

Berlin 5 Open Access

From Practice to Impact:
Consequences of Knowledge dissemination

University of Padova - September 19-21, 2007

**Research Evaluation in an Open
Access Context**

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Background

- Research evaluation (ex post) is a widespread Government steering tool as well as a mean for supporting the allocation of public financial resources
- Different methodologies for ranking Universities at international level on the basis of research quality and overall visibility are emerging, pushing institutions toward further competition
- Peer review and bibliometrics are the most diffused methods. Bibliometrics also strongly influence the academic ranking

Aim and questions

Our aim is to discuss how concepts and means related to the Open Access (OA) context can influence current practices in research evaluation

- How can peer review be implemented according to the OA initiative?
- Are there new tools, apart from metrics, which can be used in order to reinforce peers' outcome?

Peer review and OA: are they separate debates?

- OA aim is only to make scholarly paper freely available on the Internet
- Instead, we assert that OA could help the improvement of peer review by allowing to overcome some drawbacks of traditional peer review (conservative, bias, non-transparent procedures), as well as by enhancing the peer review role for communication of science to the public

Scope of the analysis

- We consider Italy a good example because Italian institutions represent more than 1/3 of the institutions that signed the Berlin Declaration, and almost all the Italian universities are represented
- We focus on the academic research assuming that research developed within University and University-related Institutes is mostly related to the production of new scientific knowledge
- Evidences from the Research Evaluation Exercise (VTR) recently developed in Italy by the National Committee for the Evaluation of Research (CIVR) will be presented.

Scope of the analysis

- We start from one of the Recommendations of the Berlin 3 Open Access Conference:
- *“Institutions should encourage their researchers to publish their research articles in open access journals where a suitable journal exists and provide the support to enable that to happen”*
- Our will is to question which kind of constraints, if any, institutions can face because of the research evaluation practices

Changing science

- Shift toward Neo-liberal paradigm (ideologies and political discourse) with:
 - Revision of the nature and the role of science as activity that should be economically useful, developed with the market and for the market
 - Modification of the relationships between Government and science: knowledge is a mean of production and a commodity. Control over the codification of knowledge increase (what is the valid knowledge?)

Consequences

- Tensions between the historical functions, rules, practices, values and the new ones within institutions
- Shift in power toward the management elites
- Push toward further marketization of teaching and research within HEIs and PROs
- Reducing possibility to maintain the research base (pursuing of short-term “useful” research, and supporting research which “enhance reputation”)

