Understanding European Union Science Diplomacy*

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Abstract
Science diplomacy represents a relatively novel field of EU external action. This contribution provides a better understanding of the under-researched development of this policy domain, asking how and why the EU has extended the scope of its external activities in the scientific area. To answer these questions, it conducts an analysis of EU policy-makers’ discourses on external science policies inspired by role theory. It finds that EU role conceptions in this domain take the forms of ‘science for diplomacy’ or ‘diplomacy for science’, and that they correspond either to an image of normative or market power Europe. These findings are confirmed by a study of the EU’s recent external science policies. The article argues that the ambiguity of rationales invoked for introducing a genuine science diplomacy in the EU helps to appeal to different constituencies. This, in turn, enhances the Union’s chances for successfully expanding the scope of its activities.

Keywords: research and development; foreign policy; science diplomacy; Normative Power Europe; Market Power Europe

Introduction
For a number of years, the European Union (EU) has attempted to expand its rather hands-on international science and technological co-operation activities, which have been the external face of its internal funding policies around the framework programme for research, to a genuine EU ‘science diplomacy’ (European Commission, 2012b; Prange-Gstöhl, 2010). A generally accepted definition identifies three dimensions of such science diplomacy: (i) science in diplomacy (how science can inform foreign policy objectives), (ii) diplomacy for science (how diplomatic activities can facilitate international science co-operation), and (iii) science for diplomacy (using science to improve international relations) (Royal Society, 2010: v--vi). While the first dimension points to a science-foreign policy nexus in areas where scientific insights shape foreign policy (such as environmental diplomacy), the second dimension embodies primarily the classical understanding of science and technological (S&T) co-operation, and the third dimension points to a use of science in foreign policy contexts ‘as an effective agent to manage conflicts, improve global understanding, lay grounds for mutual respect and contribute to capacity-building’ (Flink and Schreiterer, 2010, p. 665). It is the latter two dimensions of its science diplomacy that the EU has arguably most vigorously attempted to reinforce.

Although the EU has been engaged in international S&T co-operation since the launch of the First Framework Programme in 1983, and a limited legal competence was introduced with the 1987 Single European Act (Art. 130n), ‘an international EU research policy or strategy hardly existed’ until the 2008 Commission ‘Strategic European

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Framework for International S&T Cooperation’, providing a first ‘long-term structure to the EU’s international S&T policies’ (Prange-Gstöhl, 2010, p. 13). In 2012, the ‘Strategic Approach’ to international co-operation in research and innovation reinforced this structure, identifying a range of EU external science policy tools such as S&T Cooperation Agreements with third countries and engagement with international organizations (European Commission, 2012b). Especially since 2014, the EU has further promoted its external science-related activities: international co-operation represents a cross-cutting priority of the €79 billion Horizon 2020 programme (2014–20), and Research Commissioner Moedas has repeatedly expressed his desire ‘to see the EU play an increasingly active and visible role in international science diplomacy’ (2016). ‘Open to the world’ (‘The EU strategy for global Research and Innovation cooperation and science diplomacy’) is then also one of the three goals set by the Commissioner (European Commission, 2016, pp. 6–7, 64). Science and research as subjects of diplomacy are also referred to multiple times in the EU’s 2016 Global Strategy (EEAS, 2016). The apparently growing salience of EU science diplomacy might confirm Prange-Gstöhl’s supposition (2010, p. 227) that an evolution from an ‘external dimension of the ERA’ (European Research Area) to an ‘EU external S&T policy’ is taking place.

This article strives to better understand this recent and under-researched development, asking how and why the Union seeks to extend the scope of its external activities in the ever more important science domain. Examining the external aspects of this originally internal policy is an increasingly pertinent subject not only because – under the 2014–20 Multiannual Financial Framework – science represents the EU’s third biggest spending area after cohesion and agricultural policy, but also because its budgetary endowment illustrates policy-makers’ understanding of science and innovation as a major catalyst of ‘growth and jobs’ under the Europe 2020 strategy. To search for possible motivations for the external expansion of its activities, it starts with a look into the emergent literature on science diplomacy and links this to the EU external relations literature to ultimately embed the analysis into the major contemporary debate about whether the EU can best be considered as a market or a normative power.

Also beyond the EU context, the area of science diplomacy represents a rather recent field of activity (Flink and Schreiterer, 2010). Where international science co-operation was already pursued by several nation-states during the Cold War (see Lord and Turekian, 2007; Wang, 2014), countries such as France, Germany, Japan, the United Kingdom and the United States have only recently stepped up their engagements in science diplomacy (for an overview of national science diplomacies, see Flink and Schreiterer, 2010), sparking some interest in the domain among International Relations (IR) scholars. One of the few existing studies concludes that the development of science diplomacy is generally driven by two rationales: competitiveness concerns in the context of globalization and desires to foster co-operation (Flink and Schreiterer, 2010). A country’s choice for science diplomacy can thus be grounded in an interest-driven motivation to extend the reach of its science-related activities beyond national boundaries so as to compete on the global market for knowledge and talents or on the wish to exploit the potential of science by integrating it into foreign policy to enhance co-operation with third parties.

