

From theory to practice to policy

– Unlocking the potential of multidisciplinary in
European research

- **Event-report from EP-seminar 11 January** -

Speakers

MEP **Maria Da Graça Carvalho**

MEP **Britta Thomsen**

Professor **Mariano Gago**, Technical University of Lisbon

Head of department **Maja Horst**, University of Copenhagen

Associate professor **Bente Stallknecht**, University of Copenhagen

Associate professor **Astrid Pernille Jespersen**, University of Copenhagen

Marion Dewar, member of cabinet Máire Geoghegan-Quinn, Commissioner of Research and Innovation

Philip Campbell, PhD, Editor-in-Chief, Nature Publishing Group

Professor **Paul Boyle**, Science Europe

Robert Burmanjer, Head of Unit, DG research, the European Commission

Conclusions

The purpose of the seminar was to initiate a dialogue between stakeholders on the subject multidisciplinary in European research. Through talks from researchers, research funders, publishers and policy makers, the seminar sought to close in on the question: *What are the main structural barriers in European research that impede the successful design, implementation and dissemination of multidisciplinary research?*

The speakers all agreed on the importance of addressing multidisciplinary research on a European political level in order to optimize its framework conditions. The concept of multidisciplinary entails several structural barriers, first and foremost promoted by traditions and cultures within the research environment itself and the policies around it. These are not barriers that are easy to break down. There may even be good reasons for accepting that excellent research takes its point of departure in long lasting research disciplines. Multidisciplinary research only provides an added value to European research when it is based on excellent disciplines. However there is room for reducing the redundant barriers, which solely due to

tradition seem to hinder researchers from different disciplines from working together on holistic solutions to Europe's multi-faceted challenges. Following are some of the main lessons learned at the seminar:

- Multidisciplinarity **takes time**. Understanding other disciplines and building up trust between researchers from different scientific tradition is a long and slow-moving process. Researchers as well as policy makers should realize this dimension of time when planning the research projects and setting up the framework for future research funding.
- Assessing the quality of different scientific traditions and disciplines requires an open mind and broad knowledge. **Peer reviews** of multidisciplinary research and research proposals therefore require careful and multi faceted selection and training of the review panel-members.
- The ability of researchers to work across disciplines reflects their **academic education and training**. Multidisciplinarity should be introduced at an early stage of a researcher's career and future research policies should focus as much on *multidisciplinary learning* as on *multidisciplinary research*.
- The success of all research depends on **strong leadership** to establish consensus between partners and take forward moving decisions. However in the case of multidisciplinary research the decisiveness and inclusiveness of the leadership is perhaps even more important than usual. This notion should be taken into consideration by research performing organizations as well as research funding organizations when designating tasks and considering which projects to fund.

Speaker's summary

On January 11 2012 **MEPs Britta Thomsen** and **Maria Da Graça Carvalho** hosted the seminar *From Theory to practice to policy – unlocking the potential of multidisciplinary in European Research*. The seminar was organized by **creoDK** – the EU research office of the University of Copenhagen, The Capital Region of Denmark and The Technical University of Denmark.

Maria Da Graça Carvalho opened the seminar commenting on the European Commission's proposal for Horizon 2020, the next EU framework programme for research and innovation. Based on the first assessment Mrs. Carvalho praised the proposal for being significantly improved compared to its predecessor. The increased budget and the simplified framework structure received special mentioning in this regard. However Mrs. Carvalho also noted that despite of these important improvements, there is still **room for improvement**. Especially the policy framework for multidisciplinary research could be dealt with more thoroughly to ensure that it is not only preached, but also practiced.

In his capacity as a former Portuguese minister of research, and current position as professor at the Technical University of Lisbon, **Dr. Mariano Gago** represented a political as well as a scientific perspective on the issue. Dr. Gago started his presentation stating that the issue of the seminar is as old as science itself in the sense that the evolution of monodisciplined research in itself is a hindering factor in relation to true multidisciplinary research. **Investing in new research areas**, where rules of disciplinarity are less established could thus be a way to promote multidisciplinary. In continuation Dr. Gago addressed the need to **limit the gap between policy-makers' and researchers'** understanding of multidisciplinary research in general. Both groups should collaborate on creating a proper framework with the aim to facilitate multidisciplinary and synthesis in future national and European research programmes. Finally Dr. Gago emphasized the importance of multidisciplinary in **higher education** as a key tool to develop a culture of multidisciplinary in future research communities.

