


HCI Within Cross-Cultural Discourses of Globally Situated Rhetorical and Etymological Interactions

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Abstract. About forty years of thriving Human-Computer Interaction (HCI) have expanded into an affluent and apparent diverse and enriching field-for-all. Subsequently this has given way to other fields such as Human-Work Interaction Design (HWID), where a main focus stands on human-centred practices at work regarding productivity and the final fulfilment of humanly aims and goals. This is in stark contrast with other ways of accepting the world, thus of work. HCI for Development (HCI4D) often shows interdependences proposed in the Global North often fail in settings like in the East or also in the Global South. This is while technology permeates at rapid and unstoppable paces everywhere. If HCI4D thus-far shows scant positive results, traditional HWID is seemingly stagnated into modes of production having little to do with promoting actual satisfaction, nor environmental sustainability, to mention a few further options. As younger, novice participants enter academic and practitioner HCI grounds, concepts, definitions and terminology resemble confusion at times, while in occasions these appear to depict archaic modes of distribution, self-empowerment and development as inevitable in today's technologically connected world. Questioning thus existing globalised status-quos related to concepts, definitions and deployments sparks into proposing fairer, more sustainable and micro-cultural approaches to life via and by HCI. To achieve the above, the disentanglement of established meanings through the dissemination of objects, concepts and HCI definitions and terminologies is proposed by applying a theoretical and a pragmatic analysis. This is done with the aim of shedding clarity via reflection and comprehension into mindfulness of ethical and integral possibilities.

This paper presents, proposes and discusses an approach to concepts and words in everyday life such as work, interaction and development, as seen from a myriad of cultural perspectives, cases and understandings. The ultimate objective is to keep discerning past, present and future meanings in HCI, and the connotations of such commonly used terms and expressions.

Keywords: HCI · Rhetoric · Etymology · HWID · HCI4D · Cultural Usability · UX · Participatory Design · Personas · Micro-Cultures

1 Introduction

About forty years now have got HCI thriving and expanding into an apparent diverse and enriching field-for-all. It is well known computers back then got initially disposed to facilitate efficient and effective ways, though more recently they aim to evolve into striving for a satisfactory usage. Subsequently this also gave way to several subfields such as HWID, where the main focus stands on the integration of work analysis and interaction design methods for pervasive and smart workplaces, and where the intended aim is in promoting human-centred practices in work places in regards to productivity to fulfil humanly aims and objectives. With the breakthrough of cross-cultural HCI, smart work places and philosophies from the Global North have recently trespassed frontiers. This is so, for example, with HCI4D as a form of crossing and cutting into cultural milieus whereby technology permeates at a rapid, ubiquitous, and unstoppable pace. Such speed of this evolution, though, is all problematic to firmly catching-up with by academic and practitioner spheres alike. This is while, often, agendas and interests from some ‘other’ parties prevail. As a result of a lack in epistemological adaptation HCI4D so-far shows scant positive results (Blake et al. 2014), whereas traditional HWID can be somewhat seen as stagnated into modes of production having little to do with promoting actual satisfaction, nor gratification beyond the financial means, nor environmental sustainability to mention but few aims. It is then that HCI, from its Global North lieu of inception, seemingly keeps promising endless technological supplies and innovations based on a swaying capitalistic system of depleting resources. This is a system where many, at best, undergo competition issues even if not desiring to contend at all. As younger novice participants permeate HCI academic and practitioner grounds, contexts, concepts, definitions, and terminology often resemble confusion at times, while in occasions they appear to depict archaic modes of distribution, self-empowerment and development as inevitable in today’s connected world. Some of such apprentices, thus, question the existing globalised status-quo of concepts, definitions and deployments, while they propose a fairer, more sustainable and micro-cultural approach to life through HCI (Löfstrom 2010). A way to strive towards achieving the above objectives is by means of disentangling established terms and meanings through the dissemination of the significance of objects, concepts and HCI definitions, and terminologies, by applying a pragmatic analysis that scaffolds from the theory. Another way is by looking at synonyms and antonyms so as to shed clarity via exemplification, reflection, open-mindedness and an ultimate mutual comprehension. Thus, a study of the evolving of words and meanings is hereby proposed into mindfulness, ethicality and integrity among other possibilities for, and toward a better HCI-for-all.

