REPLACING ACADEMIC JOURNALS

Authors:

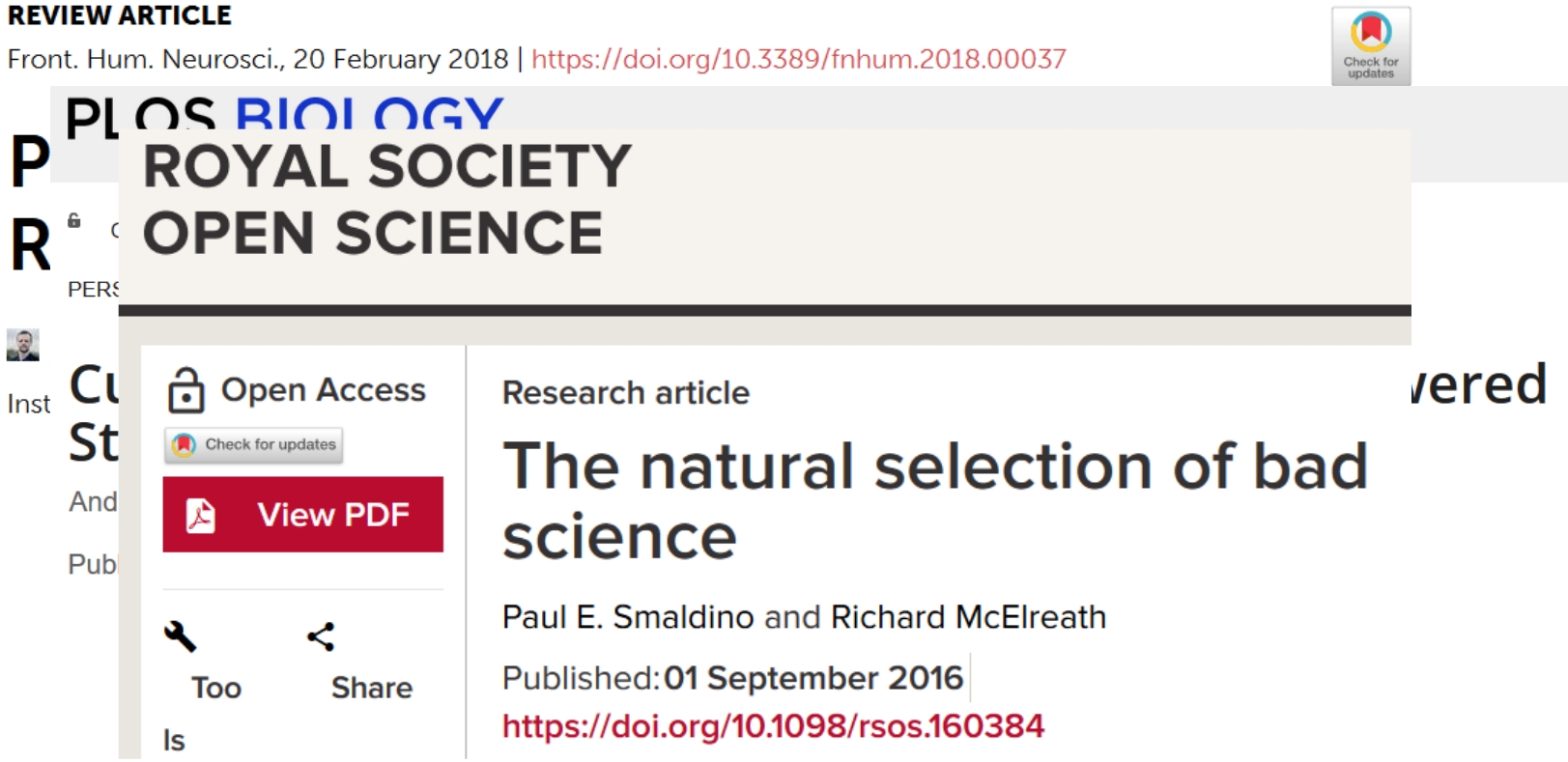
Björn Brembs, Universität Regensburg, Germany
Philippe Huneman, IHPST, CNRS, Paris, France
Felix Schönbrodt, LMU Munich, Germany
Gustav Nilsonne, Karolinska Institutet, Sweden
Toma Susi, University of Vienna, Austria
Renke Siems, Reutlingen, Germany
Pandelis Perakakis, Complutense University of Madrid, Spain
Varvara Trachana, University of Thessaly, Larisa, Greece
Lai Ma, University College Dublin, Ireland
Sara Rodriguez-Cuadrado, Autonomous University of Madrid, Spain

