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European science: possibilities and  
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## Policy learning to internationalize European science: possibilities and limitations of open coordination

Merli Tamtik · Creso M. Sá

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**Abstract** Mutual learning exercises have become increasingly employed in Europe over the last decade. This study examines the policy learning process in the area of internationalization of science and technology, which has been targeted as a priority for Europe. Through a case study of the open method of coordination expert group in this area, the analysis identifies policy learning drivers, mechanisms and outcomes operating at multiple levels, from individual to organizational. Different theoretical perspectives are employed to analyze the findings, highlighting both the social and instrumental aspects of policy learning. Using multiple conceptual approaches helps account for important contributions as well as limitations of open coordination for the internationalization of science and technology agenda in Europe.

**Keywords** Policy learning · Research policy · Internationalization of S&T · Open method of coordination · European Union

Promoting internationalization cooperation in science and technology (S&T) has been at the forefront of the European Union's (EU) policy agenda. Part of the Europe 2020 Strategy, the internationalization of S&T is viewed as critical to bolster the economic competitiveness of the region. A Strategic European Framework for International S&T Cooperation was developed in 2009, proposing core principles in the area of international collaboration (e.g. openness, coherence of policies and programs, strategic choice in partners, outcome-oriented partnerships). The Innovation Union Communication (2010) emphasizes the importance of research collaboration even further by listing internationalization of S&T as one of five key policy areas in reaching Europe 2020 goals.

One of the critical challenges for advancing the internationalization agenda is the coordination of efforts across EU member states (ERAC-SFIC 2011). Most S&T activity

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takes place within national borders, supported and conducted by national institutions. Until the late 1980s, centrally coordinated research policy in the EU was largely nonexistent. Each of the member-states was involved in developing its own policy instruments, strategies and targets related to research and innovation (Gornitzka 2009). A push for coordinated research policy followed increasing concerns over the EU's global competitiveness (Van Vught 2010). The major initiative that defines the beginning of the policy coordination in research was the establishment of the European Framework Program (FP) in 1984, a prominent funding instrument for EU researchers (Gornitzka 2009; Van Vught 2010). The role of the EU in developing coordinated research policy has significantly increased in the trail of political declarations such as the Lisbon Strategy (2000), the launching of the European Research Area (ERA) in 2000, and more recently, the Innovation Union strategy accompanied by the Horizon 2020 financial instrument (2010). The European Commission's administrative branch—Directorate General (DG) Research—has been facilitating and supporting these policy developments.

Breaking away from the emphasis of national activities towards a more collaborative internationalization agenda in Europe calls for changes in ideas and preferences among S&T policy makers. Rather than opting for legislative regulations, which would have caused increased resistance among the member-states, a voluntary approach to coalesce national experts around such an agenda was adopted. In 2003, the European Commission introduced the open method of coordination (OMC) in research policy to foster mutual policy learning through benchmarking, action plans, and exchange of best practices (Morano-Foadi 2008; Van Vught 2010).

In this context, the OMC process was one of the first initiatives attempting to bring member-states together for working towards coordinated research policy. It involved policy areas such as mobility of researchers, internationalization strategy for research cooperation with countries outside of EU, and the development of large-scale research infrastructure projects, among others (Tamtik 2012). As a “soft” policy instrument, the OMC was designed to use peer pressure and “naming and shaming” as opposed to legal interference to induce member state involvement in the development of European research policy (Van Vught 2010). OMC also served as a significant trigger for influencing a gradual shift for the DG Research from operating as a funding agency towards becoming a policy developer and leader in shaping the European Research Area.

This paper examines the potential of the OMC by addressing the following question: How does the OMC contribute to policy learning? Policy learning is viewed as an indirect contribution to the generation of an internationalization agenda in Europe, as it is related to the views, orientations, and preferences of actors in the research policy field. Through a case study of the OMC “Internationalization of S&T” expert group, this study delineates how policy learning happens at the micro-level in a context of open coordination.