This paper hence introduces first, proposes later, and eventually, if constructively, criticises and discusses a rhetorical and etymological approach to concepts and terms of everyday life such as work, interaction and development as seen from a myriad of cultural perspectives and understandings. This is then contextualised and intertwined into HWID and HCI4D, together with concepts of HCI such as Usability and UX, as well as with some of the methods, tools and techniques utilised in the field of HCI such personas. The objective is to keep discerning past, present and future meanings, and the connotations of such commonly used terms and expressions. This is done by means of

exemplification of different signifiers and signifies of the terms aforementioned, and the questions these provoke when seen from a kaleidoscopic viewpoint within, but also beyond the understanding in the Global North. The ultimate aim is to establish HCI advancements and to propose HCI in-the-making via reflecting the use of terms and communicational tools and their meanings across cultures.

2 A ‘Bit’ of HCI History: The Proposal of a 4th ‘Gratifying’ Wave

The need to continuously reflect upon the history of HCI has to do with rapid changes on the field’s focus, together with its very recent emergence. Understanding reasons for different outcomes, we can then assess today’s visions more realistically, and tomorrow’s views, perhaps, more lucidly and sympathetically with us and others.

After the initial HCI wave of technical rationality, Grudin (2005) began to focus on the cultural barriers that still today separate HCI and IS: HCI discovered the limitations of laboratory studies and surveys to understand discretionary use of methods and the focus of IS in research as based on the economic, organizational, and marketing theory and practice of today.

The third wave of HCI claimed to expand from the working and computer-based context into a broader environment of the mobile and the home, the everyday lives and also into culture (Bødker 2006). This then meant to break the boundaries between work and leisure, arts and the home. In other words, between rationality and emotion.

Grudin (2012) goes on arguing HCI as a field amalgamating disciplines: human factors, information systems, computer science, and library and information science. He concludes that HCI, wherever studied, it will be in its early days of research. Reasons to such a statement are changes on influences: new waves of hardware enable diverse ways to support same activities; email changed the way we communicate; social networking came along; the desktop computer has lost the spotlight to portable devices; government and industry invest on parallel computing; different patterns of technology use emerge in different cultures and in different industries; accessibility and sustainability are development areas; digital technologies changed people’s behaviors.

In their part, Sanders and Stappers (2014) argue the way design is done, and who is responsible it, have evolved based on a move from the designing of things to interactions to systems, and from designing for laypeople to designing with and by people.

As such, recent issues about the disciplinary of HCI have been debated because of the prevalence and resistance of ‘the old modes’. Scaffolding from CHI publications over the past 20 years, Kostakos (2015) shows HCI seemed to follow technical fashions rather than long-term research themes, and argues HCI does not seem to have a solid intellectual or methodological core. Reeves (2015) then recommends thinking of HCI not as a discipline, but rather as an inter-discipline. This Rogers and Blackwell (2012) agree upon, while they go deeply on the discussion stating there is a hole at the center of HCI research. To explain this hole they focus on two case studies: one as a systematic analysis of 180 collaborative projects on research in interdisciplinary design toward understanding the insights into human behavior; a second case study comes as a survey of interdisciplinary innovation. These studies allowed to reflecting on the use of theories

and methods on other disciplines to do HCI work. Pan et al. (2012) are equally concerned about HCI becoming a fashion-driven discipline. They propose to examine and explore what might happen if HCI becomes a fashion-driven discipline.

Finally Rogers and Blackwell (2012) problematize whether HCI is a discipline or not. It might not be, as Kim (1990) already advised, due to the need of interdisciplinary cooperation, as HCI is not discipline but an interdisciplinary field, thus a generality.

