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The interface question of Science Diplomacy: How do science and diplomacy interact?

A case study into the internationalization of Flemish, academic research

Philippe Van Gerwen
Master International Relations & Diplomacy

Promotor: Prof. Dr. J. Melissen
Assessor: Prof. Dr. J. Kustermans

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Voor Dominique

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Abstract and keywords (English version)

Science Diplomacy is a young field in the academic literature. The conceptualization and discourse of Science Diplomacy have already received a large amount of attention. However, empirical research on Science Diplomacy practices on an academic level is limited. To mitigate this gap in the literature, a case study into the stimulation of the internationalization of the Flemish academic research landscape was performed. The information of the case study was mainly gathered by interviewing respondents from Flemish Departments, universities, and other related organizations. The main contribution of this thesis is the enhancement of the concept Science Diplomacy by proposing a fourth pillar, namely 'Diplomacy in Science'. Also, this case study challenges the state-centric view present in the literature. Moreover, the interface between 'science' and 'diplomacy' in Flanders is found not to be as problematic as described in the literature. Finally, the empirical case and its discussion based on the literature will help to advance the understanding of Science Diplomacy in the literature and practice.

Key words: Science Diplomacy, empirical research, Diplomacy in Science, internationalization of academic research, sub-state diplomacy, academic diplomacy.

Abstract and keywords (Dutch version)

‘Science Diplomacy’ is een recent domein binnen de academische literatuur. De conceptualisering en het discours van ‘Science Diplomacy’ hebben reeds veel aandacht gekregen. Op academisch niveau is het empirisch onderzoek naar ‘Science Diplomacy’ echter beperkt. Om deze lacune in de literatuur te dichten, werd een case study uitgevoerd naar de stimulatie van de internationalisatie van het Vlaamse academische onderzoekslandschap. De informatie van de case study werd aan de hand van interviews met Vlaamse departementen, universiteiten en andere verwante organisaties verzameld. De belangrijkste bijdrage van deze thesis is de uitbreiding van het concept Science Diplomacy met een vierde pijler, namelijk het concept ‘Diplomacy in Science’. Ook daagt de casus de op de staat gerichte visie uit die in de literatuur aanwezig is. Bovendien wordt gevonden dat de verhouding tussen ‘science’ en ‘diplomacy’ in Vlaanderen niet zo problematisch is als beschreven in de literatuur. Ten slotte, de empirische casus en de bespreking ervan op basis van de literatuur dragen bij tot een beter begrip van ‘Science Diplomacy’ in de literatuur en in de praktijk.

Sleutelwoorden: ‘Science Diplomacy’, empirisch onderzoek, ‘Diplomacy in Science’, internationalisering van academisch onderzoek, ‘sub-state diplomacy’, academische diplomatie.

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List of abbreviations

AAAS	American Association for the Advancement of Science
BOF	‘Bijzonder Onderzoeksfonds'
CSG	The Strategic Goods Control unit of the Flemish Department of KBUZA
EC	European Commission
ERA	European Research Area
EU	European Union
EWI	Flemish Department of Economy, Science, and Innovation
FIT	Flanders Investment & Trade
FWO	The Research Foundation Flanders
HE	Higher education
IOF	Industrieel Onderzoeksfonds
KBUZA	The Flemish Department of Chancellery & Foreign Affairs
KU Leuven	The Catholic University of Leuven
MFA	Ministry of Foreign Affairs
SD	Science Diplomacy
S&T	Science & technology
STI	Science, technology, and innovation
UAntwerp	University of Antwerp
UGhent	University of Ghent
UHasselt	University of Hasselt
VLIR	Flemish Interuniversity Council
VUB	‘Vrije Universiteit Brussel'

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1 Introduction

Science Diplomacy (SD) is a recent domain in the academic literature. It only came into existence after the coining of the term around 2007 in the United States of America. While SD is already ten years a subject in the academic literature, there is still no clear analytical definition of the term. Generally, SD is delineated by stating that it is a domain where science (community or policy) interacts with diplomacy (community or foreign policy). SD would close the gap between the two domains and make it possible to advance the interests of both. In the literature, it is argued that SD practices already existed before the coining of the term (Turekian, 2018).

The broadness of the term SD can be illustrated by the first influential work on the topic. In the report by the American Association for the Advancement of Science (AAAS) and the Royal Society (AAAS & the Royal Society, 2010), three large branches were identified that form SD together. First, SD could refer to the fact that diplomacy uses more academic input and adopts some of the rigorous methodological methods of the science community (science in diplomacy). Second, diplomacy could be used to help the advancement of the science community (diplomacy for science). Third, science could be used to advance foreign policy goals (science for diplomacy). While this work is criticized and other conceptualizations exist, it remains a dominant anchor in the SD literature.