https://doi.org/10.5281/zenodo.5526634

@GustavNilsonne

Three crises

- **Reliability**
- Affordability
- Functionality



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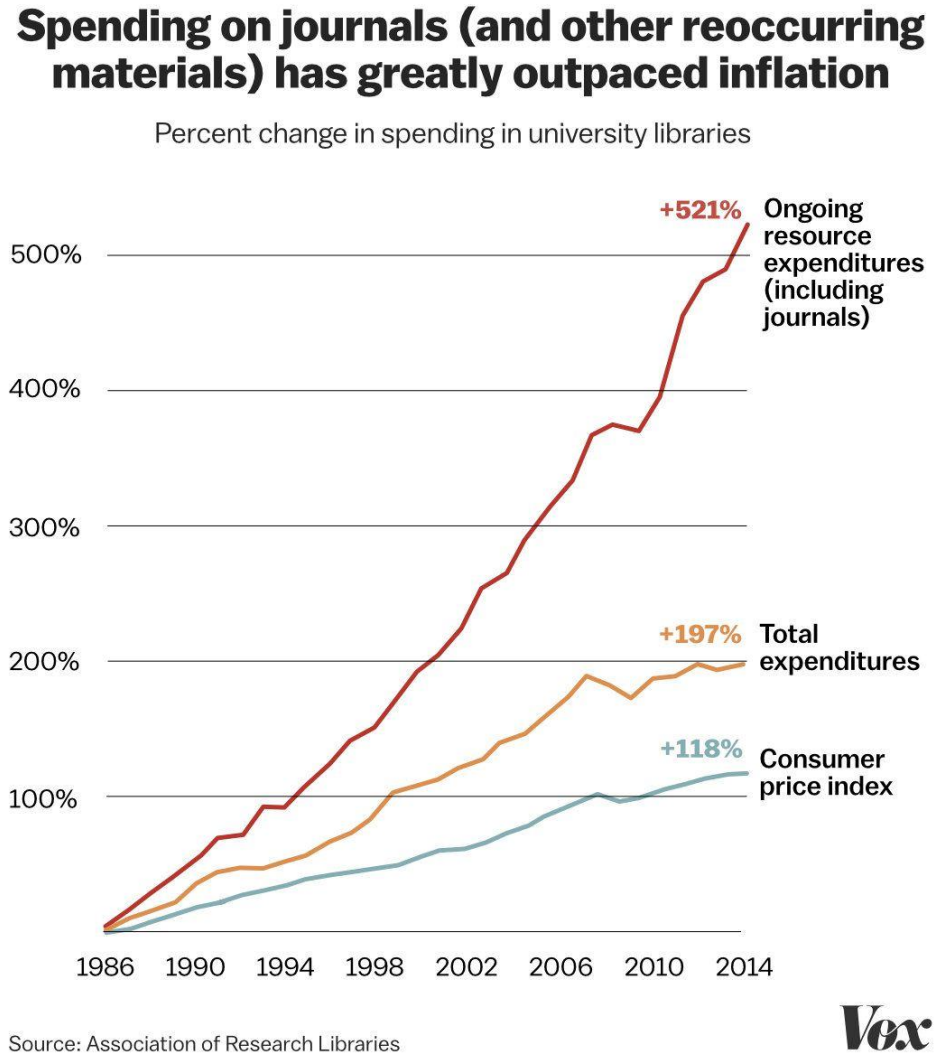