In pursuing the research question, the study also identifies drivers, mechanisms and outcomes of the policy learning process. Possibilities and limitations of the open coordination model in this policy field are discussed in the conclusion. Moreover, the findings build upon a growing body of literature dealing with the OMC in fields ranging from employment policies (Porte 2002; Mosher and Trubek 2003; Jacobsson 2004), social policies (Büch 2007; Zeitlin 2010), health policy (Hervey and Trubek 2007; Hervey 2008) to research and education policies (Kaiser and Prange 2004; Gornitzka 2005; Warleigh-Lack and Drachenberg 2011).

## Policy learning

The conceptual framework of this study draws on the literature on policy learning. Many conceptualizations have emerged to explain policy-making processes through policy learning. Zito and Schout (2009) summarize the main streams of this literature. They differentiate between organizational learning (learning on process-related behaviour), lesson drawing (learning on instruments), social learning (learning on ideas and world-views), political/symbolic learning (understanding preferences of others), unlearning (abandonment of particular ideas), no-learning (no change preference) and blocked learning (learning on individual stages, but no organizational effect).

The literature makes reference to variety of policy learning mechanisms. Such mechanisms include policy learning as change following policy evaluation (Rose 1991; Van Vught 2010), gradual learning through shifts in policy beliefs (Sabatier 1986), continuous learning through knowledge accumulation (Hecllo 1974; Etheredge and Short 1983) and individual enlightenment through social interactions (Wenger 2000; Toens and Landwehr 2009). The OMC provides a setting to analyze what is learnt (processes, instruments, ideas, preferences), who learns (individual or organization) and what mechanisms are used for learning.

The framework for this study synthesizes two broad, distinct approaches on policy learning that are evident in the literature. First, we categorize these approaches as *evidence-based* and *value-based* (See Table 1). The evidence-based approach takes an organizational perspective on policy learning, investigating adjustments in government structures or policies that result from new knowledge gained (Grin and Loeber 2007). This stream of literature focuses mainly on the conditions and outcomes of the policy learning process where conflicts, problems, or environmental changes lead to a modification of a specific policy or program. Policy learning is framed as the use of usually measurable evidence that leads to change in policies (e.g. Hecllo 1974; Etheredge and Short 1983; Rose 1991; Dolowitz and Marsh 1996; Common 2004; Berry and Berry 2007). In this vein, Bennett and Howlett (1992) distinguish between learning about new *ideas*, leading to policy change; learning about *processes*, leading to organizational change; and learning about *programs* leading to programmatic change.

The value-based approach suggests that knowledge is socially constructed and is a product of human interpretations shaped by the interactions of knowledge, environmental conditions and political actions (e.g. Weiss and Bucuvalas 1980; Sabatier 1986, 1988; Toens and Landwehr 2009). Policy learning is understood as a cognitive process. The focus is on individual beliefs about key components of policy such as problem definition, results achieved, goals, and actors' strategies and paradigms (Radaelli 2009). Sabatier (1988) suggests that policy learning is mainly about ideas that refine one's understanding of core policy beliefs and not necessarily about changing policy. Updating one's beliefs and knowledge occurs as a result of analysis and/or social interaction. According to this view

**Table 1** Synthesis of approaches on policy learning

Characteristic	Evidence-based approach	Value-based approach
Level	Organizational	Individual
Mechanism	Presenting evidence for change	Changing policy beliefs
Driver for change	Policy problem	Social interaction
Outcome	Measurable change in policies	Individual support for new policies

policy learning is a process that emphasizes the professional development and enlightenment of individuals.

Second, from each of the two broad approaches we distil specific mechanisms through which policy learning occurs (See Table 2).

The evidence-based approach frames policy learning as an almost automatic process where empirical knowledge leads to policy change (Hecló 1974; Etheredge and Short 1983). This type of mechanism is mediated through political conflict and environmental uncertainty. The primary learners are governments that look for evidence on how particular policy problems could best be solved. Another approach focusing on policy change proposed by Rose (1993) and Dolowitz and Marsh (2000), describes imitation mechanisms (e.g. lesson-drawing and policy transfer), where deliberate comparisons through searching and analyzing best practices leads to improvements in policy. Such learning mechanisms are based on the premise that governments can systematically learn from both the positive and negative experiences of others—a central feature of the OMC process. Learning about programs existing elsewhere allows for comparisons of existing programs, which may lead to dissatisfaction with existing policies and the search for alternatives.