The discourse of the term is marked by an uncritical promotion of the term. To start, the term originates from the practitioner field. Moreover, the vagueness of the term helps the promotion of the term due to its catch-all nature. Another way to promote the term was to frame science as pure and SD as a way to address global challenges. On the one hand, the discourse was that the virtue of SD comes from bringing the pure, apolitical, and cooperative scientific community together with the political diplomats that are unable to cooperate. On the other hand, the discourse was that SD was something normatively good as it tried to address global challenges. Moreover, it is only by SD that it would be possible to overcome the collective action problems connected to these global challenges. Recent academic literature studied this discourse and criticized it in several ways.

Besides the research focusing on the conceptualization of the term, there is a recent research shift to focus on the SD actors or science diplomats. The work of Melchor (2020) can be seen in this way. This movement states that there is a gap between the science and diplomacy community. As a result, people that are working on this interface should be properly trained to be able to work efficiently and effectively. This part of the literature focused on creating a typology for science diplomats and the skills that are required for science diplomats.

There are multiple gaps present in the SD literature, which is expected given the developing nature of the domain. Two gaps are highlighted that are relevant for this dissertation. First, while the SD literature often refers to examples of SD practices, there is little empirical research of SD cases based on academic standards (Rungius, 2018). One of the exceptions is the 9 case studies performed under the EU-funded S4D4C project (Young, Flink, & Dall, 2020). Second, the concept of SD was from the beginning defined in a goal-oriented way and not in an institutional or actor-oriented way (Rungius, 2018). It is only recently that there is some focus on science diplomats in the literature. However, there is no movement in the literature focusing on how the interface between the science and diplomacy community is organized. Although these interfaces are in full development at the moment, it would be interesting to have more academic research on how this interaction is organized in practice. For example, empirical cases could inform the theoretical claims on the interface between science and diplomacy.

In Flanders, a large part of the science community performs their research at universities. This is especially the case for publicly funded research in Flanders. In the research portal by the Flemish Department of Economy, Science, and Innovation, 43,914 projects are registered. The 5 Flemish universities are the knowledge institutions with the highest number of projects. In total, they represent 41,815 projects, which is equal to 95% of the registered publicly funded research projects in Flanders (Departement Economie, 2021b).

The internationalization of higher education and academic research seems to be one of the priorities of the Flemish Department of Foreign Affairs, as academic diplomacy is mentioned on their website. Their goal is two-fold: to create a region that has large amounts of crucial knowledge and to improve the general image of Flanders abroad. One of the key aspects of this internationalization is the stimulation of international research cooperation. To do so, two methods are said to be applied by the Flemish Department. First, Flemish higher education institutions are promoted through ministerial envoys or the Flemish diplomatic representations. Second, the Flemish diplomatic representations aid the higher education institutions in their international activities (Departement Kanselarij & Buitenlandse Zaken, 2021).

The two highlighted gaps in the SD literature are the low amount of empirical case studies and a lack of focus on the organization of the interaction between science and diplomacy. Moreover, the stimulation of international research cooperation at the universities seems to be one of the priorities of the Flemish Department of Foreign Affairs. Therefore, the following research question arises:

How is the interface between the science community and state actors organized for the stimulation of the internationalization of academic research at the Flemish universities?

The research question is descriptive and is focused on bringing more empirical findings (based on an academic level) into the SD literature. The findings may even contribute to the conceptualization of the term Science Diplomacy from an organizational-oriented view. The stimulation of the internationalization of academic research may also be studied from the perspective of knowledge diplomacy. However, due to the focus on the interaction between the science and diplomacy community, the field of SD is more relevant for this thesis.

The societal relevance of the research question is that it will contribute to the further development of SD as a practice. One should be aware not to fall into the too optimistic view of the dominant discourse on SD. However, SD may be relevant to tackle some of the global challenges like climate change, water scarcity, and pandemics among other objectives. Interdisciplinary interactions will be key to mitigate thoroughly these issues. Furthermore, improving the understanding of SD could help relevant actors to set up appropriate practices.

The thesis is structured as follows. In section 2, a study of the Science Diplomacy literature is performed. In section 3, the state of the art in the SD literature is discussed. In section 4, a theoretical framework is proposed. In section 5, the research design and the data collection methods are discussed. In section 6, the case study is described and discussed. Finally, the conclusion of this thesis can be found in section 7.

2 Literature study

2.1 History of Science Diplomacy

The term Science Diplomacy became present in the academic literature in the last two decades. However, this does not mean that there were no Science Diplomacy practices before. In this section, we will look into the relationship between science and diplomacy in history and into the environment in which the term Science Diplomacy was established.

