

# SOFT CLOUDING – CURATING A NEW SEMANTICS FOR SOUND ARCHIVING

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This paper will present and discuss the *Soft clouding* project from the perspective of the three practices and competencies brought together in one transdisciplinary process of curating a semantics of sound: Technological, Humanistic / Curatorial, and Design / Action-based.

*Soft Clouding* is a blended concept, which describes the aim of a collaborative and transdisciplinary project. The concept is a metaphor implying a blend of cognitive, embodied interaction and semantic web. Furthermore, it is a metaphor describing our attempt of curating a new semantics of sound archiving.

The *Soft Clouding* Project is part of LARM - a major infrastructure combining research in and access to sound and radio archives in Denmark. In 2012 the LARM infrastructure will consist of more than 1 million hours of radio, combined with metadata who describes the content. The idea is to analyse the concept of 'infrastructure' and 'interface' on a creative play with the fundamentals of LARM (and any sound archive situation combining many kinds and layers of data and sources).

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Everything is tagged...

One of the main obstacles of creating an interface for an infrastructure, which contains a combination of many already rather large archives, is the amount of information involved; the way it is structured and described – on all kinds of levels.

In this regard, it is very near – but not similar – to the concept of 'cloud computing'. ([Leadbeater 2010](#))

Cloud computing is a concept for next generation Internet where data is organized in a different manner, than is the case in the current www setup. The speed and growth of the Internet means we are drifting away from taxonomy and the search-oriented architecture gives us new possibilities in crowd sourcing and collaboration. The innovative idea of Cloud computing is that everything on the future www is 'miscellaneous', yet traceable in tagged contexts ([Weinberger 2008](#))

Emergent technologies like *Echonest* and others, gives us a opportunity to 'trace' sequence and identify 'hidden' content in large amount of sound data. On the other hand, some of the mechanisms of emergence are organizational and collaborative, rather than purely technical.

The next most likely stage of the web's technical development – cloud computing – will act as a giant accelerator for cultural cloud formation. 'It will be like a giant machine for making clouds of culture.' ([Leadbeater 2010](#))

Everything is tagged...

## Cloud Computing & Digital Infrastructure

However, the LARM infrastructure is not yet one cloud of data, but consists of many clouds of data coexisting and overlapping each other. This is partly due to the in/consistency and in/compatibility of the many kinds of material in the different archives. But it is also due to the simple fact that digitalization is not the answer to everything in archives – especially, when the material is as time-based, particle-spatial and fugitive as sound.

Finally, it also appears that the system and epistemology behind the 'non-tagged' world is still very active – and not always easy to persuade to give up the privileges of controlling 'their' cloud of data and information. Thus, there is a kind of power struggle involved in the ability to tag information across all platforms between the 'traditional' modern institutions - like libraries, media companies, and universities. The challenges of cloud culture is not only that of creating possibilities of digital infrastructures in society, that could change that society all together; it is as much a question of convincing and transforming a 'modern' post-industrial system of cultural politics.

As cloud culture comes of age, we need to make scenarios of possible uses of the tagged world. This is our attempt:

Our links to one another, we believe, will be increasingly routed through a vast shared "cloud" of data and software. These clouds, supported by huge server farms all over the world, will allow us to access data from many devices, not just computers; to use programs only when we need them and to share expensive resources such as servers more efficiently. ([Leadbeater 2010](#))

An interface to an infrastructure of sound-archives is dependent on the development of alternative methods and modalities for 'seeing' and 'touching' acoustic temporality and its (natural and cultural) contexts. In other words, we need to 'curate' a new semantics of sound and sound archiving. In this context, to 'curate' receives an extra level: to create and manage a systems design.

## Soft Clouds...

Thus, we conceive soft clouds as the clouds of data, metadata and relations between data and things in the cloud (sound and radio programs i.e.) that you generate in a (research or creative) process.

The cloud is a promising cultural tool. In order for tags in the cloud to become culture, we would argue that we need another level of interface where the human body (the 'soft' level of HCI) is active.

We want to create an interface for that process where you may create and operate with your own 'soft clouds' – either from existing data and material on the platform, or from new material and data (or both).

Soft Clouding is taking networking to a new level (of reality) outside the taxonomies of the Internet.