When searching for the EU’s motivations for developing its science diplomacy, the insights from the scarce literature on science diplomacy on the competitiveness/co-
operation dichotomy suggests itself as a reasonable point of departure. It resonates with – and can be linked to – the prominent debate in the area of EU external relations studies about the nature of the EU’s power. This ‘EU-as-power’ debate has occupied a significant place in EU studies ever since Duchêne (1972) suggested that the EU could best be conceived of as a ‘civilian power’. It revolved around various conceptualizations of the EU with different interpretations of the motivations for and key characteristics of its external action. The latest round of this debate involves the concepts of normative and market power Europe. For Manners (2002, p. 242), the EU may best be considered a ‘normative power’ (NPE) and its ‘central component (…) is that it exists as being different to pre-existing political forms, and that this particular difference predisposes it to act in a normative way’ vis-à-vis the external world. The EU’s normative foundations are embodied in five core norms (peace, liberty, democracy, rule of law, human rights) and four minor norms (social solidarity, anti-discrimination, sustainable development, good governance). From this perspective, EU external science activities would be motivated by the desire to promote its norms and characterized by a focus on norms in its attempts at co-operating with third countries. In opposition to Manners, Damro (2012) introduced the concept of ‘market power Europe’ (MPE), perceiving the EU as essentially a large regulated market that wants other actors to adhere to levels of regulation similar to its own or to behave in ways that generally satisfy EU policies and regulations. From this perspective, EU external action in the science domain would be motivated by a desire to defend its interests and promote existing EU practices, policies and regulations globally. As a matter of fact, the EU is in the process of developing the European Research Area, a ‘unified research area open to the world based on the internal market, in which researchers, scientific knowledge and technology circulate freely’ (European Commission, 2012a, p. 3). An objective of EU science diplomacy could therefore be to extend the reach of this ‘science market’ because through ERA ‘the Union and its Member States strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges’ (European Commission, 2012a, p. 3).

Both NPE and MPE can therefore help to account for how and why EU policy-makers strive to expand the scope of EU external science policies. Vice-versa, by examining the case of science diplomacy a meaningful contribution can be made to the NPE/MPE debate. Where this debate has quite regularly been characterized by proponents of one or the other concept examining cases through which the claims of their preferred ‘EU-as-power’ image may best be proven (see, for instance, JEPP, 2015; Whitman, 2011), analyses of cases not readily falling into one or the other category have so far been scarce. Science diplomacy, as a rather recent phenomenon that prima facie does not suggest itself as a clearly norm- or interest-driven policy, represents such a ‘hard case’.

If this article thus uses NPE and MPE as conceptual starting points for its investigation into the how and why of the EU’s policy expansion in the area of science diplomacy, also with the intention of contributing to the salient ‘EU-as-power’ debate, it makes the deliberate choice to concentrate on norms and interests as EU policy-makers’ motivating factors. By proceeding in this way, it pursues two main purposes: besides developing an

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1 The choice to address what could ultimately be regarded as a classical case of deepening EU integration in this way – and not with recourse to EU integration theories – is justified by the significance of the ‘EU-as-power’ debate and the focus on policy-makers’ motivations in an area of potentially lower political salience (and thus not liberal intergovernmentalists’ ‘high politics’) and of more limited longevity.
empirical understanding of this evolving policy field that clarifies the motivations for and conceptualizations of science diplomacy as diplomacy for science or science for diplomacy, it employs science diplomacy as a case for understanding whether the EU relies on interest-based utilitarianism or normative motives for expanding the scope of its external activities. This allows for a necessary nuancing of the debate opposing interests and a logic of instrumentalism (MPE) and norms and a logic of appropriateness (NPE) as sources and means of EU external action (Lavenex, 2014; Youngs, 2004). The article finds that NPE and MPE (and EU policy-makers’ words and actions captured by these concepts) are not mutually exclusive, but can coexist, overlap and interact. It argues that the ambiguity of rationales invoked for promoting science diplomacy in an EU context actually helps to appeal to different constituencies. This, in turn, enhances the Union’s chances for expanding the scope of its activities.

The article proceeds as follows: section I introduces an analytical framework that defines science diplomacy and relates the NPE and MPE concepts to a set of nine role conceptions that the EU holds in external science policies. To explain these role conceptions, section II reports the results of a discourse analysis on the reasons policy-makers from the EU institutions invoke to motivate the expanding scope of their activities in this domain. To validate the findings and assess the extent of congruence between the EU’s words and deeds, section III probes into the Union’s external science policies. The conclusion synthesizes the findings and expands on their broader implications.

I. Analytical Framework

The evolution of science diplomacy can be traced both in EU policy-makers’ rhetoric and practice. Following a conceptual clarification of what science diplomacy entails, this section introduces an analytical framework that allows for examining the EU’s discourse, understood here as the framework through which policy-makers in the EU, that is, representatives of the EU’s main institutions – the European Commission, the Council of the EU and the European Parliament – provide justifications for engaging in science diplomacy, before probing into its action.

Defining Science Diplomacy

For some years, the concept of science diplomacy has gained ground in policy-makers’ discourses and practice. Despite a slowly growing interest within IR, it remains an underexplored and ‘fluid concept’ (Royal Society, 2010, p. v). To define it, it has become customary to refer to the above-mentioned, three-dimensional conceptualization by the Royal Society and the American Association for the Advancement of Science that distinguishes between science in diplomacy, diplomacy for science and science for diplomacy (Royal Society, 2010). Although all three dimensions refer to the science–foreign policy nexus, science in diplomacy touches on the more general question of to what extent policies should be informed by scientific knowledge. This issue is not specific to foreign policy, but plays a role in numerous policy-making processes. By contrast, the other two dimensions, which this contribution focuses on, concern exclusively the relationship between science as subject of policies and foreign policy: ‘Diplomacy for Science [implies] formal diplomatic means to achieve scientific goals’ in the broader sense of
the term (including innovation) (Wang, 2013, p. 4). This corresponds most closely to what has traditionally been defined as ‘science and technological co-operation’. From this perspective, science co-operation to promote science-related objectives is an end in itself. By contrast, science becomes a means to an end when speaking about ‘Science for Diplomacy (…): international engagement through science to develop, sustain, or enhance relationships between countries’ (Wang, 2013, p. 4). This understanding is about using science as a vehicle for attaining foreign policy objectives. While striving to refine the understanding of these two dimensions of science diplomacy by the EU, the analysis initially employs the terms ‘science diplomacy’, ‘external science policies’ and the traditional EU jargon ‘international S&T co-operation’ interchangeably.