2.1.1 History of Science Diplomacy practices

According to Flink (2020), the international exchange of scholars was already present in the 18th century. However, these exchanges were limited until the 1950s. Around that time, higher education (HE) together with science, technology, and innovation (STI) policies started to influence foreign policymaking (Flink, 2020). It was during the Cold War that the domain of science became a foundation for diplomacy. During this time, multilateral and bilateral science cooperation arose (Turekian, 2018). The United States of America and the Soviet Union started to perform exchanges in the late 1950s to build trust between the two countries. These exchanges were enabled and supervised by the diplomatic services of both countries. Both the ministries of foreign affairs and the local embassies played a key role and diplomats were continuously involved to ensure a smooth operation of these exchanges (Krasnyak, 2020). Moreover, Abelson (1972) points out how scientific and technological cooperation between the USA and the Soviet Union remained having the support of the policy-makers in the middle of the Cold War. Likewise, Wade (1974) reports on how Henry Kissinger (US Minster of State) saw that science and technology could affect diplomacy.

2.1.2 The coining of the term

The term Science Diplomacy (SD) arose around 2007 in Washington D.C. before the presidential elections. It was mixed with a call for the restoration of the USA's influence in the world as the image of the USA was damaged after it intervened in Iraq. Science was argued to be a good way to give a boost to the image of the USA. Otherwise, the USA would risk being constrained in its influence due to an adverse public opinion (Lord & Turekian, 2007). The American Association for the Advancement of Science (AAAS) was (and still is) a major promotor of this term. It is from this time on that the term was also used by other countries. Of course, other countries were already involved in SD practices before the term SD was coined. The United Kingdom had already brought parts of its international science policy and foreign service together earlier in the decade. Another example is that of Switzerland and Germany,

who were promoting themselves abroad via 'Science and Innovation Houses' (Rungius & Flink, 2020).

2.1.3 Spread of the term

The term SD was established by practitioners and spread further. The term was taken up in the United States, the United Kingdom, and New Zealand showing the Anglo-Saxon roots of the term (Kaltofen & Acuto, 2018). In Europe, the term has become salient on the level of the European Union. In 2012, the term was introduced by the European Commission and science policies are now part of the European External Action Service (EEAS) policy goals (Rungius & Flink, 2020). The European Union is actively researching SD and funded three research projects, namely El-CSID, InsSciDE, and S4D4C. The website of the projects ("The European Science Diplomacy Cluster," 2020) explains the European research as follows:

> "Each project places emphasis on certain aspects of European science diplomacy research, shining a light on fields such as heritage and archaeological diplomacy (InsSciDE), interlinkages between scientific and cultural diplomacy (EL-CSID), and using science for and in diplomacy for addressing global challenge (S4D4C). Together, the projects offer a comprehensive picture of European science diplomacy."

2.2 Science Diplomacy: In search of a definition

While there is no controversy on the history of SD practices, there is no consensus on the meaning of the term. As a result, the literature is still trying to develop a definition for SD. Below, an overview is given of the definitions and conceptualizations in the domain of SD.

2.2.1 Overview of definitions

Fedoroff (2009) defines SD as "*the use of scientific collaborations among nations to address the common problems facing 21st century humanity and to build constructive international partnerships*" (Fedoroff, 2009, p. 9). At that time, she was the Science Adviser of the US Secretary of State. The definition focuses on a shared global interest that SD can serve. In this definition, there is a practice dimension and a purpose dimension present (Rungius, 2018). SD was also defined as "*a series of practices at the intersection of science, technology and foreign policy*" ("The Madrid Declaration on Science Diplomacy," 2019). This definition highlights the distinction between these domains and that they could be used to enforce each other. This separation of domains will be an important characteristic when looking at the discourse surrounding SD. Melchor (2020) states that SD is characterized by the fact that it is a

transboundary field. SD is described as a field that crosses national borders, policy domains, but also the type of actors and the professional background that they have.

In 2010, the Royal Society in partnership with the American Association for the Advance of Science (AAAS) published a major contribution to the SD literature. In their report, SD is split into 3 dimensions, namely science in diplomacy, diplomacy for science, and science for diplomacy. The first dimension reflects that scientific advice can be used to inform foreign policy objectives (science in diplomacy). The second dimension indicates that foreign policy can facilitate international science cooperation (diplomacy for science). The third dimension focuses on the idea that this science cooperation can be used to improve international relations between countries (science for diplomacy) (AAAS & the Royal Society, 2010).

In reaction to the typology of the Royal Society and the AAAS, Turekian, Gluckman, Kishi, and Grimes (2018) came up with a new taxonomy. This taxonomy focuses on the different levels of interests that SD can serve. First, SD actions could be designed to advance the country's national needs. These national needs are wide-ranging. The authors mention soft power, national security, economic interests, and national capabilities as possible domains where SD could support the nation's interest. Second, SD actions could be designed to address cross-border interests. A variety of interests is possible on this level, however, it is limited to the bilateral or regional level. Third, SD actions could be designed to meet global needs and challenges. In this way, SD contributes to the resolving of global challenges through global, multilateral structures. At the same time, SD makes it possible to control ungoverned places. However, it should be noted that the authors use science and science, technology, and innovation (STI) interchangeably (Turekian et al., 2018).

