

## **Social archive and the role of new media in scientific dissemination: A viewpoint**

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### **Introduction: the role of new media**

Science is of course very far from the art, nonetheless there are some aspects of science which can be compared to art. For instance, there is *elitic art* who prefers that art is for art only. On the other side, there is *pop art*, which relates smoothly to industrialisation. And there is also *avant garde* art, which asserts that all things can be thought of as art (like mirror, glasses, broken windows etc). Similarly, in science some researchers believe that it is the best way to keep the ‘ordinary people’ outside of the traditional scientific communication (for example, arxiv.org declares that it is an exclusive scientific channel for scientists *only*), while on the other side people sometimes also wants to know what happens behind the wall of scientific labs, and so on.

Enter the social media. Various forms of electronic communication and publication have entered in recent years (2005 up to now) which are sometimes are dubbed as ‘*new media*’ [1][2][4]. This includes, for instance, blogging, youtube, facebook, online directory, blog directory etc. Let’s consider a simple example: a decade ago, a new paper in a science journal from a remote country will take some months to be noticed by scientists (in particular via notification by the scientist himself/herself). But today, at the same day the paper appears in electronic journals, there is high likelihood that it will be disseminated simultaneously in numerous forms of new media channels, like google, blogging directories and other indexing services.

The problem is that some scientists feel that a number of scientific works get plenty of publication coverage in this new media, while at the same time an equally ‘worthy’ paper get less publication coverage. In other words, does it mean that nowadays ‘popularity’ in new media has replaced what we called before as ‘scientific value’ of paper? This introduces confusion to already complicated situation of modern society where we listen and read numerous amount of news and information each day, so it is quite make sense that people wants a clarification of ‘scientific worthiness’ of certain news he/she reads.

### **Grade of scientifization**

In order to clarify the situation, we offer a simplified analysis based on the asynchronous/synchronous communication and also ‘grade of scientifization’, which is a new notion. This grade is defined simply to enable us to rank the channel of communication, which are ‘more’ serious and

which are less serious, at least from ‘scientific worthiness’ viewpoint. By ‘synchronous’ here we mean as method of communication which takes effect immediately (like telephone). See Table 1

Table 1. Grade of Scientific Communication

Type/Grade	Grade A	Grade B	Grade C
<b>Asynchronous</b>	Peer-reviewed Journals, Proceedings, Citation index	Scientific Books, Scientific Magazines, Preprint services, indexing	Popular Science books/magazines, online forum, emails, blogs, online directories, video
<b>Synchronous</b>	Scientific Conferences	Lectures, Public Seminars, semi-formal discussion	Yahoo messenger, Google Talk, other new media, informal talk

Implication of Table 1 would mean that perhaps scientific communication can accept or agree with the fast-growing social media to disseminate scientific works, if only we limit its role as ‘Grade C’, i.e. not to regard them as ‘very serious’ scientific channel. Furthermore, perhaps we can introduce a new word here ‘social archive’, in order to reflect both the method of ‘social network’ as the essence of new media, and the scientific archiving. In other words, we can simplify all these new developments as follows:

Social network + new media + online repository/preprint/indexing == Social archive

### How to make Social Archive useful

Scientists improve their work not only by thinking by themselves, but also by receiving comments and suggestions from their peers. Such a method of review has been established in traditional scientific communication, called as ‘peer reviewing’. But there are other forms of ‘input’ that scientists can receive from their ‘outer world’, for instance what indexing system now begin to call as ‘*impact factor*’ (based on ‘Citation’), whatever the bias it may introduce. Subsequently, there is a growing number of the so-called ‘citation analysis’, focusing on the ‘social’ influence of certain scientific works.

Another type of input, although not so ‘serious’ is of course from the public itself, those people which are enthusiastic on the science, either by email, blog posting, etc. Another way is perhaps to introduce some ‘rating review’ in those blogging, just like amazon.com enables potential book readers to see what others say. In this regards the administrator may enable the comment/rating review be sent to the scientists in order for them to see how their papers may get better response.

Of course, a scientist can always choose either to take care of the ‘new media’ response, or just get rid of them, and focus on more serious review by his/her peers. Nonetheless, a balanced view may be better, i.e. to consider both channels more or less equally. In this regards the ‘periodic table of the social media elements’ can be considered too [3].