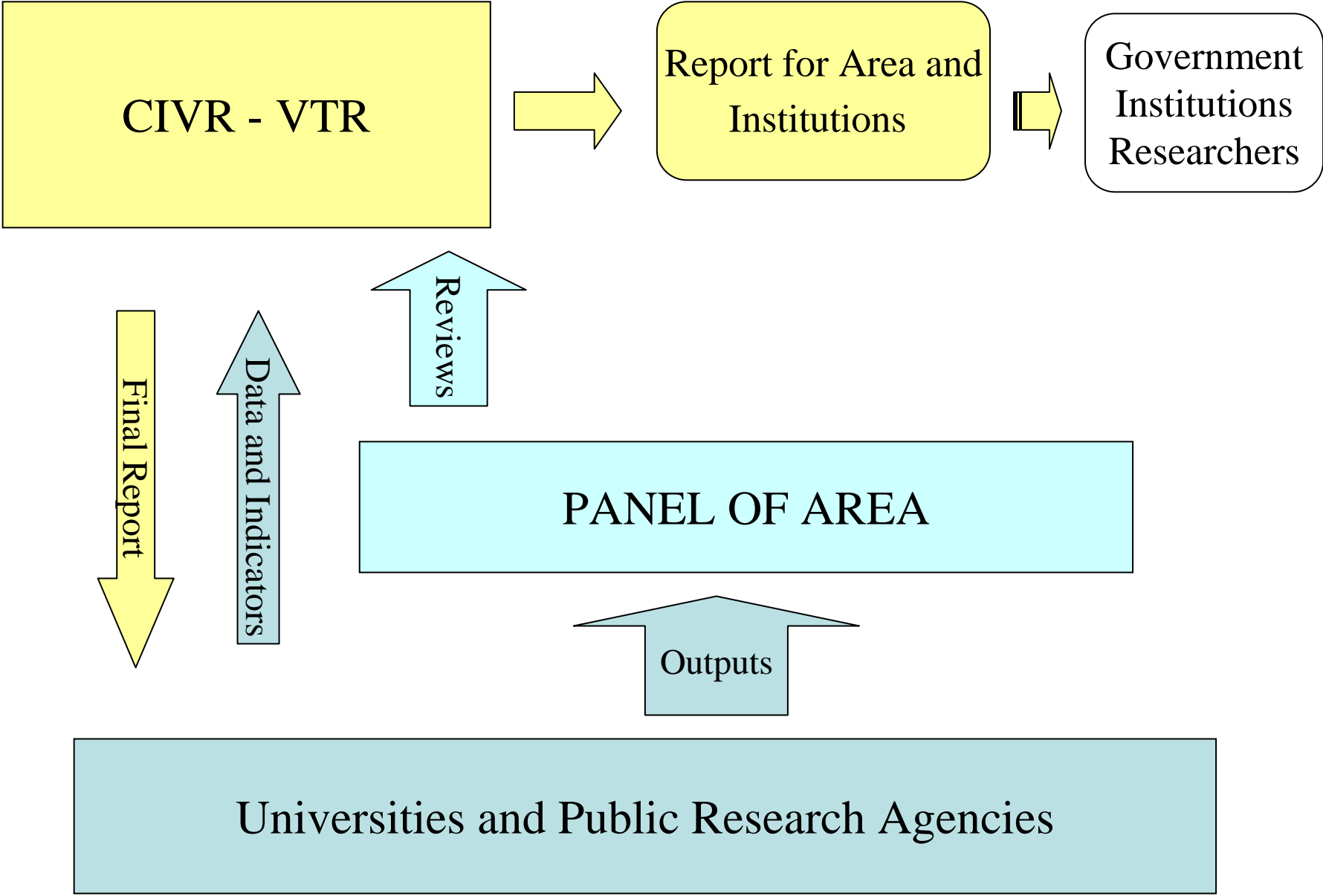
Research Evaluation

- Evaluation is a valid tool toward the implementation of the neo-liberal perspective (RAE)
- Scientific community is largely engaged in refining the rules of research evaluation, but rarely it questions the understatement
- We suggest that OA principles have the potential to maintain a genuine interest in scholarly communication as main publication objective as well as to improve knowledge about what science is

RANKING OF SOME ITALIAN UNIVERSITIES

(top 100 European Universities)

	SHANGAI	WEBOMETRICS
LA SAPIENZA Rome	34	104
MILANO	35-36	141
PISA	35-36	61
FIRENZE	57-78	109
PADOVA	57-78	109
TORINO	57-78	142
BOLOGNA	79-122	29



Characteristics of VTR

Retrospective peer evaluation focused on the quality of the research output of the academic institutions in the different scientific areas aimed to support decision making on resource allocation

VTR judged only a **limited number of publications** comparing with the overall production of the institutions (0,5 product for each FTE researcher working in the institution in the 2001-2003 period)

Peer reviewing was assessed in four disciplinary areas, namely **Chemistry, Biology, Humanities, Economics** (Reale et al., 2007)

Key figures of the VTR

Units evaluated	102
Researchers	64.028
Research areas	20
Products	18.508
Panels	20
Panellists	151
Experts	6.661
Direct costs (th. €)	3.550
Time (months)	18

Key figures in the four selected areas

		C	B	H	E
Panellists	National	9	10	19	8
	Intern.nal	3	3	5	4
Experts	National	531	752	731	181
	Intern.nal	148	261	102	104
Outputs	Articles IF	1009	1514	178	526
	Without IF	5	7	201	156
	Books	12	11	2066	289
	Others	63	43	78	0
Rating		0,81	0,83	0,84	0,67
Excellence		0,32	0,33	0,40	0,17

Criteria for peer review assessment

- **rationality**: the rationale of the process must be recognised by all the potential users of the evaluation results,
- **impartiality**: no differences should derive from personal interests of peers, from positions against or in favour of an author or institution,
- **validity**: the setting up of technical standards and rules aimed to guarantee a good judgement of the research quality,
- **reliability**: peers are expected to judge the quality level of a paper, nor the author reputation or the prestigious of the institutions the authors belong to or the reputation of the journal where the article is published
- **efficiency**: can be measured through the cost of the exercise and how it was time consuming,
- **effectiveness**: refers to the capability of the process to identify high quality research, providing also indication to the decision makers

Results of the assessment

The reliability and efficiency of the peer reviewing process are mainly linked to:

- the transparency of the VTR rules and the involvement of external representatives for the setting up of criteria for the panel composition
- the large use of ICT
- training and monitoring activities developed by the CIVR
- the continuous supervision of CIVR on the process management

Results of the assessment

Strengths are:

- no influence of subjectivity, prestigious of institutions and reputation of scientists
- good agreement between peers

Weak points are:

- difficulties for evaluating interdisciplinary research
- lack of transparency about the criteria used by Panels for selecting the experts

The Italian experience confirms the robustness of peer review for assessing of the quality of research, but it puts in evidence that it is necessary to take care of the process management, as well as to monitor it.

