linguistic impoverishment, raising the un-approached question of the internal and external *digital humanities divide* in Western Countries.

6. Beyond the Alphabetic Machine?

What is the role and the position of DH in the geopolitical scenery presented so far? Notwithstanding the unquestionable expansion of the discipline (Gold 2012), I have the impression that DH have not taken cognizance of what is happening in the world – yet. Maybe this has to do with the inevitable repression of a too bitter truth, that is to say, that so far the digital humanities haven't succeeded in either strengthening the field of humanities nor putting some balance into the power relationships between humanities and computer science.

If, on one hand, the perspective of the "formal methods"[21] didn't manage to establish an equal dialogue between humanities and computer science, on the other hand it made computer science too shortsighted and even hostile to the so-called digital cultures, relegating the latter to a mere "sociological" question. As already pointed out by the ACO*HUM[22] (De Smedt et al. 1999) research in the nineties, a computer is a "universal machine" and the application of formal methods is the lowest common denominator of DH. However, all form of oral or written discourses are not reducible or ascribable to a logical structure (the "model", cf. Buzzetti 2002), but reflect and imply a dynamic interaction between producers, codes, material supports, and audiences. The meaning doesn't simply emerge from the two processes of analysis and modeling but from cooperation (Halliday 1977). In other words, a discourse is a cultural artifact made of syntax, semantics and, above all, pragmatics, and that is why all the data of human culture are so hard to formalize.

On the other hand, the dependence between the machine and the alphabet goes beyond the mere difficulty or impossibility to be independent from the print model. In fact, such dependence seems to be inscribed in the very DNA of the machine:

> So I would like to readdress the fact that the roots of this machine are very old and can be found in the alphabet. First of all, 5,000-6,000 years ago, the alphabet was, for different reasons, an invention comparable to the computer-mediated discretization of knowledge we have now performed. Think of the originality of these first social groups from Mesopotamia who fractioned the linguistic flux, a continuous spoken song, marking certain pitches as the first

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[21] For a discussion on the formalization of humanities disciplines cf. Van Zundert et al. 2012.
[22] The website is still active and available on online: http://www.hd.uib.no.

consonants (C. Herrenschmidt et al. 1996). It was the onset of development and a culture which were quite different to those inherent in the hieroglyphic writing of ideograms which proposed concepts or evoked whole images, situations, or feelings, by means of drawings. Conversely, the alphabet discretizes, subdivides continuous language into insignificant atoms, into the bits which are letters. (Longo 2009, 58-58). [23]

However, as Longo reminds us, the present computational dimension is not the manifest destiny of humankind. Humanists can join other pioneering scientists around the globe who are starting to think "of the next machine: history is not over, with digital computability" (Longo 2009, 60). In conclusion, the implicit flattening of the technological, commercial and industrial policies as well as the essentially mono-cultural origins of the logical and symbolical representations are obstacles to the expansion of DH beyond the simply instrumental function. I agree with Alan Liu (2012) who says that in order to extend their range of action and be legitimated as an actual discipline, DH need to infect other close disciplines[24] such as social sciences (from the Science and Technology Studies to Mediology[25]) and cultural anthropology (especially the variant dealing with the cultural artifacts from André Leroi-Gourhan to Jack Goody, from the ethnography of James Clifford and George E. Marcus to the *digital ethnography* of Michael Wesch[26]).

But perhaps the most urgent issue is to stop regarding the methodological and the socio-cultural questions as separate. In other words, to stop thinking, paraphrasing Harold Innis, that the digital humanities were born in a *vacuum*:

> Innis happily accepted as a starting point the inevitably ethnocentric bias of social science. … He recognized that scholarship was not produced in a historical and cultural vacuum but reflected the hopes, aspirations, and heresies of national cultures. American and British scholarship was based, he thought, on a conceit: it pretended to discover Universal Truth, to proclaim Universal Laws, and to describe a Universal Man. Upon inspection it appeared, however, that its Universal Man resembled a type found around Cambridge, Massachusetts, or Cambridge, England: its Universal Laws resembled those felt to be useful by Congress and Parliament; and its Universal Truth bore English and American accents. Imperial powers, so it seems, seek to create not only economic and political clients but intellectual clients as well. (Carey 1992, 149).

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[23] It is important to notice that the author of this *J'accuse* is a computer scientist and mathematician currently engaged into biology researching. A specular historical-technical support to Longo's thesis is to be found in the studies on the numerical origins of the cuneiform writing (see also Denise Schmandt-Besserat 1996).

[24] I pointed out a list of possible intersections in Numerico et al. 2010, 102-103.

[25] Loan from the French *médiologie* (http://www.mediologie.org/), this term spread also in Italy (http://www.mediologia.com/). According to Régis Debray, mediology "deals with the analysis of the 'superior social funcion' (religion, ideology, art, politics) in their relationships with the transmission means and environments" (Debray 1999).

[26] http://mediatedcultures.net.

So, are we digital humanist intellectual clients, dinosaurs or "the next big thing"?[27] Personally, I would rather prefer not to choose among these options. Instead, I would like to think of DH as a cultural *and* political project. We could start with three basic steps: a) stop being obsessed with large-scale digitization projects and "archiving fever" (Derrida 1996), which will only increase our dependency on private industry standards, products and, of course, funding; b) *improve and cultivate the margins*, i.e. give more attention our variegated cultural and linguistic local diversity; c) help to elaborate a new concept of *knowledge as commons*. As for c), Hess and Ostrom (2011) provide a set of design principles for common-pool resource institutions:

- Clearly defined boundaries should be in place.
- Rules in use are well matched to local needs and conditions.
- Individuals affected by these rules can participate in modifying the rules.
- The right of community members to devise their own rules is respected by external authorities.
- A system for self-monitoring member's behavior has been established.
- A graduated system of sanctions is available.
- Community members have access to low-cost conflict resolution mechanisms.
- Nested enterprises – that is, appropriation, provision, monitoring, and sanctioning, conflict resolution, and other governance activities – are organized in a nested structure with multiple layers of activities. (Hess and Ostrom 2011, 7)

If the DH community would start to discuss the possibility of applying some of these design principles to its own organizations, a completely new way of thinking and researching would emerge – more respectful of our mutual cultures, more democratic, and more powerful.

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[27] This expression, referred to DH, became immediately famous after W. Pannapacker used it to describe the 2009 MLA Convention: http://chronicle.com/blogPost/The-MLAthe-Digital/19468/.

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