It is embodiment without the (physical) body. (Ihde 2002) \_

The infrastructure is NOT the Internet, it is not ONE cloud of data either - it is something different. The infrastructure's primary inventive point is the link between body position and information. We are building a system that flows and links between different ways of organising information in a way that parallels the way the mind works and organises in parallel organisational fields (Pinker 1997). It is a bodily sensing of information in loose conversational clusters that can be manipulated in space.

### Innovation through metaphors...

Working in a transdisciplinary team we have asked ourselves the question: In what way can we make tangible representations of the ordering of sound and the information that pertains to it? This is as essential for a single user tool as it is for formulating a frame for the kinds of discussions that take place in a temporal context with more than one user involved.

In the transdisciplinary, innovative discussions we are using metaphors and images that can drive our thinking such as

- "it changes patterns according to what you are thinking about by reorganising the emphasis (metadata) that is connected to the groups of information."
- "It is a tangible time machine"
- "It is a map and a conversation at the same time"
- "It is transparent and yet consistent"

We want to be freed from the constraints of the Desktop paradigm. The Desktop paradigm is such a well-founded method of understanding the ordering of data - once ideas are digitalized, that they fall 'naturally' into our way of thinking. We want to move beyond that and take tagging to another level.

### Grounding a collaborative systems design paradigm

*Soft clouding* is a way to work with embodied, physical space as a framing for reality-based interaction where the relations and i.e. in/consistencies of different material define the interface.

One of the dominating visions in interaction design driving this field – Reality-based Interfaces – is to design for increasing naturalness in the way we interact with computers through drawing upon our skills in the way we manipulate and understand the physical world.

In contrast to this view, our vision is that future use of computers should not just mirror our relation with the physical world, but should rather evoke new kinds of experiences that augment people's perspectives on the world. By basing our vision on this assumption our vision comes closer to the design paradigm known as *aesthetics of interaction* without being equal.

Aesthetics of interaction is an emerging paradigm in interaction design and Human-Computer Interaction that can be divided roughly into three approaches. The *media-centric* approach conceives of digital

aesthetics as the discipline that should make software engineers and designers conscious of how the computer functions as an expressive medium.

The *product-oriented* approach views aesthetic qualities in a more decorative sense as those pertaining to pleasurable or desirable qualities.

The *experience-based* approach to aesthetics sees aesthetic qualities as a resource for creating experiences with technology that not only affect our body, but also - through this affection - spark our imagination or evoke thoughtful interaction and critical reflection ([Krogh, Petersen et al. 2009](#))

We share the assumption with proponents of the experience-based approach that digital technology is a new sensuous material for designers that needs to be explored in its own right rather than being modelled on the idea of a refashioning or re-mediation of old media. Computational artefacts merge physical and digital materiality into new hybrid sensuous qualities and functionalities, which can be exploited in the design of educational settings, cultural institutions, urban space, and so on.

The sound archive is a Hertzian space or electronic geography made up by wavelengths of various kinds. With Soft Clouding we aim at developing a whole new conception of what an archive is and how people may access intangible and fugitive sounds through tangible and haptic experiences. Not in the sense of Tangible Interaction (Ishii & Ulmer) where interaction is reduced to physical controllers for two-hands manipulating digital information, for instance turning and twisting a bottle for playing music files. Rather than physical interaction our aim is to make a sound archive emerge in 3D architectural space. In this sense, it might seem as if we wish to revive Mark Weiser's idea of ubiquitous computing, according to which computer technologies should be integrated into the walls and floors of buildings transforming them into interactive spaces. Yet, in contrast to UbiComp, we do not subscribe to the idea of the invisible computer staying in the background and serving people like a butler whenever there is a need for it. The Soft Clouding project is based on a vision of making the invisible computer a sensible part of people's spatial experience, replacing the computer butler with a computer wizard inviting people to enter a new space for having sound experiences. In this space sounds are able to become tangible felt and sensed through the felt sensations and movements of the body. Now, how is this to be understood?

In the context of ordinary conversation the gestural and bodily underpins verbal communication as an extension/continuation of spoken language. Spatial positioning frames spoken language.

The need to position, make spatial and codify the spoken word through the body is so intense and ingrained that it is even used in telephone conversations where the listener is unable to see the point being made *through* the gestures of the speaker. Nonetheless, through the force of this gestural instinct the speaker is obliged to use it in order to make or emphasize a point. And the more emotionally intense the point being made the stronger is the impulse to move in order to be able to express it.