**EU Role Conceptions in External Science Policies**

Defined as such, science diplomacy is subjected to a discourse analysis to understand which sorts of reasons EU policy-makers invoke for its expansion. To classify these reasons as expressions of discourse corresponding to either NPE or MPE, the article draws on role theory as originally developed by Holsti (1970). Role theory helps to develop a more nuanced investigation into the various functions the EU sees for itself in the science diplomacy domain. Its role conceptions can subsequently be classified according to their underlying logic of action, whether driven by norms or interests. This intermediate step provides an innovative way of operationalizing the NPE and MPE concepts through discourse-analytical tools.

Holsti argued that a ‘national role conception includes the policymakers’ own definitions of the general (…) actions suitable to their state, and of the functions, if any, their state should perform on a continuing basis in the international system or in subordinate regional systems’ (1970, p. 246). Role conceptions become thus policymakers’ “image” of the appropriate orientations or functions of their state toward, or in, the external environment’ (Holsti, 1970, p. 246). Although they do not ‘dictate every aspect of foreign policy behavior’, ‘role performance results from, or is consistent with, policymakers’ conceptions of their nation’s orientations and tasks in the international system or (…) regional systems’ (Holsti, 1970, pp. 298, 245). While originally restricted to national roles, role theory has been applied to other actors performing foreign policy tasks, such as the EU (Aggestam, 2006; Elgström and Smith, 2006). It therefore provides an adequate theoretical starting point for extracting EU self-perceptions of its science diplomacy, while also furnishing the necessary methodological bases for a discourse analysis.

In his study, Holsti presented a taxonomy of 17 role conceptions. Out of these, and in an effort at identifying those most suited for a contemporary EU context, 13 possible EU role conceptions were initially retained. At the same time, the discourse analysis remained open to reformulations and the emergence of other role conceptions. Taking inspiration from Holsti’s methodology, at the most basic level, ‘the research procedure involved reading a large number of sources (…) and noting themes which gave evidence

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2 Bridge, balancer, defender of the peace, developer, example, faithful ally, internal development, isolate, mediator-integrator, protectee, regional leader, regional protector, regional-subsystem collaborator. Four role conceptions were excluded from the analysis because they were closely related to the bipolar Cold War context (for example, ‘anti-imperialist agent’).
of the presence of (...) role conceptions’ (Holsti, 1970, p. 258). In terms of these sources, the analysis relied on 27 key strategic documents and speeches relating to EU external science policies and issued between the end of the Cold War in 1990 and 2015. These documents were selected on the basis of a broad mapping of Commission, Council and European Parliament documents pertaining to external science policy and represent those publicly available strategies and papers, or speeches of high-level EU representatives, in which evidence of external science policy-related role conceptions were found. These documents fall into four categories:

- **General science-related strategies**: Council Conclusions (Council, 2008b, 2013), Commission Communications (European Commission, 1990, 1995, 2008, 2012b, 2014) and Commissioner’s speeches explicitly dealing with international S&T co-operation or science diplomacy (Geoghegan-Quinn, 2013; Moedas, 2015a, 2015b);
- **Country- or region-specific strategies containing references to science**: Commission Communications (European Commission 1996, 1997) and speeches referring to co-operation with specific countries/regions (Geoghegan-Quinn, 2010, 2012);
- **ERA-related strategies**: ERA-related documents (Council, 2008a, 2012; European Commission, 2000, 2007) including on its international dimension (European Commission, 2001; Potocnik 2008a);
- **Specific strategies with a bearing for EU external science policies**: Council Conclusions (Council, 2010) and speeches related to knowledge (Potocnik, 2008b, 2008c), the globalization of R&D (Potocnik, 2005), research (Busquin, 2002) or to co-operation with specific regions (Barroso, 2011; Schulz, 2014) when containing references to science.

Starting from the 13 role conceptions derived from Holsti’s study, these documents were analyzed in search of (i) predefined key terms corresponding to these conceptions, and (ii) general motivations given for EU engagement in science diplomacy, which were gradually coded to arrive at the role conceptions discussed in section II. Building on Holstí’s methodology entailed engaging in a discourse analysis (Wodak, 2008) characterized by an iterative process of going back and forth between Holstí’s and newly emerging role conceptions and the empirical evidence. In this process, the coding of these conceptions was gradually refined, evidence was found for some of Holstí’s conceptions, and new role conceptions were robustly defined and delimited. The analysis yielded nine role conceptions expressed by the EU in the context of its external science policies. Together with evidence of two of Holstí’s original conceptions (developer; mediator-integrator), it generated two reformulated conceptions3 (contributor to peace, prosperity, stability and security; international collaborator for scientific or other purposes) and five new role conceptions (competitor; contributor to EU policies, objectives and interests; knowledge-based actor; partner in mutually beneficial co-operation; partner in tackling global challenges).

Subsequently, the resulting set of role conceptions was classified according to whether they correspond to (i) an image of the EU as NPE or MPE, as outlined

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3 Evidence was also found for a ‘European stabilizer’ role conception (stabilizing regional order), primarily for the 1990s. Due to its historical character, this conception is not further developed here.
below, and (ii) a definition of science for diplomacy or diplomacy for science (see Figure 1 below).

Relating EU role conceptions to MPE and NPE

To classify the nine role conceptions according to whether they correspond to the conceptualization of the EU as NPE or MPE, Damro’s observation (2012, p. 697) that ‘ultimately, the best way to evaluate NPE versus MPE may be to determine whether the EU is more likely to influence the behaviour of others through the projection of its (...) norms or the externalization of its market-related policies and regulatory measures’ provides the main starting point. Do these role conceptions correspond to a logic of action associated with norms and appropriateness (NPE) or to self-interested instrumentalism (MPE)? Four role conceptions were found to correspond to the notion of NPE, the remaining five corresponded to MPE.