Flink and Schreiterer (2010) defined 3 different goals that could be the basis for SD, namely access, promotion, and influence. First, SD could aim to achieve access to foreign researchers, knowledge, facilities, natural resources, and capital. In this way, the national innovation capacity and competitiveness could be increased. Second, promotion works in the opposite direction of access. Promotion focuses on showing the capabilities and achievements of the state to other countries. In that way, the attractiveness to cooperate is increased. Third, influence is related to the soft power of the state. In general, the typology focuses heavily on the national interest. Aukes (2020) clarifies the problems that can arise concerning access and why it could be an interesting objective to pursue. A first basic idea is that the existence of certain knowledge is not the same as access to it. Not all knowledge is publicly available. Also, the availability and accessibility of knowledge are dependent on geography, because countries/regions

specialize in certain topics. Moreover, if there is access to certain knowledge, it is also important that the interpretation capabilities are present. It should be noted that the authors also use science and science and technology interchangeably.

To conclude this part, it is clear that there is no consensus on what the definition of SD is. A flaw of the definitions is that they use science and diplomacy in a way as if there was a general understanding of what these terms mean. Yet, a definition should be more specific and allow clear delineations (Flink, 2020). Moreover, the definitions are constructed in a similar vein. As showed below, the definitions were created in a certain discourse. This discourse has often focused on the objective of SD (solving global challenges versus advancing national interests). Therefore, it is logical that the definitions and taxonomies of SD are often related to the purpose of SD. For example, there is no focus on the literature to define SD by the institutional structures or actors that are involved (Rungius, 2018).

2.2.2 Science diplomacy and scientific cooperation

In general, SD is separated from the concept of scientific cooperation. Scientific cooperation may be a part of SD, but can also be performed outside of the realm of SD. Authors differ on when scientific cooperation can be seen as SD. On the one hand, Van Langenhove (2016) sees scientific collaboration as a form of SD from the moment that this collaboration has an impact on international relations regardless of the presence of active involvement by state actors. Moreover, Legrand and Stone (2018) actively try to broaden the scope of SD to include activities without a central role for the state actors like ministries of foreign affairs. On the other hand, the dominant view in the SD literature is more restricting. The view is taken that SD should involve a direct diplomatic dimension by state actors. Without the involvement of representatives of a state (or supranational entity) scientific cooperation cannot be seen as SD according to the dominant view (Ruffini, 2020a; Rungius, 2018).

2.2.3 The term in practice

In practice, there is as much confusion on the term SD as in the academic literature. In the S4D4C research project, it was found based on 9 cases that SD is not used by everyone to explicitly label SD practices. Furthermore, the term is not used in a consistent matter. Cultural and linguistic differences are argued to be the cause for different national meanings and connotations that are given to the term SD (Young, Rungius, et al., 2020).

2.3 The Discourse of SD: Solving global challenges versus advancing national interests

In the previous section, it was shown that there was no clear definition of SD despite some attempts. To better grasp the meaning of the term, we will look at the discourse of SD.

2.3.1 Origin

To recall, the term SD was coined in the USA around 2007 in the run-up for the presidential elections. SD was promoted to become part of the foreign policy to reassert a positive image of the USA in the world. This image was damaged by the interventions in Iraq and Afghanistan. SD was planned to become a key part of the relations with Arab countries, as science and technology were one of the last facets of the USA that were respected in these countries. The term has evolved, however, some aspects of its origination remain persistent in the understanding of the term (Lord & Turekian, 2007; Ruffini, 2020b; Rungius, 2018).

2.3.2 The classic discourse

The term SD has often been used in a narrative about global challenges that are urgent and existential threats for all people. These challenges can be found in domains like climate, food, energy, water, and health. In that way, these are challenges that clearly should be addressed. However, global challenges are further defined in the narrative as cross-boundary and complex matters. Moreover, they are seen as common goods, so that a collective action problem arises. SD is then brought to the table as the solution to overcome these challenges as it stands for complete information and trust (Rungius, 2018; Rungius & Flink, 2020).

In the discourse of SD, the science and diplomacy actors are also characterized in a different and distinct way. Scientists are seen as eager to work in a cooperative way, share knowledge, and accept input from other scientists. They are also normatively seen as good and their goal is assumed to advance humankind as a whole. In that way, scientists could even overcome ideological and cultural issues. They would not be bound by their national identity, but rather be enabled by a shared universal scientific identity. Moreover, scientists are described to be apolitical. This portrayal of science is certainly not new. During his service as the US Minister of State, Henry Kissinger proclaimed that "*No human activity is less national in character than the field of science*" (Wade, 1974, p. 781). In contrast, the diplomat is seen as not able to have insight into complex scientific matters or to put the own national interest aside. The idealism and the global focus linked to science is contrasted with the realism and the state-centered focus of diplomacy. As a result, it is necessary to introduce scientists in international relations as they

would overcome the limitation of the contemporary diplomatic actors (Flink, 2020; Ruffini, 2020a; Rungius, 2018; Rungius & Flink, 2020).