## SAIL: A hypothetical Social Archive Indexing Language

Considering the aforementioned line of thought, it becomes quite apparent that the present system that scientists often use to communicate their workds (indexing, preprint service etc), is not really compatible with the recent development of new media. Therefore, one can think of possibility to introduce a standard method to let the indexing database, let say in XML type (see [6][7][8]) to communicate with blog directories or with atomic feeder systems.

Let's call this hypothetical Indexing Language as SAIL (Social Archive Indexing Language), which perhaps may be compared with INCISO introduced in [5]. For a good comparison, we can start with the SPIRES-HEP's method to indexing entries (based on real data of these writers, see Appendix):

ASTR;

AUTHOR = Smarandache, Florentin;

AUTHOR = Christianto, V.;

AFFILIATION = New Mexico U.;

TITLE = Schrödinger Equation and the Quantization of Celestial Systems;

PUB-NOTE = Prog.Phys.2,2006;

DOI = ;

DATE = Apr 2006;

P = 5;

CITATION =Prog.Phys.4,2006;

EXP = ;

CNUM = ;

Now we can transform this data into XML-type format :

### SAMPLE XML FRAGMENT

```
<archive num="gt000x">
  <author1>
    <firstname>George</firstname>
    <lastname>Burdell</lastname>
    <affiliation> New Mexico U.;</affiliation >
  </author1>
  <author2>
    <firstname>V.</firstname>
    <lastname>Christianto</lastname>
    < affiliation > New Mexico U.;</ affiliation >
  </author2>
  <author3>
    <firstname></firstname>
```

```
<lastname></lastname>
< affiliation > </ affiliation >
<author3>
<TITLE></TITLE>
<PUB-NOTE></PUB_NOTE>
<DOI > </ DOI>
<Date > </ Date>
<page > </ page>
<Citation > </ Citation>
<Exp > </ Exp>
<CNUM > </ CNUM>
</archive num>
```

Of course, this is only an example, in order to give some illustration on how the existing indexing/database system can be extended slightly to enable them to communicate with the new media repository. The next step is to build communication with the atomic feeder for blogging directories, and so on.

### **Concluding remarks**

The new media has begun to embrace the communication sphere of modern society, or perhaps better, a postmodern society. Therefore new ways to interact with the common people shall be considered by the scientific societies. After all, science moves on not only by making continuous progress in its own, but also because of its interaction with the public sphere...

This article was of course quite elementary, but hopefully would be found useful.

### **Further References:**

- [1] "Transformation in Cultural and Scientific Communications," March 2009, <http://nlablog.wordpress.com/conference-2009/>
- [2] "NFAIS 2009, The rise of social media and multimedia communication," <http://www.web2learning.net/archives/2659>
- [3] "The periodic table of social media elements," <http://eyecube.wordpress.com/2009/02/23/the-periodic-table-of-the-social-media-elements/>
- [4] "Real insights from Social media," <http://www.med20.com/blog/2009/03/real-insights-from-social-media-epharma-summit-part-2/>
- [5] Barrueco, J., et al., "INCISO automatic citation index," (2007) <http://openlib.org/home/krichel/papers/lille.doc>
- [6] Niinimäki, M., V. Sivunen, "Experience in computer-assisted XML based modelling in the context of libraries," HEP Libraries Webzine Issue 8 (2003)

[7] Di Donato, F, "Designing a semantic web path to e-Science," In Semantic Web Applications and Perspectives (2nd : 2005 : Trento), Trento (Italy), 14-16 December 2005. URL: <http://eprints.rclis.org/5139/>

[8] Open access sources, [http://www.urockcliffe.net/index.php?title=Open\\_access\\_sources](http://www.urockcliffe.net/index.php?title=Open_access_sources)

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### **Appendix: Typical Reply from SPIRES administrator**

Thank you for the update. We believe that this information has been corrected in SPIRES, and will be searchable within a day or two, depending on the site that you use. Please feel free to send us any further corrections or comments you may have about the databases, or let us know if this is not resolved to your satisfaction.

Best Regards,

SLAC Library

-----Your Initial Request-----

```
paperData=ADD;
DOC-TYPE = Published;
ASTR;
  AUTHOR = Smarandache, Florentin;
  AUTHOR = Christianto, V.;
  AFFILIATION = New Mexico U.;
  TITLE = Schrödinger Equation and the Quantization of Celestial Systems;
PUB-NOTE = Prog.Phys.2,2006;
DOI = ;
DATE = Apr 2006;
P = 5;
CITATION =Prog.Phys.4,2006;
EXP = ;
CNUM = ;
scl=S;hn=From author to SLAC Library (Official use only);
;

submit=Send
```