The tension between academ
knowledge production and online pe
productio

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October 17-20, 20
Copenhagen Business Sch
Denm

Peer Production

Mass-online commons-based peer production

From *Free Software* to *Wikipedia* and beyond

Main features:

- Produsers: users as producers
- Decentralized system – meritocracy
- Copyleft: right for distribution
- Open access and free flow of information
- Scalability
- Quality

Towards a more open Science?

Science was not intrinsically open in the beginning (i.e. *Secrecy Imperative)*

Openness as a historical/contingent outcome of changes in the patronage system (Paul David)

Open Science Movement:

- *more open science is desirable*
- *present openness is in danger*

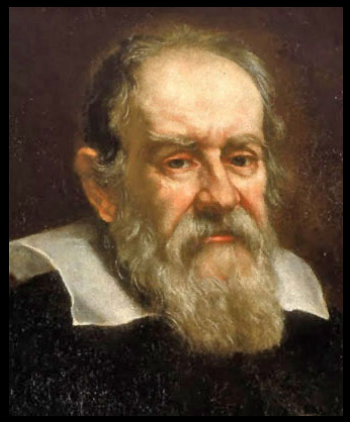
Importing Peer Production mechanisms:

Open publication (i.e. OA journals, arXiv)

Data sharing / open notebook science

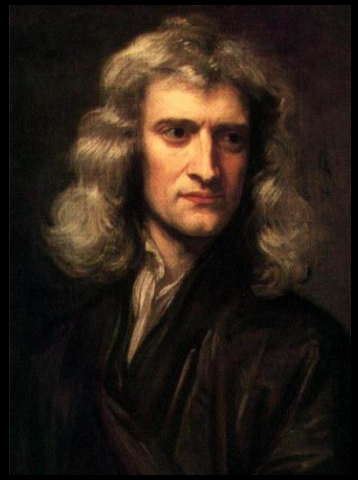
Citizen Science

New collaboration tools

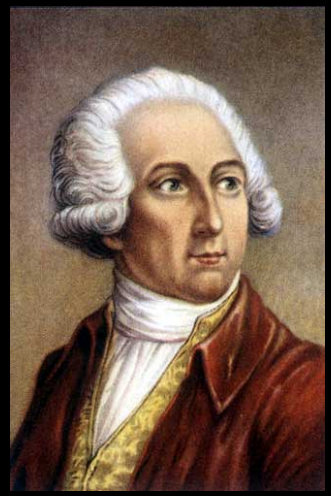


Galileo 1564-1642

Huygens 1629-1695



Newton 1642-1727



Lavoisier 1743 -1794

Polymath Project

Timothy Gowers (Cambridge University)

Gowers's Weblog

Mathematics related discussions

« Questions of procedure Why this particular problem? »

A combinatorial approach to density Hales-Jewett

By gowers

Here then is the project that I hope it might be possible to carry out by means of a large collaboration in which no single person has to work all that hard (except perhaps when it comes to writing up). Let me begin by repeating a number of qualifications, just so that it is clear what the aim is.

1. It is *not* the case that the aim of the project is to find a combinatorial proof of the density Hales-Jewett theorem when $k = 3$. I would love it if that was the result, but the actual aim is more modest: it is *either* to prove that a certain approach to that theorem (which I shall soon explain) works, *or* to give a very convincing argument that that approach cannot work. (I shall have a few remarks later about what such a convincing argument might

arXiv.org > math > arXiv:1002.0374

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Mathematics > Combinatorics

Density Hales-Jewett and Moser numbers

D.H.J. Polymath

(Submitted on 2 Feb 2010 (v1), last revised 25 Apr 2010 (this version, v2))

For any $n \geq 0$ and $k \geq 1$, the \emph{density Hales-Jewett number} $c_{n,k}$ is defined as the size of the largest subset of the cube $[k]^n$:= $\{1,...,k\}^n$ which contains no combinatorial line; similarly, the Moser number $c'_{n,k}$ is the largest subset of the cube $[k]^n$ which contains no geometric line. A deep theorem of Furstenberg and Katznelson shows that $c_{n,k}$ = $o(k^n)$ as $n \to \infty$ (which implies a similar claim for $c'_{n,k}$); this is already non-trivial for $k = 3$. Several new proofs of this result have also been recently established.
Using both human and computer-assisted arguments, we compute several values of $c_{n,k}$ and $c'_{n,k}$ for small n,k. For instance the sequence $c_{n,3}$ for $n=0,...,6$ is $1,2,6,18,52,150,450$, while the sequence $c'_{n,3}$ for $n=0,...,6$ is $1,2,6,16,43,124,353$. We also prove some results for higher k, showing for instance that an analogue of the LYM inequality (which relates to the $k = 2$ case) does not hold for higher k, and also establishing the asymptotic lower bound $c_{n,k} \geq k^n \exp(- O(\sqrt[\ell]{\log n})) $ where ℓ is the largest integer such that $2k > 2^\ell$.

Comments: 49 pages. To appear, Szemeredi birthday conference proceedings
Subjects: **Combinatorics (math.CO)**
MSC classes: 05D05, 05D10

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Research Project

The use of Internet open contents for university education: an empirical study on the perceptions, attitudes and practices of university faculty on Wikipedia. **Project team: E. Aibar, J. Gomà, J. Lladós, M. Lerga, A. Meseguer and J. Minguillon**

http://oer.uoc.edu/wiki4HE/

Main research question: Are Peer Production an Science Compatible?

Specific questions: *what do university faculty members think of Wikipedia? Do they like it? Do they use it? Do they like students to use it? Do they find it useful?*

Empirical study: 12 interviews + large survey to all faculty in 2 public universities (5000 people)

Wikipedia: wiki + free

Peer Production *versus* Science

Similarities

- Meritocracy
- Results are collectively achieved
- Peer Review
- Open publication of findings
- Objectivity as a goal
- Claims must rest upon reliable data or sources
- [Mertonian norms]

Differences

- [Science] Only (certified) experts may contribute
- [PP] Anyone can contribute (even anonymously)
- [PP] Not only results but process of production is also published
- [PP] Peer review is open and post-publication
- [PP] Individual authorship diluted

Some preliminary results

- Most faculty members are themselves frequent Wikipedia users.
- They show wrong ideas about how Wikipedia works.
- They are sceptical about the absence of a formal editorial committee and about the open nature of participation.
- Anonymity is also a source of particular concern.
- Some assume and anti-expertise ethos in Wikipedia.
- They see dangers when students use it as a reliable source. It is assumed that students make improper uses of Wikipedia.
- Though some mention mistakes or poor articles active use (contributing) is scarce.
- Quality is often perceived as very variable. This variability is found more problematic in Wikipedia than in standard academic publications.