The four role conceptions corresponding to the notion of NPE were found to be expressions of the EU referring to the norms that Manners argues lie at the heart of the EU’s identity as evidenced by its key principles and objectives developed through treaties and policies (acquis communautaire et politique). The role conceptions of contributor to the peace, prosperity, stability and security (using international science co-operation to achieve these aims) and mediator-integrator (helping adversaries to reconcile or improve their dialogue, opening alternative channels of communication when other forms of diplomacy have failed) corresponded to Manners’ core norms of peace and sustainable development. The role conception of partner in tackling global challenges (committed to addressing joint societal, political, demographic and environmental problems) fit above all Manners’ minor norm of sustainable development. Finally, the role conception of developer (assisting countries in their socio-economic, scientific and technological development) evidenced the EU’s identity as a promoter of all its key norms.

Figure 1: Classifying EU Role Conceptions on Science Diplomacy.
Five role conceptions emerging from this analysis are considered as expressions of MPE. According to Damro (2012, p. 697), ‘the EU’s identity is not a particular set of collective norms but rather a comparatively large regulated market’. EU external action, from an MPE perspective, is motivated by a desire to defend EU interests and promote its practices, policies and regulations globally. Although science is primarily a distributive, not a regulatory policy in the EU context, it represents an area in which the Union is – especially based on the ERA as internal market for knowledge and research with inter alia rules on the free movement of researchers, but also with the extensive rulebook that comes with the Framework Programme – clearly (desirous of) shaping rules and practices not only inside the Union, but also of projecting these externally to whoever wants to do science-related business with it (such as participate in EU-funded projects). For these reasons, it can be argued that the EU’s ‘science market’ identity lies at the heart of the following role conceptions: competitor (strengthening the EU’s competitiveness, facilitating international trade, increasing the Union’s market share through science); knowledge-based actor (pursuing scientific goals such as strengthening the EU’s S&T capabilities, extending the frontiers of S&T knowledge or accessing S&T knowledge/capacities outside Europe); and partner of mutually beneficial co-operation (pursuing such co-operation for instance to access other’s research efforts). Moreover, the aims of externalizing market-related policies and practices or strengthening the EU’s market basis through science are expressed via the role conception international collaborator for scientific or other purposes. In a broader sense, the emphasis of MPE on material elements determining the EU’s identity and behaviour in international relations resonates with a logic of consequences, according to which ‘actors in the international system (…) seek to develop policies that allow them to maximize their own interest’ (Smith and Sjursen, 2004, p. 127). A final role conception referring to science based on such self-interested instrumentalism was detected: contributor to EU policies, objectives and interests.

To validate these findings and verify if EU role performance is consistent with these role conceptions (Holsti, 1970, p. 245), the discourse analysis is contrasted with a brief analysis of EU action in section III.

II. Policy-makers’ Motivations for an EU Science Diplomacy

This section presents in more detail the evidence found for the nine role conceptions that emerged from the analysis of the EU’s external science policies discourse. It discusses their relative importance and classifies them. Figure 1 provides an overview of these role conceptions and how they correspond to an image of the EU as NPE or MPE. It also shows whether these role conceptions correspond more closely to the ‘science for diplomacy’ or ‘diplomacy for science’ dimensions of science diplomacy.

Role Conceptions Corresponding to a NPE Logic

Role conceptions that correspond to NPE can above all be found in general strategies. In specific strategies, the EU refers to norms, and uses corresponding role conceptions, mostly when it speaks about its engagement on science in the context of international organizations, especially multilateral fora (such as the OECD), with developing countries,
and specifically the Middle East. Evidence of the role conceptions developer and partner in tackling global challenges predominates. The former was referred to 44 times, the latter 35 times in the majority of documents from 1990 until 2015. Less evidence was found of the role conceptions contributor to peace, prosperity, stability and security (11 instances) and mediator-integrator (13 instances), which appear in documents from the 2000s onwards. The role conceptions are discussed in alphabetical order.

Contributor to Peace, Prosperity, Stability and Security: This role conception is inspired by Holsti’s defender of the peace conception indicating ‘a universal commitment to defend against any aggression or threat to peace’ (1970, p. 272), but has been expanded to also include prosperity, stability and security. EU discourse regularly mentions external science activities as means for attaining these interconnected objectives (European Commission, 2001, p. 9, 2008, p. 2; Moedas, 2015a, 2015b), either in general strategies or in relation to specific partners. The following extract stands emblematically for a plethora of similar statements:

If it’s a more peaceful, more prosperous world we wish to leave behind, the EU approach to diplomacy must use the elevated language of science for its remarkable uniting power (Moedas, 2015b).

Developer: This role conception refers to ‘a special duty or obligation to assist underdeveloped countries’ (Holsti, 1970, p. 266). Evidence of this role conception can be found in the EU’s declared aim to use external science policies as a means to support the development of three groups of countries: developing, emerging and enlargement/ neighbourhood countries.

First, EU policy-makers declare assisting developing countries in their socio-economic development both from a S&T perspective – such as enhancing their research and innovation capacities (European Commission, 1990, p. 10, 2008, p. 8; Geoghegan-Quinn, 2013, p. 3), strengthening their basic research (European Commission, 1990, p. 8), narrowing the technological gap (European Commission, 1997, p. 11, 2008, p. 9) – and in broader development terms, for example contributing to their sustainable development (European Commission, 1995, p. 20, 2012b, p. 6). A quote from a speech by Commissioner Potočnik (2005, p. 6) illustrates this objective: ‘we need to enhance S&T co-operation with the Developing Countries. It is now largely recognized that the development of S&T and innovation is one of the essential engines of socio-economic growth and sustainable development in the Developing Countries’.