A contemplation of a fourth wave in HCI may well hence come-by and emerge from, for example, problematizing methods, tools and techniques that do not make it into the proceedings of big conferences such as CHI (Cockton 2013); also by propositioning to solidly moving from User-Centered Design (UCD) philosophies of professional designer and top management self-empowerment into a more Participatory Design (PD) involvement of laypeople (Sanders 2002) in the construction of sustainable and gratifying futures. It must not though be forgotten that wide participation is not it all, and that innovation at times comes making a worthy breakthrough (Cockton 2013).

What seems clear to many more by the day is that there must be a liaison and a humanly attuning in the adoption of human values towards a gratifying UX (Harper et al. 2008), as well as a carefully drafted agenda toward an HCI research and practice based on human needs and social responsibility (Muller et al. 1997).

As technology strives to connect with the human body and soul, we must now think about the world as a small portion of the Universe, thus act with responsibility in developing life and the human race with a set of values, ethics, and integrity that are coherent with Gaia and all things in the world being interconnected (Laurel 2011).

3 Communication in HCI: Is It Issued or We Make It Ourselves?

Since as humans we are societal beings, communication is paramount ground for society formation, information, comprehension, and at times for transgression too. Communication though is greatest yet challenge in HCI in that, at its core, HCI strives to find out how to overcome a fundamental design challenge: how to draw on user-data to effectively communicate relevant needs, requirements and aspirations to the design of technologies (Grudin 2003). Cultural Usability emphasizes this challenge outside the Global North, while it argues western prevailing methods as ill-suited beyond their realm (Winschiers-Theophilus 2009). Thus if living in an interconnected world, methodologies, methods, tools and techniques need of a further analysis and potential adaptation, perhaps also a greater redesign when deployed “out there”.

Drawing on the HWID’15 pre-conference meeting held at the British Computer Society (BCS) in London UK, a discussion took place about what the word work means. Themes and proposals emerged as: aging users, independent lives and work modes, happiness by purpose, long-term usage together with interest/change of technology, boredom because of automatizing, current and new technologies, redundancy, smart university/analytics and visualization, UX in factory, create work, phases in life, co-creation, experience based products and value assessment, and the word work per-se.

While such conceptualizations are open to interpretation, we tackle them in the section below by analyzing the origin and evolution of terms such as work, interaction

and development, and in the ensuing section we then propose some empirical understandings across projects and cultural milieus as well.

4 An Approach to Signifiers and Signified Across Cultures

This section introduces and analyses terms as follows: work, development and interaction. This is in order to offer some understandings across cultures and settings, and to find out what sustainability, social change and empowerment are or can be.

4.1 Work

In his seminal work “Keywords: A Vocabulary of Culture and Society” Williams (1983) analyzed the historical evolution of many major terms for culture and society. Not surprisingly most of these expressions are still very common, while their meaning continuously evolves through cultures and along societal changes and agendas.

The sense of the word *Work*, in particular, is described by Williams as changed from “*activity and effort or achievement*” to “*steady or timed work*” (Williams 1983, p. 103) underlining its peculiarity of imposed condition. This leads to the consideration of Work as an activity performed for a wage or a salary, therefore strictly related to being hired.

The word *Career*, in contrast, is described as focusing on the relationship the concept has with a person’s progress in life, without only being the Work activity (ibid, 1983). Given his political inclinations, Williams’ opinions about pursuing a career are very strong, especially when efforts to reaching promotion are compared with a *rat race*.

A further publication very critical on today’s economic scenario and that criticizes how work is considered in a capitalistic society is “The Corrosion of the Character” (Sennett 2000). Here people are specifically described as individuals now used to concepts like flexibility, teamwork, layering, and ever-changing working conditions being presented as new opportunities for self-fulfillment. For Sennett, however, these are to be seen as new forms of oppression leading to damages in workers’ well-being.

The cause on the above might be found, among others, in the depletion of world natural resources, as much as in the long working hours for many which, paradoxically, contrast with the large amount of poverty and unemployment in many sites worldwide. In Knopf (2014), the need of adopting new technologies for implementing renewable energies, and sectorial strategies in the electricity and transport sector is considered mandatory to keep the 2-degree limit in our future.