Peer review and IF

We analyse the kind of correlation between peer outcome and journal IF values for understanding what is the relationship between the two evaluation tool and the added value of peer reviewing.

The expert judgments will assign each product to one out of 4 merit levels, namely Excellent, Good, Acceptable, Limited.

Panels calculated the rating and excellence indexes for each institution and delivered the Final Report.

$$\text{Rating}_i = [(E_i * 1) + (G_i * 0.8) + (A_i * 0,6) + (L_i * 0,2)] / T_i$$

$$\text{Excellence index} = E_i / T_i * 100$$

IF and Peer judgements

We will control the **linkages between the final judgements expressed by the panels and the IF values** of the articles submitted, by using correlation and an ordinal regression model.

Humanities is not included in this test since articles have IF values only in very limited cases.

We will also test the extent to which the **articles with IF received a better judgement** in comparison with other outputs, namely articles without IF and books.

The last control was carried out for economics.

The relationships between IF and Peer judgements

-The tests on the linkage between the score of peer final assessments and IF values revealed a significant but weak association.

-It reinforces the idea that IF is a good predictor of the quality of the journals, not for the quality of the articles published in that journals, and its function “as mean to control and strengthen peer review” (Weingart, 2005) is limited in the case of retrospective evaluation of research institutions.

Rating and excellence index in Economics

	Rating	Excellence index
Articles with IF	0,80	0,29
Articles without IF	0,60	0,05
Books and chapters of books	0,49	0,03

The relationships between IF and Peer judgements

The case of Economics suggests that bibliometric indicators shape the concept of quality in sectors where they are largely used, but do not yet represent the rule for scholars publication, as in chemistry or biology.

Bibliometrics seems to act, in this cases, as a factor linked to the internationalisation process of the field because it assures that papers are included in journal with a large international circulation.

The introduction of this kind of indicators in the peer review process, according to the model of the informed peer review, can produce great effects in some disciplinary fields, impacting the final peer judgements as a watershed for identifying the quality of research.

VTR - EXCELLENCE INDEX ($E_i / T_i * 100$)

	PHYSICS	CHEM.	HUMAN.	SOCIAL S.
ROMA LA SAPIENZA	68	33	35	6
MILANO	73	38	26	43
PISA	73	60	17	29
FIRENZE	67	66	29	27
PADOVA	77	52	48	25
TORINO	82	38	27	28
BOLOGNA	65	57	24	45
Area on average	52	31	28	20

Impact of VTR (?)

- The selection of outputs to be submitted for evaluation shows that high impact journals are perceived as the most valuable kind of output
- The enlargement of the number of outputs to be submitted for evaluation could put individuals and institutions more and more under pressure for disseminating research work through indexed journals
- Citation analysis can be used in order to assess the impact of research outputs
- In the medium term publication in indexed journals might become the objective of work rather than a mean to disseminate ideas and knowledge
- A few evidences are yet visible at the HEIs level in some fields

Open Access Journals

Are OA journals an alternative for disseminating research?

- Open peer review should be structured for encouraging researcher to publish their papers in OA journals (published papers must be compatible with the scope of the journal, must be original work build upon previous works, results must be justified, and they should avoid obvious errors)
- Practices which are not recognized as reliable will encourage researchers to publish on OA journals research works at an early stage, opinions, or pieces which can serve as announcements of what is published on “quality journals”
- Open peer review can help to overcome ineffectiveness of traditional peer review (Falagas, 2007 suggested un-blinded peer review, simultaneous submission, open availability of the reviews of the rejected works)

Open Access Journals

- PLoS ONE:

- less rigorous peer review prior to publication
- open peer review after publication
- free accessibility of the paper

large and immediate reaction to methodology and findings

no protection against fraud, false or inaccurate results; possibility to have negative consequences

Open peer review

- Trial launched by Nature in 2006 in order to explore a more participative approach which could overcome the peer review drawbacks
- Results:
 - Only 5% of the authors of the reviewed papers agreed to their paper being displayed for open comments
 - Most comments were not technically substantive (“nice work”)
 - Authors surveyed were reluctant to open peer review (11 out of 27 expressed a preference for open peer review)
 - Interesting experiment but no implementation

Conclusions

- Encouraging scholars to publish on OA journal could become effective if OA journals can compete with traditional subscription journals in research evaluation
- OA journals can compete for this aim only if they can be perceived of “high quality”, and quality is strictly related to open but rigorous peer review
- OA journals might be powerful means to implement open peer review in order to overcome weakness of the traditional review process
- Open peer review can provide a significant contribute to communication of science to other scholars and to the public