2.3.3 Criticism on discourse

However, critics of this discourse argue that science is not as pure or non-competitive as shown. Flink (2020) gives examples that plagiarism and behavior based on national-cultural stereotypes are issues present in the scientific community. Rungius and Flink (2020) and Melchor, Elorza, and Lacunza (2020) refer further to a set of cases of misconduct and flaws in the working of the scientific community. It is also interesting that the mentioned authors point out that competition is also a part of the science world in contrast to the image described above. In addition, statements by government actors simply acknowledge the competitive nature of SD. In October 2020, the EU Commissioner for Innovation, Mariya Gabriel, stated that SD diplomacy is crucial during the Covid-19 crisis as it is a global challenge. She continues by declaring that SD can have a beneficial impact on international relations. At the same time, she acknowledges that national interests are involved in SD. Moreover, the EU Commissioner recognizes that SD can be influenced by "disinformation" and "ideology-driven approaches, including semantic manipulation" ("Insights from Commissioner Mariya Gabriel "Towards Science Diplomacy in the European Union"," 2020). The output of science cooperation like for example the Intergovernmental Panel on Climate Change (IPCC) or the Arctic Climate Impact Assessment reports are not always seen as objective. It is said that Russia believes that the output of these institutions may be used to help the agenda of other countries (Rowe, 2018). Also, it seems to be forgotten in the SD literature that science is not only funded by donors, but also by governments and investors with their respective interests. Lastly, the scientists themselves have their interests which they would try to satisfy if they engage in cooperative settings (Rungius, 2018).

If we do assume that science and scientists are as pure as portrayed in the discourse, other problems arise. The propagation of the aforementioned is argued to create unrealistic expectations and to be too romantic. The image that is created (science as pure) and one of the goals of SD (advance foreign policy) is in direct conflict with each other. On the one hand, science would become 'corrupted' if it becomes an instrument of diplomacy. On the other hand, if Science Diplomacy is only about apolitical cooperation, it is not clear how diplomacy would benefit from it (Flink, 2020). Another critique is that the fact that SD can only improve the status quo by providing peace and progress can also be refuted by some cases. Operations by the US Naval Medical Research Unit in Indonesia have been accused of espionage. Another

example is that the planting of a Russian flag on the North Pole by Russian scientists was considered by other states as a territorial claim. These examples could be seen as signs that international science operations are becoming more politicized (Ruffini, 2020b).

Moreover, the influence of science on politics is oversimplified. It seems that an 'invisible hand of science' is promoted that would improve vastly the international relations realm and the global society as a whole. Yet, the introduction of science into politics would not dismiss the political decision-making process. (Rungius & Flink, 2020). As an example of this last point, it is remarked that the IPCC was effective to create awareness for the topic of climate change. At the same time, it has not resulted in decisive actions as climate change remains, even in the light of established scientific cooperation, an international issue that is dealt with in a political way (Rungius, 2018).

2.3.4 Criticism on dominant taxonomy

The highly influential taxonomy by the Royal Society and the AAAS (AAAS & the Royal Society, 2010) is also criticized for its catch-all character as it includes every interaction between the domains of science and diplomacy. This catch-all character does not improve the analytical research on this topic. Moreover, Ruffini (2020b) points out that this taxonomy described the "science for diplomacy" in a particular way, namely that SD can only ameliorate the relations with other countries. The focus of the taxonomy that SD works towards global cooperation is pointed out as one-sided. It is also found problematic that the taxonomy does not define the concepts of science and diplomacy as these concepts have many dimensions (Rungius & Flink, 2020).

In contrast, another dominant taxonomy - proposed by Turekian et al. (2018) - did include the national interest component. This is also found to be logical as a state would not engage in SD if it could not gain from it (Ruffini, 2020b). Moreover, the authors of the taxonomy make clear that SD was used from the start as a means to search for maintaining or building influence in other states. Therefore, it highlights SD as a soft power tool, which is also present in how the EU deals with SD in its foreign policy (Rungius, 2018).

2.3.5 Explanation of discourse

How can this dominant discourse of pure, collaborative scientists in the SD domain be explained? The term SD arose from the domain of scientists. First, it could be said that these scientists had a cultural bias towards the view of pure science and global collaboration that they believe is present in their community (Ruffini, 2020a, 2020b). Second, it is used strategically

by its proponents to further promote and legitimize the term and therefore their work (Rungius & Flink, 2020).

2.3.6 Contemporary understanding

Collaboration and competitiveness are now both regarded as attributes of SD (Ruffini, 2020a, 2020b). In that way, the term arrived at the same place where it initially started. In the Cold War cooperation between the USA and the Soviet Union, it was already taken into account that one country could benefit more than the other from collaboration, highlighting the competitiveness present in the endeavor (Abelson, 1972). While the term SD is now considered more broadly, there remains a lack of an analytical definition that could be used by scholars (Ruffini, 2020b). A clear analytical definition would be beneficial to delineate the topic and bring more focus to the broad interpretation of SD.

