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45. Between the Regenerative and the Renewable: Patterns in the Media Beautification of Technology and Science, from Stem Cells to Wind Farms

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Public knowledge of issues related to biotechnology and wind energy is heavily influenced by news coverage, as most citizens have little first-hand knowledge about research related to biotechnology and wind energy. As is well known, both biotechnology and wind energy encounter considerable resistance. The beautification of biotechnology in the media has attracted considerable attention among specialists in Science Communication and Science, Technology, and Society. As a result, we know about the presence of patterns in, for example, the use of the metaphors employed in order to promote a whole range of biotechnologies, from genetically modified organisms to cloning. Several STS scholars have argued that textual and visual mechanisms of media beautification of biotechnology have been developed in response to widespread public concern about biotechnology, which frequently took the form of open resistance to biotechnology. This is also connected to ongoing discussions regarding the risks and ethical issues associated with biotechnology.

We know much less about media strategies that have aimed at the beautification of another defining technology of our era, that of wind farms. Noticeably, wind farms are by now, also, a technology that faces considerable resistance. Wind farm installation has raised great waves of resistance in local communities due to the serious impact it has on the environment, the landscape, the biodiversity and the economic life of communities (e.g. negative impact on prospect of development of tourism).

This is why central to our paper is a comparison between the way stem cells and wind farms have been portrayed in the media. This comparison is based on primary research in several of the most popular Greek e-newspapers and other news blogs and websites.

Between the Regenerative and the Renewable

Stem cell research is a hot topic in the press. It has been constantly in the news for several years: not a week goes by without the announcement of a new and 'amazing' advance. Reporters tell us that we are constantly on the verge of a revolution in medicine due to developments in stem cell technology. The central rhetoric in the beautification of biotechnology in the media is the idea of regenerative: that bio-scientists reorganise life at the genetic level so as that biotechnology will offer enormous possibilities in order to remould life on Earth. GM technology is presented as a green revolution that regenerates agriculture and solves the problems of the poor and world starvation. The GMOs crops are supposed to be durable, more productive and nutritious.

The announcement of the human genome sequence in 2000 by the Human Genome Project was heralded as correcting the "*Book of Life*" so as to rewrite the genetic code without errors.

Stem cells research and technology promise us regenerative therapies which have been demonstrated (in trials or the laboratory) to heal broken bones, bad burns, blindness, deafness, heart damage, nerve damage, Parkinson's disease, and a range of other conditions. Stem cells are presented as self-renewable, totipotent, renewable[1] and reprogrammable. In short, the stem cells are presented as capable of regenerating the human.

Wind energy technology, dominated by a version of it known as 'wind farms' or 'wind parks', is being promoted as aiming at the reduction of CO_2 emissions. As this technology is being developed, great social, economical and enterprise benefits will supposedly emerge. Yet, wind farms are also met with resistance. The central rhetoric in the beautification of wind farms is the idea of renewable energy. The concept promoted is mostly about wind as an everlasting energy source that provides energy without any destruction of resources. Thus wind energy is mostly characterised as renewable and clear. Since this kind of energy is supposed to be renewable (unlike fossil-fuel-burning technology), the aim is to produce large amounts of wind energy A significant part of the wind farm rhetoric assumes that their development will result in new jobs creation and economic growth. Within this context, wind energy is considered to be a more or less magical solution, which could save the planet and at the same time create huge economic growth.

Method and data

As we know, millions of citizens read media news daily. The media beautification of a given technology is mostly based on the construction of certain media frames regarding this technology. The media beautification of technology is also based on the deployment of certain metaphors.[2] Moreover, it is based on the use of certain pictures.[3] In the context of our research, we have examined the media beautification of stem cells and wind farms on the basis of a representative sample of articles from the most popular Greek e-newspapers and other news blogs and websites. The key-words that we were used were "stem cells" and "wind farms".

[1] Cooper Geoffrey M. and Hausman Robert E., *The Cell: A Molecular Approach*, Sinauer Associates Inc. (5th Edition), 2009 | Chapter 17: "Cell Death and Cell Renewal", http://www.sinauer.com/cooper5e/sample/Cooper5e_Ch17.pdf

[2] As Nerlich and Hellsten said the "*metaphors […] play an important role in the communications between science and the wider society. For scientists, working in the life sciences, metaphors may be indispensable tools for popularizing issues, promoting certain views over others and for making specific scientific programmes legitimate. For journalists, metaphors are part of journalistic routines used for the purposes of popularizing, concretizing and dramatizing issues, in brief for making issues both newsworthy and interesting for the relevant audiences*" (Nerlich and Hellsten 2004, p.257). [Nerlich Brigitte, Hellsten Iina, "Genomics: shifts in metaphorical landscape between 2000 and 2003", *New Genetics and Society*, Vol. 23, No. 3, December 2004, p.p.255-268]

[3] The photographs condense the journalistic text in an optical representation. Their choice, the way of reception and their content are selected so that they attract and they cause the interest of readers framing a new technology positive or negative. The photographs via their rhetoric aim often in the sentiment of readers and often make us accept or reject a new technology.

Findings

This study is part of a larger research programme, undertaken at our Department. Regarding our preliminary key findings, we here focus on the following points.