In the value-based approach, policy learning mechanisms are described as gradual processes where accumulation of knowledge shifts the policy views of decision-makers (Ansell and Gash 2008). While Wenger (2000) focuses on individuals' inherent quest for knowledge advancement through engagement and social interactions, Sabatier (1986) tackles specifically policy learning. Sabatier examines how ideas get picked up and endorsed by experts. He argues that a variety of state and non-state actors form advocacy coalitions—interacting actors sharing similar belief systems. Jacobs (2009) claims that individual mental models generate beliefs that influence their policy preferences. Knowledge is used to advance one's belief systems through the implementation of public policies. From this vantage point, the OMC process is a vehicle for social interactions among individuals with diverse competencies and backgrounds, from which learning is expected to occur.

**Table 2** Mechanisms of policy learning

Mechanism	Level	Driver	Examples
Evidence-based approach			
Automatically through the accumulation of knowledge and experience	Organizational	Political conflict and power	Hecló's 'political learning'; Etheredge's 'learning government theory'
Imitation through evaluation and comparisons, learning from the best practices and benchmarking	Organizational	Policy improvement	Rose's 'lesson-drawing', Dolowitz and Marsh's 'policy transfer', Common's 'organizational learning'
Value-based approach			
Gradually through the change in policy beliefs based on knowledge and interaction	Interactions among individuals	Political conflict	Sabatier's 'advocacy coalition', Toens's 'Bayesian updating', Hall's 'social learning', Ansell and Gash's 'collaborative governance'
Knowledge advancement through social interaction	Interactions among individuals	Individual improvement, confirming preferences	Wenger's 'communities of practice', Toens's 'deliberation', Jacobs's 'mental models'

In the value-based approach the ultimate goal of policy learning is in the process itself. Amara et al. (2004) and Beyer (1997) note that in cases where decision-makers are not able to guide the process in a rational, instrumental way, knowledge gets used conceptually. Various ideas and concepts obtained through policy learning might inform decisions differently. The political use of expertise is practiced when decision makers rely on expert knowledge strategically to legitimize previously made policy decisions. The aim is to seek legitimacy, not to improve policy. According to several authors (Weiss and Bucuvalas 1980; Boswell 2008; Radaelli 2009) political learning can lead to three different usages of knowledge: 'strategic' (i.e. to increase control on the regulators), 'substantiating' (i.e. to support a position pro or against regulations), and 'symbolic' (i.e. to send signals or for blame-shifting purposes).

Learning is thus seen as a complex, multi-tiered phenomenon, which can affect both organizations and individuals. On one hand, it may occur through processes leading to instrumental change in programs and policies. On the other hand, decisions are often made through compromise, and expert knowledge may be used selectively and strategically (Hilgartner 2000; Maasen and Weingart 2005). Hence it is necessary to consider alternative perspectives synthesized above to analyse the OMC group dynamics in the EU research policy design.

### **The open method of coordination**

The OMC has been applied to European S&T policy since late 2003. The OMC works through country experts evaluating national research performance according to commonly agreed objectives and indicators. Some see it as a potentially useful approach (Van Vught 2010; McGuinness and O'Carroll 2010) that may contribute to the search for more effective policies through constant policy learning.

Critics, however, point to the lack of tangible results at the national level (De Elera 2006; Shaw and Laffan 2007) and argue that the OMC has been used as a tool to streamline national initiatives as opposed to explore policy alternatives (Borrás and Jacobsson 2004; Room 2005). A review of the studies produced up to the mid-2000s concluded that evidence on the relationship between learning and policy change is limited (Radaelli 2008). The design of the OMC, lack of participation from member states, and political and institutional complexities in the EU context are credited as posing barriers to learning to occur (Kröger 2009). Many scholars acknowledge that specific outcomes of policy learning are difficult to identify and practically impossible to quantify (McGuinness and O'Carroll 2010; Zeitlin 2011).