The insights from the academic case studies in the S4D4C project indicate that this sharp focus on collaboration and competitiveness interest may be incorrect. This focus is logical if one starts from the typologies suggested in the academic literature. However, national interests are not seen as an issue in international cooperation in practice. It was found that "*institutional, procedural and political interest pose tangible challenges in a more granular sense, especially with regards to creating and maintaining concrete rules and procedures*" (Young, Rungius, et al., 2020, p. 8).

2.4 Perimeter discussion: What do science and diplomacy mean?

It is clear that there is no standard definition of SD and that this term was formed through a specific discourse. However, this is even more problematic as the two parts of the term, namely science and diplomacy, are ambiguous terms on their own (Flink, 2020). On the one hand, the SD literature does not focus on the meaning of 'diplomacy'. As earlier discussed, it is generally understood that it refers to the involvement of state actors. On the other hand, there is less consensus on the meaning of science in the literature. The word science in the term SD may sometimes refer not only to science but also to science & technology (S&T). This latter term is in some cases even extended to science, technology, and innovation (STI) and higher education (HE) policy (Young, Rungius, et al., 2020). Ruffini (2020c) calls this topic the discussion on the perimeter of SD. In the following part, we will focus on the meaning of the term science in SD.

2.4.1 The meaning of science in SD

Ruffini (2020a) investigates the meaning of science in the SD literature. It seems that not all SD authors have the same view on it. Science could refer in its most strict form to academic knowledge and basic research. In the global challenges discourse, science may be seen as something that can immediately be deployed to solve these challenges. This would imply that applied research is also seen as part of Science Diplomacy (Höne & Kurbalija, 2018). Also, the concept of science is extended to other domains. Often, science and technology are interwoven. Technology enables new scientific knowledge and new scientific knowledge may create new technology. The amount of competition also increases when taking the steps from science to S&T and STI. Especially, including innovation could bring SD in possible conflict with economic diplomacy (Ruffini, 2020a).

Due to the coining of the term innovation diplomacy, it could be seen as something different than SD. Therefore, it could be argued that innovation is not covered under science in the term SD. Yet, in public statements, SD may be linked to STI ("Insights from Commissioner Mariya Gabriel “Towards Science Diplomacy in the European Union”," 2020). Innovation diplomacy is a recent term in the literature focusing on innovation. It is also a new form of diplomacy that was defined out of practice. Griset (2020) sees innovation diplomacy as an evolution after the emergence of SD. Looking at the historical practices claimed to be innovation diplomacy, it can be stated that innovation diplomacy touches upon multiple areas of diplomacy. Innovation diplomacy seems to link to the domain of technology, economic, cultural, and Science Diplomacy (Griset, 2020).

The impact of science on the operational process/working of the diplomatic system with the scientific method and knowledge are often explicitly stated to be a part of SD. This is not the case for technology and innovation. In the case that technology and/or innovation are included, the SD literature focuses on the content impact that these two domains have on diplomacy and the other way around. Concretely, the impact of technology and innovation advancements on the operational processes of the diplomatic system is not considered to be part of SD in the literature. The latter may be coined as digital diplomacy (Ünver, 2017). In that way, SD is more limited than all the possible influences that these domains can have on each other (Weiss, 2005).

In conclusion, it is not clear how far the term science goes in SD. This may range from its most strict interpretation to including technology and innovation and/or higher education. Logically, science remains the core element and should be present to be able to speak of SD.

2.5 Science Diplomats

The term Science Diplomacy and its practices imply that there are practitioners of Science Diplomacy. Logically, they are called science diplomats. Nowadays, there are even courses on how to become a science diplomat. However, the separation between the realms of science and diplomacy has also an effect on the conception of what a science diplomat is. This question is another stream in the SD literature (Ruffini, 2020c). Moreover, only in the last years, academic research started to investigate the capabilities that are necessary to work on the interface between science and diplomacy (Höne & Kurbalija, 2018). Yet, it is a highly relevant domain as SD is often not yet formalized or institutionalized. In that way, the individual is key in bringing SD to a good end (Young, Rungius, et al., 2020).

2.5.1 Science diplomat as a profession

The formal profession of a practitioner of SD is likely not to be a science diplomat. This can be contributed to the fact that SD is a field bringing existing, established fields together. A logical separation in professions is scientists versus diplomats, which specialize partly in the other domain. A third type of profession is also present, namely civil servants, managers, and others, who mediate the relation between science and diplomacy (Melchor, 2020).