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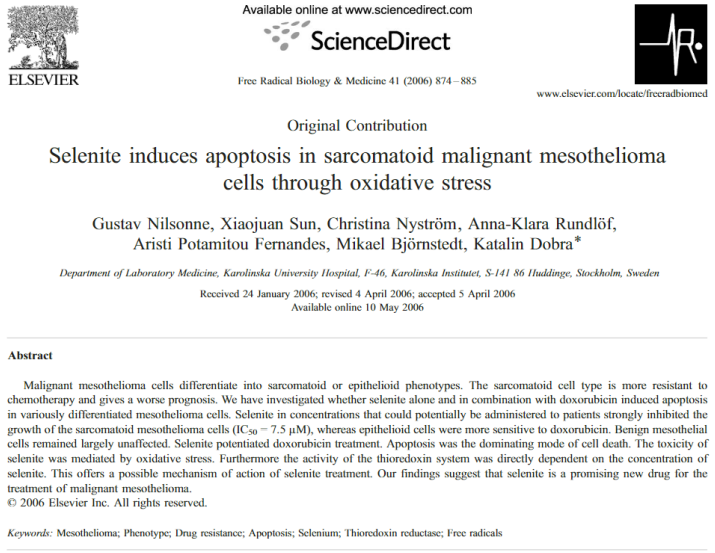

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Original Contribution

Selenite induces apoptosis in sarcomatoid malignant mesothelioma cells through oxidative stress

Gustav Nilsonne, Xiaojuan Sun, Christina Nyström, Anna-Klara Rundlöf, Aristi Potamitou Fernandes, Mikael Björnstedt, Katalin Dobra*

Department of Laboratory Medicine, Karolinska University Hospital, F-46, Karolinska Institutet, S-141 86 Huddinge, Stockholm, Sweden

Received 24 January 2006; revised 4 April 2006; accepted 5 April 2006
Available online 10 May 2006