Borrás and Radaelli (2010) take a different perspective and note that the potential of the OMC for learning and innovation has been hindered by instruments based on targets, indicators and attempts to constantly monitor outcomes. In their view, the focus should shift away from measuring specific outcomes to examining conditions for cooperation and discovering good practices for future policy design. Zeitlin (2010) notes that the impact of mutual learning has led to the identification of common challenges and useful policy approaches at the EU level. Overall, the most promising indicator seems to be the fact that all of the involved actors want to continue with policy learning, as they find it a useful, valuable and flexible means to harness the benefits of cooperation among member states (Warleigh-Lack and Drachenberg 2011).

## Methodology

This study employed a case study strategy to examine the policy learning process in the EU's "Internationalization of S&T" policy initiative. The OMC's working group in this area provided a suitable setting for examining the potential of open coordination for several reasons. First, the EU strategy for international research collaboration involves complex and diverse national interests, making the dynamics and power hierarchies among participating country experts especially apparent. Second, the time frame between the first expert group meetings (7 meetings were held in 2007) and final policy recommendations (developed in 2009) provided an opportunity to analyze the impact of those recommendations. Third, the initiative was recently completed and the experts involved in it were likely to remain active and be reachable.

In this field, the EU Competitiveness Council has appointed the ERAC (European Research Area Committee) to oversee the implementation of the OMC. As a result, the OMC in research policy has been in operation through yearly cycles since 2003. During each cycle, ERAC agrees on a limited set of policy issues and creates specific working groups to discuss various topics such as public research spending, internationalization of R&D, effectiveness of fiscal measures stimulating R&D, and intellectual property rights, among others.<sup>1</sup> At the end of each cycle, working groups report back to ERAC, which draws conclusions and formulates policy recommendations.

This study draws on qualitative data on the OMC process. Such information is crucial in order to better understand and analyze this policy approach. Two main methods and data sources were employed. The first step involved content analysis of the OMC expert meeting reports and country-specific reports as examples of successful research cooperation initiatives. A content analysis (Weber 1996) was carried out, identifying several themes concerning the nature, focus, and targets of these strategic documents. Built upon the document analysis, the interview protocol was designed.

The second step involved conducting semi-structured telephone interviews with experts participating in the OMC Internationalization S&T working group. All participants were invited to participate, including representatives from the European Commission Directorate General Research (N = 6) and experts from 20 EU member and associated countries (N = 31) that were listed in the final report. Out of 31 country experts, 10 country representatives were willing to participate in the study and were interviewed in April, 2011. The interviewees represented the following countries (one expert from each country): Austria, Czech Republic, Germany, Italy, Lithuania, Netherlands, Norway, Portugal, Romania and Spain. Among the country experts there were 4 men and 6 women, most of them working as government officials (typically in Ministries of Higher Education and Research). In addition, two representatives from the European Commission DG Research who participated in the working groups were also interviewed. These interviews with key informants were used to investigate how policy learning takes place. The interviews, on average of 40-minutes long, were recorded and transcribed. These data were organized, coded, and analyzed. Categorical themes were identified through open coding, and patterns were established through axial coding and selective coding (Strauss 1987; Miles and Huberman 1994; Creswell 1998). This analysis resulted in the framework delineating the policy learning process in the working group as described below.

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<sup>1</sup> For detailed information see [http://ec.europa.eu/invest-in-research/coordination/coordination01\\_en.htm](http://ec.europa.eu/invest-in-research/coordination/coordination01_en.htm).

## Findings

Policy learning occurs at multiple levels: from individual country representatives; to the collective, shared learning of the working group; to the learning that occurs beyond the working group as a result of its activities, whether at the European Commission or in member states. To capture what happens at these different levels, the two main theoretical approaches identified above are needed. The value-based approach is useful to describe policy learning at the individual level. Group and organizational level learning features aspects of both the value based and the evidence based approaches. Furthermore, the data analysis shows that at each of these levels, there are diverse drivers for policy learning, policy learning mechanisms, and outcomes of policy learning processes (Table 3). Understanding policy learning in the OMC working group requires unpacking these three aspects of the process.