Melchor (2020) proposes a taxonomy for science diplomats. The main distinction is made between institutionalized and non-institutionalized positions. On the one hand, institutionalized positions group those roles that have a formal SD mandate or are actively working on bringing the science and foreign policy domains together. These positions could be found abroad or in the home country. Abroad, these positions are present in embassies and national representations in international cooperation structures. An example is a position that has the main responsibility for STI in embassies. Diplomats take up this role for countries like the USA, Austria, and Switzerland, while France and Italy use scientists in this position. Domestically, these positions are often found in ministries. Rungius (2018) points out that it is dependent on the country which ministry takes the leading role in foreign science policy. On the other hand, non-institutionalized positions group those roles that have no formal SD mandate but that facilitate SD. These roles can be found at research centers, universities, NGOs, government departments, and public agencies. It is not clear whether these people should be considered to be science diplomats. (Melchor, 2020)

2.5.2 Knowledge and skills

Science diplomats work on the interface between science and diplomacy. Therefore, their knowledge and skills should reflect this. Generally speaking, a science diplomat should understand scientific research and the STI landscape, while at the same time they should be acquainted with foreign policy and international relations. Depending on the background of science diplomats (scientist or diplomat), a certain knowledge and skill set is expected to be present. Yet they likely need to educate themselves in the other domain (Melchor, 2020). Gore, Nichols, and Lips (2020) extend this vision by highlighting that there is a large gap between a purely academic career and one which lies in the field of policies. The former is said to be characterized by a straightforward, linear relation between input factors and the realized output that is under control of the academic. In the domain of policy-making, this relation is not under control of one individual and is more complex. The authors recommend to support scientists in developing the needed skills to work in this unfamiliar domain. In that way, more academic output can be brought to the relevant policy makers.

Degelsegger-Márquez (2019) performed research in the European Union with individuals that work on the intersection of science and foreign policy. A majority of respondents state that they perform tasks linked to 'diplomacy for science' and 'science for diplomacy'. The respondents also engage in science advice. Looking at what was reported by the respondents, the need for training in skills like negotiation, communication, and networking is present. More knowledge on the interface between science and foreign affairs, as well as the stakeholder landscape, STI agreements, and activities of different actors are also welcomed (Degelsegger-Márquez, 2019).

The goal of the training in the other field (science or diplomacy) than the field in which one is educated is two-fold. First, due to this training, it is possible to understand the different forms of interaction, rules, and procedures that are related to the other field. In that way, scientists can act in a diplomacy setting and diplomats can more thoroughly grasp the subject that they are dealing with. Second, the training makes it possible to bridge a language gap that may exist between the 'world of science' and the 'world of diplomacy'. This language gap by respective jargon use may cause misunderstandings, alienation, and prevent the building of relationships. Therefore, it is important to address it. Moreover, in such a training one could be made aware of the gap in the use of language. In general, more specific language use is linked to science, while (deliberate) vagueness is linked to diplomacy. Being aware of different language use can reduce frictions (Höne & Kurbalija, 2018).

2.5.3 Challenges

While there is attention for these new interface professionals, the employment of them may be hindered by bureaucracy and resistance to change. This may be present on both sides of the interface. On the one hand, the strategic potential of science diplomats is often not yet recognized in the diplomacy network. This may lead to a situation where the science diplomat is given a position that limits the full potential. On the other hand, there may be not enough recognition for the need to have enough staff that is capable to deal with this interface in scientific institutions (Melchor et al., 2020).

2.6 Contemporary Science Diplomacy: Diversity as a main characteristic

Few studies researched national SD approaches (Rungius, 2018). Rungius also found that there are large variations in the national implementations of SD. Moreover, there is no consensus on how SD should look like. SD is still a domain that is in development, and national approaches may evolve drastically over time. These variations are found in multiple domains. First, the reason for a country to engage in SD may differ from other countries. Second, the ministry in charge of SD is also dependent on the country. However, in later research, some similarities were found. The national policy is often written in the national ministry responsible for that policy, including the foreign aspects of that policy domain. This domain ministry interacts with the relevant actors at the national level. The ministry of foreign affairs may be involved in international interactions. Third, the personnel responsible for SD varies greatly in size and composition per country (Rungius, 2018; Young, Rungius, et al., 2020).

Van Langenhove (2017) tries to structure the research into SD practices. In that way, he proposes the differentiation between strategic, operational, and support tools for SD. First, the strategic tools "*are policy documents that aim to give directions to what actors want to achieve and how to realize their policy goals*" (Van Langenhove, 2017, p.12). Second, operational tools are those instruments to put SD into practice. Finally, support tools "*aim to promote or facilitate science diplomacy activities*" (Van Langenhove, 2017, p.13). He also mentions that SD practices are often not strongly linked to foreign policy.

2.7 Education and knowledge diplomacy

Before continuing this research through the lens of SD, it is important to look at education diplomacy and knowledge diplomacy. At first sight, the research question seems to be related to both of these fields. Yet, education diplomacy has a certain meaning and connotation that makes it not useful for the current research question. Moreover, the research question could be

researched from the perspective of knowledge diplomacy. Still, the focus of state actors in the SD literature makes this field more appropriate for this thesis.