Some of the HCI research community is hence being attentive about environmental sustainability. An example of research work comes from Dourish (2010), who focuses on discussing the use of ICTs to promote and support environmental sustainability and ecological awareness in the technology user. This shakes and pushes the idea of a new way of being HCI designers and developers, and to improve consciousness about the impact and consequences of the use of technology and IT in general in the World.

4.2 Development

Development as a term originates in the Global North, though it was initially contextualized as a word of technological possibilities (Williams 1983) rather than for diminishing and disempowering (Escobar 1995). Synonyms such as unfold and unroll (Williams 1983, p. 103), though, entice to think of the possibility of recounting from the myriad of perspectives and viewpoints that the world provides nowadays.

Then, antonyms of such a term are *undeveloped* or *underdeveloped*, which, *through these verbal tangles, an often generous idea of ‘aid to the developing countries’ is confused with wholly ungenerous practices of cancellation of the identities of others, by their definition as underdeveloped or less developed, and of imposed processes of development for a world market controlled by others* (ibid, p. 104).

Development as expressed in an old/new meaning scaffolds precisely from the contrary to what Williams (1983) presents above. Development thus has to do with the development of all people’s educational intellect to allow, encourage and empower this type of growth, rather than the one of suppression as understood by mechanisms of suppression and agendas of colonial interest.

Development, then, as a term applied to HCI4D, must be analytically reassessed. This is because it otherwise (1) symbolizes a constructed set of meanings, whereby dependency is the norm from historical agendas that encourage systematic workings and variations serving imperialistic plans and schemas; and (2) a sense of underdeveloped societies in relation to the developed economies (ibid, 1983, p. 103).

Development as evolutionary acquires sense if/when localities are taken into account as per specific sets characteristics shaping livelihoods in particular geographical milieus, and in a way that, when *Nations proceed in a course of Development, their later manifestations being potentially present in the earlier elements* (ibid, p. 103).

4.3 Interaction

Etymologically, interaction refers to a mutual or reciprocal action, e.g. communication among people, or actions of people that affects others. The study, thus, of rhetoric advanced from being focused exclusively on discourse, in Ancient Greece, to the inclusion of interactive audiovisual elements in the 20th century.

Nowadays, a ubiquitous digital world releases a new field of research, which might be called “rhetoric of interaction”. Rhetorical possibilities can be analyzed in interactive design by some of the aspects in traditional rhetoric studies: ethos, logos and pathos, while a rhetorical approach to design can provide methods and principles to understand people’s culture and context.

Care must though be taken, as looking to synonyms and antonyms of interaction one finds communication, contact, collaboration, as much as apathy, triviality or lethargy.

In our analysis and proposal interaction is then expressed as an old/new meaning based on the origins of human-to-human interaction with participatory values of integrity and ethicality based on respect and fraternity.

Sennett (2000) argues the personal consequences of work in the New Economy have led to disorientation of the individual because of the use of concepts like *flexibility*,

decentralization and control, flexitime, change and long-term commitment, as well as *work ethics and teamwork*. People, Sennet argues, have to cope with new concepts of *flexibility, flexitime, teamwork, de-layering and ever-changing working conditions* that superficially present new opportunities of self- fulfillment to workers, but that in reality they create new forms of subjugation, confusing individuals and deteriorating their emotional and psychological well-being. Ultimately, the solution proposed by Sennett is to do with the necessity of people to rely on communities to build-up their own identities.

Scaffolding from the above, several aspects of HCI research such as UX, aesthetics and design thinking are then more problematic to research in a traditionally scientific way. Pan (2012) argues that fashion in relation to interaction design has a place in HCI, as it becomes an influence on the decisions and judgments made by HCI practitioners and researchers. Other authors subscribe this approach in that fashion affects interaction designers' design thinking in relation to functionality, appearance, UX and visual experience.

5 Exemplifying HWID Together with HCI4D

Portraying diverse ways of doing this section exemplifies work on HWID together with HCI4D to convey the above terms via pragmatic examples from literature.

5.1 Work

Irani and Silberman (2013) designed and developed Turkopticon as a system that allows workers to publicize and evaluate their relationship with their employers. This work is considered as activism as it stems from a strong critique to the invisibility of workers in the human computation domain, as represented by the popular Amazon Mechanical Turk system. Workers have been provided for two years with an anonymized integrated system allowing them to rate their experience with the employers.