### Drivers for policy learning

Policy learning theories reviewed above suggest that learning is driven either by individual rationales or organizational rationales (governmental interests). Both perspectives were represented in the findings. The group was mostly composed of experts with similar professional backgrounds and experiences. Almost all were Ministry officials with significant experience in coordinating internationalization initiatives in their countries, and some also had experience at the European level. Both the EC representatives and the country experts described the OMC working group as being a constructive and most useful experience. The opportunity to gain professional knowledge that is useful for experts' career was a strong motivator. Professional interaction with European level experts

**Table 3** Policy learning in the OMC process: drivers, mechanisms and outcomes

Individual (expert level)	Group (OMC level)	Organizational (member states, EC level)
<b>Drivers for policy learning</b>		
Accountability; professionalism	Similar policy beliefs; similar professional background; conducive structure; cooperation to enhance European integration	Learning as a bottom up, voluntary and non-binding process
<b>Policy learning mechanisms</b>		
Active engagement; lesson-drawing; imitation; value acceptance; blocked learning; no-learning	Mapping the data; learning through participation in a group	Gradual change through accumulation of ideas and concepts
<b>Policy learning outcomes</b>		
New ideas for policy modifications; ideas for new policies; contribution of concepts and ideas; gather specific examples on programs	Monitor progress; collect and present policy approaches; deliver results to the EC	Establishment of a new European advisory body (SFIC); testing policy ideas; endorsing new cooperation programs (country); new ideas for policy modification (country); ideas for building a new policy (country)

increases one's reputation domestically, and new ideas gained through the learning process are also valuable in suggesting practical solutions for everyday policy problems.

Drivers for learning at the organizational level included anticipation to help one's country, expressed through experts' sense of accountability and professionalism. Most country representatives were government officials who had first hand access to national policy-making channels. When member states representatives report back on their work at the OMC, they serve as filters in selecting what ideas are worth disseminating in their home countries—as the value-based approach describes the distribution of policy ideas. Experts who felt that domestic S&T policy could be improved by gaining new knowledge made frequent assertions such as:

I was representing [country] and of course also the national interests play an important role here./.../You need to avoid the fragmentation of national efforts. And our main interest was getting new ideas from other countries to help [country].

As part of its mandate, the working group pursued policy learning that could contribute to enhanced policy coordination in Europe. First, the group needed to identify various policy approaches used by the member states. Several survey questionnaires were developed for collecting data. Second, the group had to analyse the data and agree on the examples of good practices. Third, the policy recommendations were needed to develop for the European Commission as well as other member states. The following comment explains the thrust of the group's policy agenda driving this learning effort:

[W]e felt that it was time for a more systematic approach [at] the EU level to avoid the duplicity and segmentation regarding relations with the Third Countries in R&D. Because there were some activities at the member states level and some things done by the European Commission, but nobody in fact knew what the other side was doing.

The structure of this working group facilitated knowledge sharing. The European Commission provided primarily administrative support with some input on data gathering (e.g. facilities for meetings, help with data analysis, coordinating meetings, and helping with legal advice). Several experts indicated that compared to the various other experiences they have previously had with OMC, this group was very productive and well functioning because of the dynamic and very experienced chair; others commented on the facilitation of EC staff. The relatively minor role played by EC staff seemed to contribute to the ownership of policy approaches suggested by the country experts. Illustrating these views, two participants explain:

The Chair of this group, [name], he is really a dynamic guy with lots of ideas. What was really important, he is working for an executive agency of the [country] government. /.../And lots of the ideas came from him, I must say. I think he had a very important role in the whole process.

When countries [experts] didn't reach an agreement, lets say, the Commission intervened and explained why we should consider one side or another side, [why] to make this decision or another decision. And ... the Commission as a catalyzer, is providing this neutral spirit in the meetings.