Second, in its relations with emerging economies, development objectives are explicitly mentioned, but combined with greater concern for competitiveness, pointing to a certain tension between a norms- and an interest-based EU motivation (see European Commission, 1990, p. 9, 1995, p. 21):

the proactive deployment of Europe’s S&T strength in these countries could represent a powerful mechanism for achieving a substantial increase in the Union’s market share. It will also contribute to the socio-economic development of the region by helping the partner countries to (...) learn from the experiences of the Union (European Commission, 1996, p. 3).
More recent documents contain a greater focus on emerging economies as competitors (Geoghegan-Quinn, 2013, p. 3).

Third, and still in an effort to promote third countries’ development, EU policy-makers have traditionally sought to integrate enlargement/neighbourhood countries into the ERA (European Commission, 2012b, p. 6; Geoghegan-Quinn, 2013, p. 3). The link between enhanced research capacity, the integration into the European scientific community/ERA and the preparation for accession was stressed regarding applicants (European Commission, 2000, p. 18), the Central European states (European Commission, 1995, p. 16), and has more recently been revived regarding the Western Balkans (Potocnik, 2008b, p. 6).

Mediator-Integrator: The mediator-integrator role conception corresponds to self-perceptions of a task to help adversaries reconcile their differences (Holsti, 1970, p. 265). This role conception captures references to science co-operation as a means to help improve dialogue between certain countries (European Commission, 2001, p. 3), to open channels of communication or to keep such channels open when other measures have failed (Moedas, 2015a, 2015b).

Apart from general statements, this role conception could increasingly be detected in recent statements (such as European Commission, 2014; Moedas, 2015b), especially with regard to the Middle East:

All Middle Eastern countries are encouraged (…) to participate in Horizon 2020. Horizon 2020 also supports (…) the recently launched Middle East Research and Innovation Dialogue project (MERID), which employs research, science and innovation as channels for intercultural dialogue, understanding and reconciliation (Moedas, 2015a).

Partner in Tackling Global Challenges: This role conception indicates a commitment to addressing major common global societal, political, demographic and environmental challenges, generally in pursuit of global public goods. Evidence of this role conception was found both in general statements on international science co-operation (Council, 2013, pp. 2–3, 2008b, p. 1; European Commission, 2012b, p. 4, 2008, p. 4, 2007, p. 3; Geoghegan-Quinn, 2013, pp. 3–4, 2012, p. 2; Moedas, 2015b) and in country/region-specific statements, for example on emerging and industrialized countries (European Commission, 2012b, p. 6, 2008, p. 8, 1995, p. 19), Russia (European Commission, 2001, p. 9), developing countries (European Commission, 2012b, p. 6), the Middle East (Moedas, 2015a), New Zealand (Barroso, 2011, p. 3), the US (Geoghegan-Quinn, 2010, p. 3) and the Western Balkans. In a speech held in Montenegro, for instance, Commissioner Potočnik (2008b) told his interlocutors:

Together, we will mobilize the brain-power of Europe to put knowledge and innovation at the service of people. Jointly, we will confront global challenges.

Altogether, these four role conceptions corresponding to an NPE logic all refer to the science for diplomacy dimension of science diplomacy that uses ‘international engagement through science to develop, sustain, or enhance relationships between countries’ (Wang, 2013, p. 4). Science is referred to as a means for co-operative purposes, attaining certain
norms that the EU defends in the global context, especially fostering (sustainable) development and tackling global challenges. While prominent in general statements, and frequently referred to in documents related to specific countries, these four role conceptions appear overall less frequently in the EU’s discourse than those corresponding to a MPE logic.

**Role Conceptions Corresponding to a MPE Logic**

Many general science-related statements contain references to role conceptions corresponding to MPE. Such conceptions appear particularly in contexts regarding neighbouring countries as well as emerging and industrialized countries that are S&T heavyweights. The most frequently evoked role conceptions were competitor (59 times), contributor to EU policies, objectives and interests (57 times) and knowledge-based actor (46 times), followed by international collaborator for scientific or other purposes (38 times) and partner in mutually beneficial co-operation (23 times). Evidence of these role conceptions was found in documents from the entire period 1990–2015. Beginning with the key role conception of contributor to EU policies, objectives and interests, these conceptions are then discussed in alphabetical order.

**Contributor to EU Policies, Objectives and Interests:** This role conception captures the oft-invoked support that external science policies can give to EU policies, objectives or interests. Evidence of this role conception includes references to the importance and complementarity of international science co-operation for the Union’s external relations, policies and instruments (Council, 2013, p. 2; European Commission, 2014, p. 7, 2012b, p. 6; Geoghegan-Quinn, 2013, p. 3), supporting other EU policies such as the common commercial policy:

> International co-operation in research and innovation contributes to the broader policies of the Union, as reflected in the Europe 2020 strategy (European Commission, 2012b, p. 4).

Science diplomacy is as much about innovation in economic policy, as it is about neighbourhood policy, or even foreign policy (Moedas, 2015a).

This role conception also captures the need to develop international S&T co-operation in close co-ordination with other policy instruments (European Commission, 2012b, p. 6) and for opening up the ERA internationally (Council, 2013, p. 2, 2012, p. 3, 2008a, pp. 2–3; European Commission, 2008, pp. 2, 4, 2007, p. 3), for positioning Europe as a hub of the world-wide knowledge-based society (European Commission, 2001, p. 4) and for raising its profile in the world (European Commission, 2001, p. 7).