Unfortunately such a worker-oriented perspective is not as common. Exceptions are mostly related to activist groups or non-profit organizations. For example, WWF published "Common Cause: The Case for Working with our Cultural Values" (Crompton 2010) to promote an ethical approach defining causes "bigger-than-self".

In these regards, there is still a rather amount of work to be done in unmasking powers and forces of oppression that neither allow for full values, nor for a sustainable and integral way of working in an ethical, integral and constructive manner.

5.2 Development

Promising and uplifting examples of ways forward in development are found in places that, due to the utter scarcity of resources, enable leeway and flexibility in creating and molding from quasi-blank canvases. An instance of this comes from informal settlements like Havana in Katutura, in the outskirts of Windhoek, Namibia. In such an underdeveloped and uncared for locality, there are major defies such as a paucity of

basic living facilities typical of slums. These correspond to inadequate housing, and a lack of electrical reach, access to potable water, and hygiene resources like proper showers to serve sanitation. Besides, wastelands surrounding inhabitants' shanties, abusive drunkenness, and a great lack of education are the daily encounters for the inhabitants in such local (Cabrero et al. 2015).

To improve the above, and to allow scope to generate bottom-up possibilities straight from the ground, a project that combines partakers such as a university and some of its students, designers, researchers, facilitators, ONGs, political bodies such as embassies to foreign countries, and the local councilors is developing educational efforts specifically to do with the development of the community's intellect to allow, encourage and empower a sustainable, culturally-aware type of growth by means of skill provision and training, as well as of a community center (Winschiers-Theophilus et al. 2015a; b).

In such environments, besides, HCI forms an important part in that, by means of User-Created Personas (Cabrero et al. 2015), regular youth in Havana gain advantage in creating representations of themselves via person-like representatives that convey their needs, requirements and ambitions towards the design of logistics and, in particular, of technologies that aim to ameliorating their situations and progression in life.

6 World Machines: Providing Definitions to Sharing Economies

Nowadays, given the complexity of many design problems, the "*participation of more knowledge than any single person possesses*" (Fischer 2005, p. 1) is fundamental for creating a successful project, idea, or artifact. Such a collaborative approach stems from several years of research progresses led to the definition of Reflective Practitioners and Reflective Communities (ibid 2005). The idea beyond these concepts is to support not only collaborative design and development in HCI, but to help all partakers in overcoming the communication distance between different minds, expertise, and points of view. Reflective Communities are based on what is called Shared Understanding that needs to be created ad hoc for specific communities that collaborate and share a common objective.

In the recent years, the need of addressing UCD processes is becoming more common than not. With such paradigm shift from UCD to PD, a natural need comes to form the new generation of "Universal Access Designers" (Keates 2011). For doing this, upcoming and existing generations need be informed on Usability, Accessibility and User Experience as pinpointing the significance in considering the widest possible range of users in a specific workplace or situation.

At the basis of this approach, there is a socio-technical design methodology that considers both the technical aspects and the human factors as a very interrelated matter. The concept of World Machines introduces an archetype and a way to design a group of tools able to combining computational powers with a so-called social agenda for cross-cultural collaboration (Light et al. 2015), which specifically focuses its attention in the connection between Sharing, Environment and Ecological Thinking.

7 Conclusion

This paper has presented rhetorical and etymological approach to concepts and words of everyday life such as work, interaction and development seen from a myriad of cultural perspectives and understandings. In order to continue developing technological means that can satisfy the very final user, a coherent understanding of the peoples' agendas must be bore in mind at all times.

To empower laypeople with HWID and HCI4D methodologies, methods, tools and techniques can enable new ways of making concepts of HCI such as Usability and UX to evolve in diverse and varied ways that make the world to progress under a myriad of viewpoints and perspectives.

This will in turn allow for a richer understanding of the past, the present and the future to come in HCI, while reflecting upon the use of terms and communicational tools, and their respective meanings across cultures.

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