Reflecting on the nature of the OMC process, as a bottom-up and non-binding approach, participants in the working group supported such structure. There is considerable debate in the literature on the merits of this approach; some see great potential (e.g. Van Vught

2010), while others strongly criticize its ability to generate policy learning. From the viewpoint of participants, the benefits of open coordination are worth the effort:

The strength is that it [OMC process] is really driven by the interests of the member states, the topics are proposed by the member states. Once they [the decision] are accepted, they are really widely accepted by quite a number of member states.

In conclusion, open coordination involves learning processes at the individual, group and organizational levels. The drivers for policy learning are essentially grounded in the individual value-based perspective. At the individual level, policy beliefs shape the learning experience. At the group level, shared ideas and assumptions help define the policy agenda. At the organizational level, accepted policy positions and political agendas influence the ultimate interest of policy makers in the ideas produced in the OMC.

### Policy learning mechanisms

Learning can take place in several ways, and most of these processes occur cognitively. By asking participants to describe their perceptions on learning experience, we were able to identify several potential mechanisms of learning—active engagement, lesson drawing, imitation, mapping and value acceptance.

The most frequent learning mechanism, reported by six experts, was *active engagement*, where individual participation through knowledge sharing led to learning. The expert discussions involved a significant amount of preparation (collecting and synthesizing data, preparing presentations, providing feedback based on their country-specific knowledge). Learning involved not only hearing what others were doing but also becoming more knowledgeable of one's country's policy approach in comparative perspective:

We made presentations on the national policies and national instruments in the research cooperation area, and that formed the basis for our discussion. We discussed the similarities and differences regarding the approach to internationalization of research. /.../I think it was very useful to benchmark what we are doing in [country] and it is very useful to learn about what other countries are doing in this area.

Situations where active engagement is encouraged seem to serve as useful learning experience. One informant recalls:

I was very active in criticizing, providing analytical criticism. Because I know very reasonably the situation in Brazil ... we are cooperating with three funding agencies in Brazil. .... And also I was very active in proposing modifications to the several versions of the final document. /.../Personally.... it was a very rich experience.

Participation in the group discussions was seen as a key mechanism in helping experts to share a variety of policy ideas, develop a shared understanding of the issues and propose policy recommendations together as a group.

*Lesson drawing*, a strategic approach to gain information on specific policy instruments, is a more focused policy learning mechanism. In such cases, a particular policy area was in focus from the beginning, possibly something encouraged by one's government. In lesson drawing experts actively collected information to take back to their home countries. Knowledge was related to country's particular needs and regarded as valuable in terms of practical use. Two informants made references to the intent of applying new knowledge in their countries:

We aimed to learn what programs others have, how they make joint agreements. That was interesting and something that we will apply in the future.

Three references were made regarding intentions to *imitate* specific policy initiatives drawing on the examples of other countries. In this case members made references to the need to take action and replicate policies based upon the new knowledge gained in the group. Learning about a particular topic was not planned in advance or encouraged by the government as in lesson-drawing but was inspired by experts' own learning experience:

India should be one of our target countries for us, because it was one of the target countries of this working group and others have benefitted from it.

In three cases we observed *value acceptance/diffusion* where participants acknowledged the expertise of others and accepted their input. However, no references were made to the situations where specific policy beliefs were entirely changed as a result of the knowledge exchange. Examples of value acceptance include the following:

It was more difficult for [country] to be visible because we do not have any recent policies in this area, but we did not disagree on the good examples of other countries, which are more advanced.

Like myself, some other members of the group came from the policy department within the Ministries, and those experts that supported us had a lot of expertise on more technical issues. So there was a kind of interaction between real experts in this field and people who are engaged in the policy side of the work at the Ministries who didn't know all the details of this work. I think it was a useful interaction and we learned a lot.

Not all participants were actively involved in the policy learning process as noted by several informants. In those situations a no-learning scenario is very likely. According to Hecló (1974) 'non-learning' occurs when policy-makers may be unwilling or unable to adapt to new information. They may be satisfied with the current situation, or political circumstances may not allow policy change. In a similar vein, there were several occasions where experts expressed blocked learning (Rose 1991) recognizing individual learning but indicating lack of potential for policy change in the larger organization (e.g. government, Ministry). These observations are discussed in more details in the following section. Through active participation, lesson drawing, imitation and value diffusion, experts gained knowledge on ideas, programs, and processes.