**Competitor:** The competitor role conception is frequently evoked in EU discourse, since finding the balance between co-operation and competition remains ‘the crucial question for international RTD’ (European Commission, 1995, p. 4; Geoghegan-Quinn, 2010, p. 3; Moedas, 2015b; Potocnik, 2005, p. 3). This conception strongly indicates an interest in using science for strengthening the Union’s competitiveness in general terms (Busquin, 2002, p. 4; Moedas, 2015a, 2015b; Schulz, 2014), including multiple allusions to the competitiveness of EU companies and industry (Council, 2008b, p. 2; European Commission, 2012b, p. 4, 2008, p. 3, 8, 1996, p. 3), as well as to improving
market access or the Union’s market share (Council, 2010, p. 10; Geoghegan-Quinn, 2013, p. 3) and strengthening its position in international trade (European Commission, 1995, p. 1e): ‘international cooperation in research and innovation is vital to the strengthening of the Union’s excellence and attractiveness in research and innovation as well as its competitiveness’ (Council, 2013, p. 2).

Alongside general statements about international S&T co-operation, one can also detect references to individual or categories of countries, with special emphasis on balancing co-operation and competition when referring to industrialized countries and on improving market access in industrialized, emerging and developing countries.

International Collaborator for Scientific or other Purposes: The role conception Holsti called ‘regional-subsystem collaborator’ indicated ‘far-reaching commitments to co-operative efforts with other states to build wider communities, or to cross-cutting subsystems’ (1970, p. 265). The reformulation into international collaborator for scientific or other purposes seeks to better capture the commitments to self-interested collaboration at the international level, not always aimed at a specific region/subsystem.

This role conception includes the importance of reinforcing S&T co-operation per se (for scientific purposes, as ‘diplomacy for science’) and also using it instrumentally for other, often economic purposes (as ‘science for diplomacy’). In both cases, general and country/region-specific statements were found. Examples abound of the importance of reinforcing S&T co-operation in general terms (Council, 2008b, p. 3, 2010, p. 10; European Commission, 2012b, p. 4; Potocnik, 2005, pp. 5–6) and with specific partners – such as Israel (Schulz, 2014), the neighbours (European Commission, 2012b, p. 6), Australia (Geoghegan-Quinn, 2012, p. 2) – as well as the importance of regular exchanges of views within the framework of international organizations to pursue interests (European Commission, 1995, p. 13).

The role conception captures in particular the instrumental use of science co-operation to further develop, improve and deepen relations (Moedas, 2015b), trigger industrial cooperation (European Commission, 1996, pp. 2, 6), boost trade and investment relationships (Geoghegan-Quinn, 2010, p. 2) or pave the way for closer economic and political co-operation (European Commission, 2001, p. 3). One of many examples stresses: ‘the highly instrumental role that S&T cooperation agreements may play in the setting up of new, structured relationships with these countries of particular strategic interest [emerging economies] for the Union’ (European Commission, 1996, p. 2).

Knowledge-based Actor: This role conception refers to the pursuit of purely scientific and technological interests through international co-operation. EU discourse frequently mentions using international S&T co-operation to achieve goals such as strengthening the S&T capabilities of the European research community (European Commission, 1990, p. 2), strengthening the S&T base of the EU (Council, 2008b, p. 2), improving the performance of the Union’s RTD (European Commission, 1995, p. 19), accessing knowledge (European Commission, 2007, pp. 9–10; Geoghegan-Quinn, 2013, pp. 2–3), developing Europe’s scientific excellence (European Commission, 2008, pp. 2, 4, 2007, p. 9) and attracting the ‘best scientific minds’ to come and work in Europe (Geoghegan-Quinn, 2012, p. 5).
It also includes references to extending the frontiers of S&T knowledge (especially in multilateral contexts, European Commission, 1995, p. 13), sharing S&T information (Council 2008b, p. 2; European Commission, 2007, pp. 9–10) and raising the S&T profile of Europe (European Commission, 2008, p. 3, 2001, p. 3), while making ERA a world class reference (European Commission, 2008, p. 3, 2001, p. 4).

Ultimately, this role conception perceives science diplomacy as diplomacy for science in the interest of further strengthening the Union’s ‘science market’.

**Partner in Mutually Beneficial Co-operation:** This role conception emphasizes the importance of pursuing co-operation that is in the participating parties’ mutual interest through international S&T co-operation. Discourses falling under this role conception stress the importance of co-operation in mutually advantageous terms, based on reciprocal access to research efforts (European Commission, 1995, p. 4) and mutual access to market opportunities (Geoghegan-Quinn, 2013, p. 2) as well as the reciprocal benefits deriving from co-operation (Council, 2013, p. 3, 2010, p. 10). Both general and country-specific statements contain this role conception.

In synthesis, EU policy-makers make frequent use of the role conceptions corresponding to a MPE logic, referring to both major dimensions of science diplomacy. Several role conceptions correspond to diplomacy for science, evoking diplomatic means as useful for achieving scientific goals. The conceptions *international collaborator for scientific or other purposes* (when referring to international S&T collaboration as an end in itself) and *knowledge-based actor* qualify as expressions of this dimension. These role conceptions perceive, as the main purposes of the EU’s external science policies, a promotion of the external dimension of the EU’s Framework Programme for Research and ERA, and thus an externalization of the EU’s ‘science market’, mostly via what has classically been referred to as S&T co-operation. By contrast, the role conceptions *competitor, contributor to EU policies, objectives and interests, international collaborator for scientific or other purposes* (when other, non-scientific purposes are stressed) and *partner in mutually beneficial co-operation* correspond to science for diplomacy. With these role conceptions, the EU intends ‘to capitalize intentionally on its market power to achieve foreign policy goals’ (Jurje and Lavenex, 2014, p. 325). These role conceptions perceive science and innovation as means for competitive purposes. Their underlying rationale, with the partial exception of *contributor to EU policies, objectives and interests*, could thus be captured by the notion of ‘science for economic diplomacy’.