Abstract

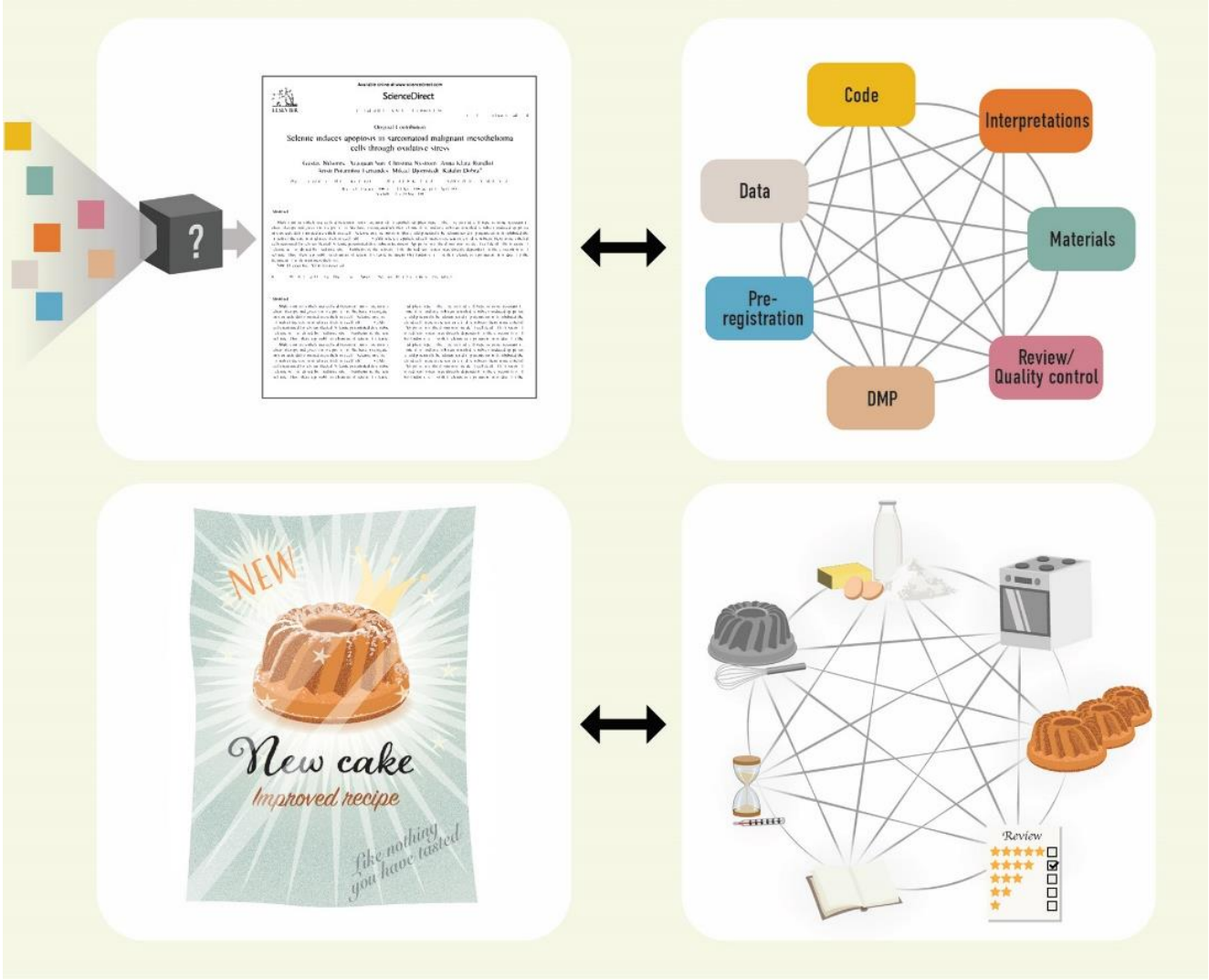
Malignant mesothelioma cells differentiate into sarcomatoid or epithelioid phenotypes. The sarcomatoid cell type is more resistant to chemotherapy and gives a worse prognosis. We have investigated whether selenite alone and in combination with doxorubicin induced apoptosis in variously differentiated mesothelioma cells. Selenite in concentrations that could potentially be administered to patients strongly inhibited the growth of the sarcomatoid mesothelioma cells ($IC_{50} = 7.5\ \mu M$), whereas epithelioid cells were more sensitive to doxorubicin. Benign mesothelial cells remained largely unaffected. Selenite potentiated doxorubicin treatment. Apoptosis was the dominating mode of cell death. The toxicity of selenite was mediated by oxidative stress. Furthermore the activity of the thioredoxin system was directly dependent on the concentration of selenite. This offers a possible mechanism of action of selenite treatment. Our findings suggest that selenite is a promising new drug for the treatment of malignant mesothelioma.

Keywords: Mesothelioma; Phenotype; Drug resistance; Apoptosis; Selenium; Thioredoxin reductase; Free radicals