Dr. Gago's messages were well received by **Marion Dewar** member of cabinet of Máire Geoghegan-Quinn, Commissioner for Research and Innovation. Mrs. Dewar noted that multidisciplinary is an issue of great interest to the Commissioner, who considers it a key-factor in the forthcoming challenge-driven research program. Mrs. Dewar continued by highlighting the recent initiative of the European Commission to pilot the ERC Synergy Grants, which allow a small group of excellent researchers to collaborate. Dewar noted that excellent research is not by definition single-disciplined. It should therefore be **an integral part of both the challenge driven and the bottom-up driven research programmes** in Horizon2020.

Dr. Maja Horst's presentation took its point of departure in her experiences from participating in several multidisciplinary research projects before being appointed as head of department at University of Copenhagen. Dr. Horst described a number of challenges to successful multidisciplinary research. Several of these challenges can be traced back to the strong monodisciplinary historical trajectories which are reinforced by the organizational structure of universities as well as national and international funding

agencies. Horst argued that in order to deal with such challenges, the management of universities should operate with **more dynamic criteria of excellence and merit** and **focus on bottom-up collaboration based on researchers' motivation rather than top-down organization**. Furthermore research funding agencies too should aim to adapt by creating support structures for multidisciplinary programs and applications, thereby anticipating e.g. the **longer time scale** and increased risk factors that may arise due to the distinctive characteristics of multidisciplinary research.

Maja Horsts presentation was supplemented by the research project FINE (<http://fine.ku.dk>), a real life example of multidisciplinary research. Project FINE was presented by associated professor **Bente Stallknecht** and assistant professor **Astrid Pernille Jespersen** both from University of Copenhagen. Stallknecht and Jespersen along with the other researchers in project FINE aimed at delineating the molecular mechanisms behind the large variation in insulin sensitivity among overweight subjects. Furthermore, the research project focuses on establishing the dose-response relationship between exercise training and metabolic health as well as appetite. Additionally FINE aimed at gaining knowledge of the social and cultural barriers and possibilities for lifestyle changes in everyday life using knowledge from **four different disciplines of research** ranging from health to humanities. According to the researchers, one of the most crucial exercises for multidisciplinary research projects is to incorporate terms that are able to secure widespread support for a common overall goal while maintaining room for excellent research from all the involved disciplines to be unfolded on its own terms.

President of Science Europe, **Professor Paul Boyle**, stressed the importance of *disciplinarity* in obtaining multi- and interdisciplinary research. Working across disciplines requires a strong footing in one's own discipline. He recommended that questions of education for multidisciplinary should be taken into account, that **multidisciplinarity should be considered at the design stage of funding programmes** and that **peer review panels need particularly careful selection and training**. He also emphasized that multidisciplinary should not compromise excellence, while stressing the importance of recognizing the issue in publications and evaluations. Reflecting on multidisciplinary in the EU framework programme, professor Boyle pointed out that multidisciplinary works well in bottom-up approaches, while it has been less successful in more top-down programmes.

Another European perspective was presented by **Robert Burmanjer** head of unit at DG Research. Mr. Burmanjer noted that past and present research programmes have encouraged multidisciplinary research and this trend will be strengthened in Horizon2020. Reflecting on the title of the seminar he stressed the **need to ensure a close link between, theory, practice and policy**. In continuation Mr. Burmanjer welcomed the initiative to debate the framework conditions for multidisciplinary in research and invited all stakeholders to be included in the consulting process.

The last of the invited panelists was **Philip Campbell** Editor-in-Chief, Nature Publishing Group. Mr Campbell emphasized the importance of **peer reviews** in relation to funding agencies as well as in relation to scientific journals. Referring to his own organization he recognized that setting up a multidisciplinary

scientific peer review scheme is difficult and there is still room for improvement. However Nature is working towards a more multidisciplinary outlook e.g. by introducing a new multidisciplinary journal on climate change as a cross-cutting theme. Furthermore Mr. Campbell noted that journals and editors cannot make the difference alone. Strong leadership in the research environments and a dense cooperation with the industry sector is a necessity in order to ensure proper organization of multidisciplinary research.

Britta Thomsen ended the seminar with a sum-up of the input presented at the seminar. Mrs. Thomsen noted that multidisciplinary research may also play a role as a catalyst for breaking with counter-productive research traditions in relation to **gender issues**.