1) The beautification of stem cells research and wind farms in the media take place through the use of three common frames: a) *progress* frame; b) *economic prospect* frame and c) *run-away technology* frame[4]**.**

2) Stem cells are presented as renewable 'sources' and not as 'technology'. A stem cell can produce re-growing of a variety of various lost or destroyed human body parts. The emphasis in the media is placed on their alleged benefits and not on how this will be achieved technically. On the other hand, when the articles refer to economic aspects of the stem cells research the photographs published usually show labs and not stem cells.

3) The rhetoric of the articles is more powerful than the photographs in the case of stem cells. Pictures are used more often in beautifying wind farms than stem cells. In a sense, wind farms and stem cells are the opposite in terms of size. It is common to use settings that contrast a wind turbine to a thermoelectric power generation plant. This is not the case in connection to stem cells.

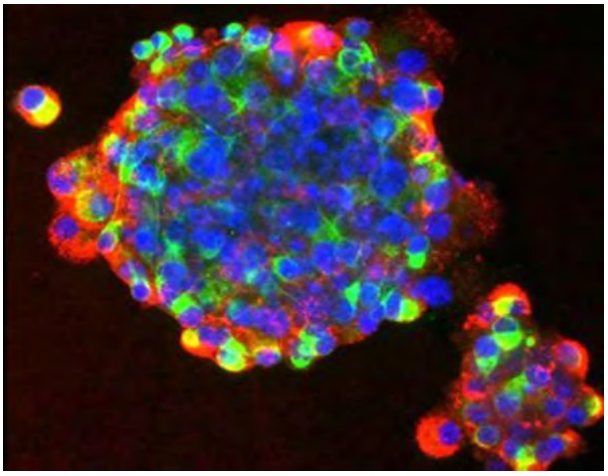

Image 1

(Source: e-newspaper *TO VIMA*, 1/11/2012[5])

[4] This framing typology is adapted from Durant, J., M. Bauer & G. Gaskell (1998.), and Nisbet Matthew C. & Lewenstein Bruce V (2002).

[5] Τσώλη Θεοδώρα, "Αναγέννηση των γηρασμένων κυττάρων. Μια νέα μέθοδος επαναπρογραμματισμού υπόσχεται επανάσταση στην αναγεννητική ιατρική", e-newspaper *TO BHMA* (*TO VIMA*), 1/11/2011.

Image 2

(Source: in.gr, 11/4/2004[6])

4) The photographs of articles depicting stem cells are usually digital constructions or re-constructions of images. The photographs obscure the complex accompanying technological infrastructure that is involved in appropriating stem cells so as to attempt any kind of regeneration. We have noticed something common regarding the abstract presentation of both technologies through the images accompanying articles. In the case of stem cells, we see colourful abstract images of tiny stem cells under investigation (image 1). In the case of wind farms (image 2), we see an abstract environment with one artefact (one wind turbine and not the whole farm, which actually consists of several of them). The base of the turbine is not shown, and usually only the top part is left in the picture. Also, we don't see the unattractive supporting technological infrastructure (e.g. transmission lines and power stations).

5) Very often, the photos of stem cells depict only one stem cell and not a group of stem cells. Presenting a stem cell in isolation disconnects it from its association to a living embryo so as leave aside any ethical resistance against stem cells research.

[6] "Νησί της Σουηδίας αποφασισμένο να έχει καταργήσει το πετρέλαιο έως το 2025", *in.gr*, 11/4/2004.

Image 3

(Source: *Econews,* 16/02/2012[7])

Image 4

(Source: *Econews,* 28/03/2011[8])

6) In the case of wind farms, the beautification through images relies heavily on constructed images. In such images, as mentioned before, we frequently see single wind turbines and not the whole picture of a wind farm (Images 3 and 4). Additionally, very frequently, only the upper part of the artefact is shown and not its base. In this case, it is assumed that there is no interference with the environment and the landscape.

[7] "Ανανεώσιμες Πηγές Ενέργειας: ισπανικό μοντέλο για τις ταρίφες – Φόβοι για μειώσεις", *Econews*, 16/2/2012.
[8] "Ανανεώσιμες πηγές ενέργειας: τίποτα δεν είναι απλό" *Econews*, 28/3/2011.

Image 5

(Source: e-newspaper *Eleftherotypia*, 11/7/2010[9])

7) In wind energy rhetoric the concept of the renewable is promoted mostly through the use of characterisations as clean energy, sustainable and environment friendly (image 5). The part of the rhetoric relevant to economy is realised mostly by the presentation of a picture of a beneficial revolution, which induces great investments and creates many new jobs. It is very interesting that journalists usually use financial (as opposed to technical terms) to describe the size of a new wind farm project.

8) As shown in image 5, wind turbines are shown next to windmills, as if the two are equivalent in regards to size and more generally. In reality, a wind turbine is ten times taller. Moreover, a windmill was built locally, by using traditional material. It was lasting for centuries. By contrast, wind turbines rely on synthetic materials, are reconstructed by very few high tech companies world wide, and have a lifecycle of about 25 years. The pictures in the media are chosen so as to create the impression that a wind farm is as attractive as the traditional windmill.

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[9] Νταϊλιάνα Ντόρα, "Μύλος …με τις ανεμογεννήτριες", e-newspaper *Ελευθεροτυπία* (*Eleftherotypia*), 11/7/2010.

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