In addition, the group employed information *mapping*, which served as another mechanism for policy learning. Information was gathered and based on the analysis, the group arrived at an overall understanding of where countries stand in terms of research cooperation. Information mapping in the group potentially contributes to individuals changing their views and perceiving new policy problems to be tackled. For instance:

The impact of mapping in this learning exercise can influence policy-making and decision-making. I think some countries were good [at] this and they took the results of mapping and put it into learning and practice.

As demonstrated above there are several mechanisms for policy learning at the individual, group or organizational level. The group discussions served as a setting for gradual change of views or evoking completely new ideas ("sometimes your ideas come through the knowledge of others", as one participant asserted). The learning mechanisms identified

above help to explain how learning might take place, suggesting potential ways to enhance policy learning in open coordination settings. Active group participation with the focus on specific tasks might provide the most useful foundation for learning. It is the full involvement in the process that helps trigger information sharing and learning.

### Outcomes of the policy learning

Our research results are consistent with the body of literature indicating that policy change is a gradual process that happens over time as a result of knowledge accumulation (Weiss 1977; Sabatier 1986). Very few examples of actual policy change at the national level were presented. Rather, experts tended to learn new ideas and concepts that were not tied to a particular country-specific policy process.

The most noteworthy outcome of the actual policy change relates to instrumental use of knowledge. Namely, as one of its main recommendations, a European advisory body with political power to better coordinate research cooperation was proposed. This idea led to the formation of the Strategic Forum of International Cooperation in S&T in 2008. The Forum is currently composed of high-level political representatives of the member states and the European Commission. It aims at facilitating further development, implementation, and monitoring of the international dimension of European Research Area for joint research initiatives with partners outside Europe.

In some cases there were indications of political use of information, when evidence was used to support previously made political decisions. Expert endorsement added more weight to the policy choices, according to informants. For example, an interviewee noted that a political decision to open bilateral cooperation with India was corroborated by information arising from the expert consultations in the OMC group, which validated that course of action.

The conceptual use of the group's expert advice was observed when ideas circulated in the group work were used to influence policy change at the national level. For example, two experts reported on disseminating ideas from the OMC discussions that resulted in actual policy changes. One mentioned the establishment of a Research Council focusing on supporting joint research programs among scientists. Another indicated crafting a national internationalization strategy for research cooperation where knowledge from the expert group was used.

Several experts referred to the situations where their learning experience did not result in any noticeable change at the domestic policymaking. Information was disseminated to decision-makers within their Ministries to no effect. Only the hope that ideas could potentially influence the gradual change of policies in the future was expressed:

The challenges are related to the big question of what's happening with the results from this OMC work because there is no guarantee actually, that it will be taken up by the highest policy level

Overall, the following findings arise related to the outcomes of the working group. The most visible outcome involves the instrumental use of expert knowledge where a European level organizational change—the formation of the Strategic Forum—has occurred as a result of the expert group's work. More commonly, expert knowledge, ideas and concepts entered the policy process more indirectly. In some cases expert contributions might involve the political use of knowledge where mutually generated ideas support decisions about to be made at the national level. Sometimes, participants recognized great personal learning experiences but witnessed indirect or minimal influence on policy decisions.

## Conclusion and implications

This study demonstrates how policy learning occurs in an open coordination setting and influences actors in research policy. Further, the study indicates how carefully designed social interactions emphasizing knowledge sharing can influence policy change indirectly through the dissemination of ideas, policy preferences, and orientations. Three main findings emerged from the data.