From the perspective of the Soft Clouding team herein lies the key to how haptic, internalized sensed sensations can meet the external world in a paradigm that is, to a high degree, distinct from the desktop method of organizing information. We fully accept that "desktop thinking" is a powerful and well established default position for storing and organizing discreet units of information but its form, based as it is on a visual representation of physical objects that cannot be easily reproduced or moved does not provide a sufficiently open potential for linking and thinking on your own or with others. We posit that Michael Polanyi's notions of tacit knowledge can provide us with a model for how *Soft Clouding* can be

experienced by focusing on the continuum between the sound space and the body; and the gestural as a way of accessing and organizing this material.

In the preliminary planning for the project, it was discussed how to create a bridge between the desktop paradigm and a vision of a playful open-ended space that is bounded solely by the size of the collection and the uses it is put to through the users. Therefore the primary research within the Soft Clouding project works experientially with how to position sound files in a three dimensional space through binaural sound input that can act with or as further, wider extension of the visual representation of the sound archive.

The average human has a visual field of around 80 degrees around the head facing forward. Of this peripheral vision – the part of vision that deals largely with movement and cannot perceive detail or colour to any great degree – makes up the greater part of the eye's function. Therefore our ability to see space is determined by a largely coordinated but unconscious movement of body and eye. In comparison we are able to hear 360 degrees around the head and place sound with a high degree of precision in relation to ourselves, including events that take place directly behind us. Understanding this fundamental difference makes it possible to establish an experimental space in Soft Clouding to test how the gestural relates to manipulating and playfully organizing ideas alone or with others in a technological body-space. We try to create an environment that is common and accessible to all the users, be they physically or digitally present in it.

The *Soft Clouding* project is working towards a parallel, otherworldly extension of the desktop paradigm in order to provide a new, gestural platform for organizational thinking and sharing. It thinks in terms of contexts and space rather than boxes and files. Although it takes sound archiving as its starting point the medium and long-term goal is to contribute to developing a new semantic about how to access and organize media in an experimental technological body-space that supplements the desktop paradigm.

### Curating a new semantics...

To take this a step further, looking at some of the problems we face from a humanistic HCI-perspective, if Soft Clouding is to be successful the real impact of the new semantics would have to be operational on a cultural level (that is, expectations towards a technological body-space are collectively shared by a large number of people). Cloud computing does not 'just' translate into a systems design or a new paradigm for experiencing data overnight; it is based on a gradual transformation of an entire culture, into that which Leadbeater, perhaps a bit haphazardly, terms a 'cloud culture'.

This means, that for Soft Clouding to have any impact on an individual, personal level from any user we may imagine, this user would have to navigate intuitively with the semantics of a technological body. This, already from the start, makes it difficult to achieve a 3D space that would fulfil that semantics, if the cloud culture were not fully realized on a collective scale. Also, if we have to operate in sound, and with sound, as physical and acoustical elements in space, there would be at least 4 dimensions to navigate in – since time in sound experience and sound production is implicit.

Therefore, we are operating with the term technological body-space. To mark out the distinction from ordinary 3D experiments that we find are limited, especially in terms of the hugely expanded network metaphor of a tagged society; not to speak of the 'radical' idea to bring ALL of the human senses into an archive-interface and systems design.

It is a huge step away from (the idea of) the literary paradigm of archives, but only a small step ahead for a new semantics for sound archiving.

### **References and Notes:**

*Ihde, Don. Bodies in Technology, Electronic Mediations. Minnesota: University of Minnesota Press, 2002.*

*Iversen, O. S. , et.al. "On Emancipation, Quality & Democracy in Design." In Proceedings of NordiCHI 04, 171-80. Tampere, Finland: ACM Press, 2004.*

*Jacob, Robert J. K., et al. "Reality-Based Interaction - a Framework for Post-Wimp Interfaces." CHI08, no. Journal Article (2008).*

*Leadbeater, Charles. Cloud Culture : The Future of Global Cultural Relations. London: British Council, 2010.*

*Pinker, Steven. How the Mind Works. New York ; London: Norton, 1997.*

*Schifferstein, H., and Paul Hekkert. Product Experience. 1st ed. San Diego, CA: Elsevier, 2008.*

*Weinberger, David. Everything Is Miscellaneous the Power of the New Digital Disorder. 1. Holt paperbacks ed. New York, NY: Times books / Henry Holt, 2008.*

LARM Infrastructre: <http://www.larm-archive.org>