Journal article retains features of the printed artifact

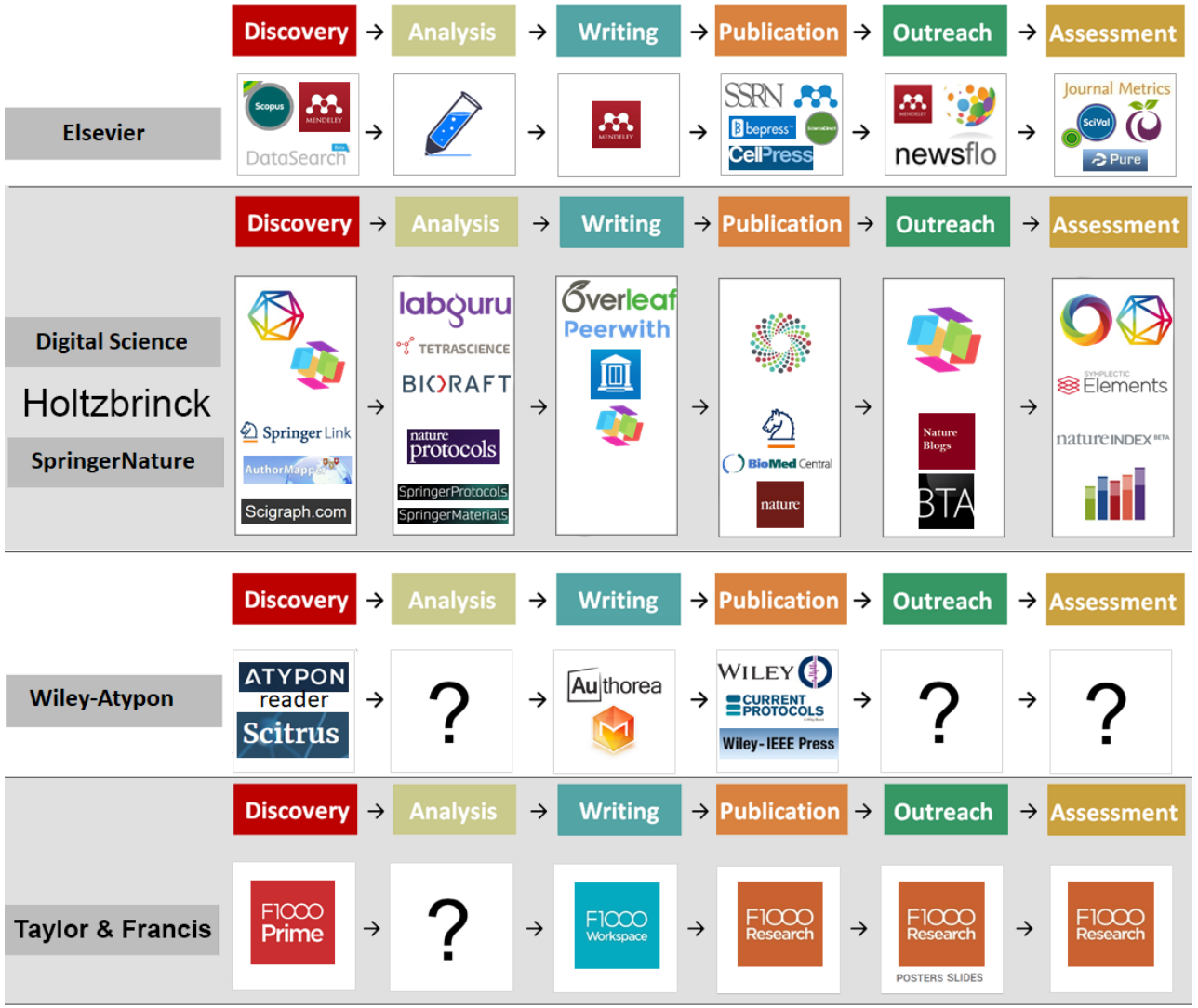
- Static
- Low-operability formats (pdf)
- Long lag times to publication
- Quality control by peer review is opaque and unsystematic
- Authorship is the currency of merit
- Access limited/temporary

A system of interoperable digital research objects



https://doi.org/10.53962/hbfx-kmg3

Capture of academic workflows



Goals for a modern scholarly digital infrastructure

- Restore governance over infrastructures and ownership of research objects to the scientific community
- Replace traditional journals with a decentralized, resilient, evolvable network that is interconnected by open standards
- Replace the monopolies of current journals with a genuine, functioning and well-regulated market, where substitutable service providers compete and innovate
- Replace journal prestige as proxy measure of quality with systematic assessments of research quality

Solutions

- Redirection of funding from legacy publishers to new infrastructures
- Replace negotiated deals with standard tender processes
- Funding agencies can require minimum standards of infrastructures and policies at research performing organizations as conditions for grants
- Step away from reliance on prestige metrics and develop new, modern and adaptable systems for assessing quality of outputs
- Ensure metrics for monitoring and evaluation are transparent and reproducible

Thank you for listening