First, in the OMC setting, social interactions driven by individual interests underlie policy learning. Built on voluntary interactions to support knowledge exchange, the working groups are part of a bottom-up and non-binding process that allows the development of shared views, leading to gradual ownership of the decisions. The opportunity to meet other experts and share knowledge are important aspects of the process for national representatives. Most experts were government officials, and the knowledge obtained in the working groups was relevant to their work. This interest on their part met with the goals of the European Commission to generate and stimulate a transnational agenda. Different conditions would of course influence the nature of the process. For example, in conditions of intense political pressure, learning can turn into negotiations and bargaining without any real knowledge sharing (Elgström and Jönsson 2011). The knowledge exchange in the working groups that satisfied the professional interests of country experts is seen as a mechanism to induce policy coordination across member states. It also helps EC representatives gather support for a shared S&T internationalization agenda.

Second, individual engagement and ongoing interaction among working group participants enhance policy learning. As noted by Hartlapp (2009) learning arises out of processes of communication and open argumentation in a problem-solving environment. The OMC activities that required active engagement (e.g. presentations, mapping policy approaches, problem-solving tasks) triggered debates about the rationales behind certain policy perspectives and fostered shared understandings. The findings indicate that some mechanisms support instrumental learning (e.g. emulation, lesson-drawing, mapping) where knowledge is supposed to support direct policy change. The instrumental focus is evident also at the group level (e.g. mapping) when specific results are expected. Other learning mechanisms support conceptual learning (e.g. active engagement, blocked learning) and might contribute to policy making indirectly. In those cases learning has taken place at the individual level, but does not necessarily result in any immediate policy changes. In a few cases we also observed references to the acceptance of different values, which emphasizes openness, recognition and respect towards knowledge and ideas that were previously not considered. These findings also support Borrás and Radaelli's (2010) argument that the OMC initiative should be evaluated not in terms of outcome-based indicators but in stimulating policy debate and recognition of sometimes contradicting viewpoints.

Third, the impacts of policy learning in the open coordination approach must be understood in terms of circulating ideas, knowledge and concepts that have the potential to enter policy process indirectly. The findings reveal that the OMC initiative has contributed to the internationalization of S&T fundamentally by reshaping policy networks and securing high level political support to the internationalization agenda, as demonstrated by the formation of the new advisory body Strategic Forum of International Cooperation (SFIC). The work of SFIC has helped gathering support for placing the internationalization of S&T in the political agenda. It has helped integrate several European policy statements such as Innovation Union Communication (2010) and the Europe 2020 Strategy into the member-states S&T plans. These findings are consistent with previous studies that

emphasize the potential of the OMC to enhance European research policy (Borrás and Jacobsson 2004; McGuinness and O'Carroll 2010).

Overall, policy learning plays a crucial role in building shared values and ideas that translate into gradual shifts in policies. Policy makers' mental models can powerfully shape their policy preferences, in turn leading to policy change (Jacobs 2009). As seen above, policy learning can influence mental models. In order for policy learning to occur, information needs to be relevant to individuals and trigger connections with their prior knowledge. These conditions were clearly represented in the OMC process— participants were professional experts in the area of internationalization, sharing policy-relevant knowledge and gaining new information and perspectives on the topic. Hertin et al. (2004) and Lundvall (2009) argue that policy initiatives that focus on knowledge-building (e.g. sharing of best practices such as in the OMC) is more likely to create long-lasting and stable policy results. Therefore, open coordination initiatives have the potential to continue to drive the European internationalization agenda forward.

The overall aim for the OMC policy learning process has been to strengthen research policy coordination in Europe. As noted by Gornitzka (2005), the OMC can play out differently across policy areas. Our study demonstrates that policy learning in the area of internationalization of S&T is a long-term endeavour that occurs primarily through individual learning with only secondary implications at the country or European levels. Nevertheless, OMC participants have the potential to operate as policy entrepreneurs advocating for certain policy ideas that have been formed in the group. The European research and innovation policy agenda called 'Innovation Union' still promotes policy learning (European Commission 2010). The principle of open coordination remains relevant, as member states are expected to identify their specific strengths, weaknesses and opportunities in relation to the EU and in a wider context. The need to build on strengths, address weaknesses and to coordinate policies in an efficient, effective and accountable manner is emphasized—a process essentially focusing on policy learning. Thus, this policy approach continues to be central to enhancing S&T policy in the EU, making related research on policy learning exercises especially necessary and relevant.

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