**Complementary Narratives for a Reinforced EU Science Diplomacy**

The discourse analysis reveals, first and foremost, that EU policy-makers draw on a mix of rationales for their justifications of the Union’s increased engagement in science diplomacy. Not only do NPE and MPE logics coexist, they are sometimes referred to in the same sentence of a strategy or speech, for instance when it comes to reconciling the need to co-operate with emerging economies while highlighting the competitive nature of the Union’s relationship with them.

While the EU thus seems to be wanting to balance out this tension, and that is the second main insight, a clear pattern indicating more frequent recourse to an
instrumentality-based as compared to a norms-based argumentation emerged from the analysis. This points to policy-makers’ conscious or unconscious desire to justify policy expansion in this area predominantly on the basis of an ‘EU-as-(science) market power’ theme rather than with reference to the norms underpinning European integration identified by Manners (2002).

Third, the analysis yielded a clearer picture of the conceptions held by policy-makers of the contents of EU science diplomacy. Evidently, the more traditional vision of science diplomacy as diplomacy for science – using diplomatic means to facilitate international science co-operation – continues to form a key component of EU discourse, which it has sought to rhetorically further strengthen recently. From this classical ‘international S&T co-operation’ perspective, the promotion of science through external action represents an end in itself. This dimension comprises in particular the intention of externalizing the EU’s internal market (ERA), corresponding therefore to a MPE logic. However, and although already present in documents from the 1990s, the science for diplomacy dimension has gained considerable ground in EU discourse recently. The analysis reveals, on the one hand, that EU policy-makers express a willingness to use science for attaining foreign policy objectives corresponding to a normative agenda, especially in terms of (sustainable) development and global challenges (NPE logic). On the other hand, they also highlight a possible instrumentalization of science for advancing a broader (especially economic) agenda, for attaining greater competitiveness, market shares, but also other foreign policy goals. This corresponds to MPE and mirrors the framing of science and innovation policies inside the EU, which are discursively strongly connected to the ‘growth and jobs’ theme permeating the Europe 2020 strategy.

III. EU Science Diplomacy in Practice

The discourse analysis has resulted in the identification of three categories of EU science diplomacy – diplomacy for science corresponding to a MPE logic (the classical international S&T co-operation narrative), science for diplomacy corresponding to a NPE logic (a narrative that employs science to promote essentially peace-building and (sustainable) development), and science for diplomacy corresponding to a MPE logic (a narrative employing science and innovation to promote mainly the EU’s competitiveness) (see Figure 1). To validate if these images of EU science diplomacy conveyed in official statements (what the EU says) correspond to actual behaviour (what it does), a plausibility probe into EU activities is now undertaken. To this end, and while space constraints prevent an exhaustive discussion, a few illustrative examples of EU science for diplomacy and diplomacy for science are highlighted.

Diplomacy for Science: The External Dimension of the Framework Programme and ERA

EU diplomacy for science comprises three main forms of activities, mainly conducted by the European Commission’s Directorate-General (DG) for Research and Innovation.

First, the EU makes multiple usages of its framework programme to facilitate international science co-operation. Generally, all countries can participate in Horizon 2020.4

4 For a list of Horizon 2020 associated countries, see http://ec.europa.eu/research/scp/pdf/policy/h2020_assoc_agreement.pdf?view=fit&pagemode=none

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Moreover, especially for neighbourhood countries the possibility of becoming associated members to Horizon 2020 is foreseen, by which they obtain similar rights and obligations as EU Member States. The EU also tries to include its neighbours into a broader Common Knowledge and Innovation Space. Additionally, under the ‘Excellent Science’ pillar of Horizon 2020, the European Research Council finances researchers from all over the world, provided they implement their projects in the EU.

Second, the EU engages in more than 40 bilateral Science, Technology and Innovation (STI) agreements with third countries, which traditionally pursue primarily (but no longer exclusively, as argued below) science-related ends such as enhancing prospects for collaborative research or allowing for the shared use of research facilities (Fikkers and Horvat, 2014). S&T co-operation is also an important component of the various EU regional co-operation frameworks such as the Mediterranean Partner Countries (via the Monitoring Committee for Euro-Mediterranean co-operation).

Third, the EU supports multilateral activities, especially as part of the OECD’s Global Science Forum or in the Global Research Council, an organization formed by the heads of science/engineering funding agencies from around the world to promote the sharing of data and other forms of collaboration among funding agencies worldwide. Such activities can be understood as the external promotion of ERA because they provide frameworks in which the Union can attempt to diffuse its internal rules and practices on how to organize scientific research. Additionally, ERA itself foresees direct international co-operation, for example, via the creation of international infrastructures (European Commission, 2012a, p. 4).

Generally, the target countries of the EU’s diplomacy for science correspond to its priority partners: (potential) candidate countries and other neighbours as well as strategic partners.

Science for Diplomacy

EU science for diplomacy has arguably been less prominent and only recently on the rise. As it uses science for non-scientific foreign policy purposes, it involves a broader array of actors, including different Commission DGs such as Development Co-operation or Trade as well as the European External Action Service (EEAS), which ‘closely works with the Commission (…) in order to (…) develop a genuine and ambitious science diplomacy’ (EEAS, 2015). A few examples corresponding to either a MPE logic or a NPE logic serve to illustrate the growing importance of this dimension.

In a MPE perspective, the most significant examples of what could be termed ‘science for economic diplomacy’ include the abovementioned STI agreements. The EU increasingly signs these agreements not only for scientific, but also for non-scientific reasons, especially with neighbourhood and developing countries. For Fikkers and Horvat (2014, pp. 11, 13), the Union does so in order to support its external economic policies and competitiveness through science. The fact that STI agreements are used for promoting EU science-related objectives and non-scientific purposes mirrors the fuzziness with which allusions to various forms of science diplomacy are mingled in EU science diplomacy-related discourse.

5 Overview of STI agreements: http://ec.europa.eu/research/fscp/pdf/policy/st_agreement_ec_euratom.pdf?view=fit&pgemode=none.
6 http://www.globalresearchcouncil.org
From the NPE perspective, instances of using science to support the EU’s norm-driven foreign policy traditionally involve partnerships with developing countries such as the Africa–EU Partnership, a long-term framework for structured co-operation. In recent years, specific initiatives corresponding to this logic have also been launched. They are particularly targeted at the Middle East. Examples include the EU’s substantial financial and technical support to SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East), a platform initiated in 2004 under the auspices of the United Nations Educational, Scientific and Cultural Organisation – and modeled on the European Organization for Nuclear Research (CERN) – in order to foster a scientific co-operation culture and promote dialogue in the Middle East.

Where the EU merely reinforces a UN initiative in the case of SESAME, the Middle East Research and Innovation Dialogue project, which is supported under Horizon 2020, represents an example of a genuine EU initiative that seeks to encourage research co-operation through collaboration amongst researchers and policy-makers from all countries in the region.

Altogether, this necessarily brief plausibility probe of EU science diplomacy activity patterns appears to confirm the results of the discourse analysis. While further detailed scrutiny will be needed to solidify this finding, the EU seems to be in a process of consolidating its diplomacy for science, based on an instrumental, science and innovation-oriented logic, but it also appears to be reinforcing its science-based co-operation with third countries for the purpose of pursuing broader foreign policy objectives. The implications of these findings are discussed in the conclusion.

**Conclusion**

This article set out to provide a detailed understanding of the motivations for the EU’s evolving science diplomacy, which was treated as a hard case for examining the validity of considering the EU as either a market or a normative power. The study drew on a discourse analysis that identified nine role conceptions expressed by EU policy-makers in the external science policy domain, which were validated through probing its concrete behaviour. This yielded a number of novel insights in empirical and conceptual terms, which have strong policy implications.

For one, the analysis provided ample evidence that and how the EU is indeed – both rhetorically and in its actions – promoting its science diplomacy. Its findings help clarify the understanding that policy-makers have of the contents of EU science diplomacy. They suggest that the Union is in the process of reinforcing its *diplomacy for science* (the classical international S&T co-operation), while developing a genuine *science for diplomacy*. These latter efforts correspond, on the one hand, to a MPE logic, and are aimed at capitalizing on the EU’s market power in the science domain to either increase its market share or attain other, often economic foreign policy objectives in line with the key purposes of Europe 2020. On the other hand, recent EU science for diplomacy initiatives also correspond to a NPE logic. They involve Commission attempts, supported by the EEAS, to advance a normative foreign policy

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7 http://www.africa-eu-partnership.org/en/areas-cooperation/science-info-society-space/depth.
8 http://www.sesame.org.jo/SESAME/
9 http://meridproject.eu/
agenda related primarily to peace-building and sustainable development. Ultimately, the analysis finds that these three variants form part of a broader, evolving EU science diplomacy landscape.

Additionally, the findings of this analysis advance the NPE/MPE debate in two main ways. On the one hand, they demonstrate the analytical salience of distinguishing between interest- and norm-driven behaviour when it comes to EU external action. To justify EU policy expansion in the domain of science diplomacy, EU policy-makers primarily rely on discourses that refer to the Union’s image as MPE, invoking instrumentalist rationales for investing in this activity. This suggests a certain need to frame policies in economic terms, a tendency that is mirrored in the way science and innovation are understood across the entire Horizon 2020 programme, namely primarily as a contribution to the Union’s Europe 2020 agenda for growth and jobs. However, in more recent years, references to the EU’s norms-based agenda have become more frequent, resulting in a peculiar mix of arguments for reinforced EU science diplomacy. This seems to imply that the use of a combination of discourses – addressed to different audiences – to justify novel external science policy activities may enhance the latter’s acceptability. Put simply, EU science diplomacy means different things to different constituencies: traditionalists and purists caring about STI per se may find themselves in the reinvigorated classical S&T narrative of diplomacy for science, those interested in strategically exploiting the economic potential of EU STI at a global scale will buy into the framing of science for economic diplomacy, and those – like the EEAS – who see the potential of using science for other, primarily developmental or peace-building purposes will prefer the NPE framing of science for diplomacy. This multitude of framings thus serves to enlarge the supporter base for the expansion of this policy area.

On the other hand, if this discursive mix is seen in conjunction with the insights on how the EU actually operates in this policy area, the Union clearly seems to qualify at the same time as MPE and NPE in the external science policy domain. The contribution that this analysis makes to the EU external relations literature is thus to provide evidence that MPE and NPE are far from mutually exclusive, either when it comes to EU rhetoric or action. This insight underscores that ‘normative and market power approaches privilege different faces of what the EU’s core identity is and emphasize different mechanisms through which European rules radiate beyond EU borders’ (Lavenex, 2014, p. 887). While a more detailed scrutiny of EU science diplomacy practices than could be provided here would be desirable to consolidate this finding, more analyses of ‘hard cases’ of EU external policies would generally be needed to further investigate the interrelations between NPE and MPE.

Finally, these findings have policy implications. Not only do norms and interests co-exist in EU policy-makers’ words and deeds, but there also exists a tension between them, namely how to choose whether to advance interests or norms (or how to reconcile them) in a given policy context. The June 2016 EU Global Strategy, with its call for ‘principled pragmatism’ provides only an enigmatic response to this question: ‘Our interests and values go hand in hand. We have an interest in promoting our values in the world. At the same time, our fundamental values are embedded in our interests’ (EEAS, 2016, p. 9). EU (science) diplomats will need to be clearer in their interactions with various groups of interlocutors and, while norms might – as seen in the science domain – increasingly be alluded to, EU interests might well be what they will defend in practice.
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