Education diplomacy is usually related to basic education, which excludes research. This term was coined circa ten years ago by the Association for Childhood Education International in 2009. Education diplomacy focuses on human development. The involvement of state actors is possible, however, cooperation between non-state actors can also be seen to be within the realm of education diplomacy (Childhood Education International, 2021; Hone, 2014; Knight, 2019).

Knowledge diplomacy was first related to intellectual property, however, now it is linked to the interaction between International Higher Education and Research Institutions and the relations with and between countries. While Science Diplomacy puts the involved state actors central (versus science cooperation), knowledge diplomacy acknowledges the trend that diplomacy does not always need to involve the Department of Foreign Affairs of a country. A second difference is that the scope of Science Diplomacy may be smaller than knowledge diplomacy, depending on how it is defined. On the one hand, knowledge diplomacy always includes science and technology. On the other hand, science may have the connotation of natural science, so it may exclude social sciences and humanities. Still, if science is broadly interpreted, science and knowledge diplomacy are similar fields (Knight, 2019).

3 Science Diplomacy: evaluation of the state of the art

As shown in the literature study, the academic literature on SD focuses on a number of key topics. On some topics, the debate has converged to a consensus, while on other subjects the debate remains open. Furthermore, some topics within the SD field are rarely studied.

On the following topics, there seems to be a consensus in de SD literature. First, the history of the field of SD is quite clear. Second, the reason why the term was coined is not contested in the literature. Third, the SD field separates the domains of science and diplomacy from each other. The literature seems to problematize this interface as scientists and state actors have different backgrounds, speak other languages, have other procedures, et cetera. Fourth, international scientific collaboration and SD are distinguished to have a different meaning. For the majority of SD authors, SD can only be present if state actors are involved in a diplomacy role as opposed to international scientific collaboration in which no state actors are involved in this capacity.

On the following topics, there is no consensus in the SD literature. First, an agreed-upon definition of SD does not exist. Even the meaning of the word science in the term is often not clear. Basic and applied research are always included but some authors extent it to technology, innovation, or higher education. Second, the purpose of SD is actively discussed. Some authors focus on the global good, while other authors focus on the national interest. Third, the discourse that contrasts the pure, apolitical scientist with the non-cooperative diplomat is heavily criticized.

The debate in the literature has long been dominated by purpose-driven taxonomies. In that way, the domains of SD not related to its purpose are understudied. On the one hand, the literature has only recently started to look into science diplomats and their backgrounds. On the other hand, the division between national and global interest has dominated, while institutional, procedural, and political interest may play a role as well (Young, Rungius, et al., 2020). Empirical studies on how the interface works between the science and diplomacy communities are largely absent.

4 Building blocks for the analysis of Science Diplomacy practices

There has been little research performed on the organizational side of SD practices based on an academic level. Therefore, this research is exploratory. Founded on the available academic literature, a theoretical framework is proposed. This framework highlights the three main building blocks of an SD practice: configuration, interests, and actors. The three building blocks interact with each other but further research can go deeper into those relations.

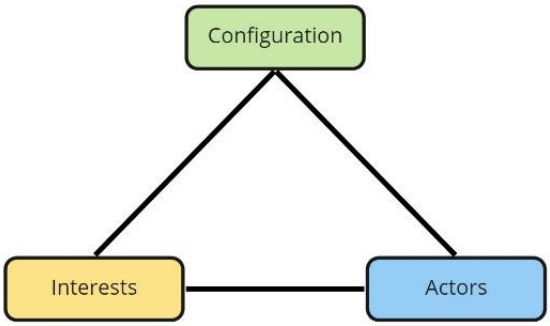

Figure 1: Building blocks of an SD practice
Source: Own composition

First, each SD practice is configured in a certain way. The academic literature has largely been silent on this topic. The SD practices will be placed in a 2x2 matrix. On one axis, a differentiation is made between permanent structures and ad-hoc interactions. On the other axis, a differentiation is made between the strategic (policy formulating) and the operational (policy executing) level. The latter axis is inspired by the work of Van Langenhove (2017). Within these axes, the structures, processes, and interfaces of the SD practices can be studied.

	Permanent	**Ad-hoc**
Strategic/ policy formulating		
Operational/ policy executing		

Table 1: 2x2-matrix to classify the configuration of SD practices
Source: own composition

Second, the actors can be studied for a given SD practice. On the one hand, actors of an SD practice can be studied on the departmental level of a government, enterprise, or academic institution. Relevant is which actors participate and how their organizational form is adapted to support SD. On the other hand, one can study the involved individual actors in these larger

organizations. Given the literature, the background of the people that are involved is expected to influence the interactions. For example, communication issues could arise when people with different backgrounds meet.

Third, the interests of the actors are an important aspect of an SD practice. For example, the potential purposes of SD practices are central in the taxonomies of the AAAS and the Royal Society (2010), Turekian et al. (2018), and Flink and Schreiterer (2010). Besides looking at the interests of the different actors of the SD practice, it is also interesting to assess the perceived tension between these interests.

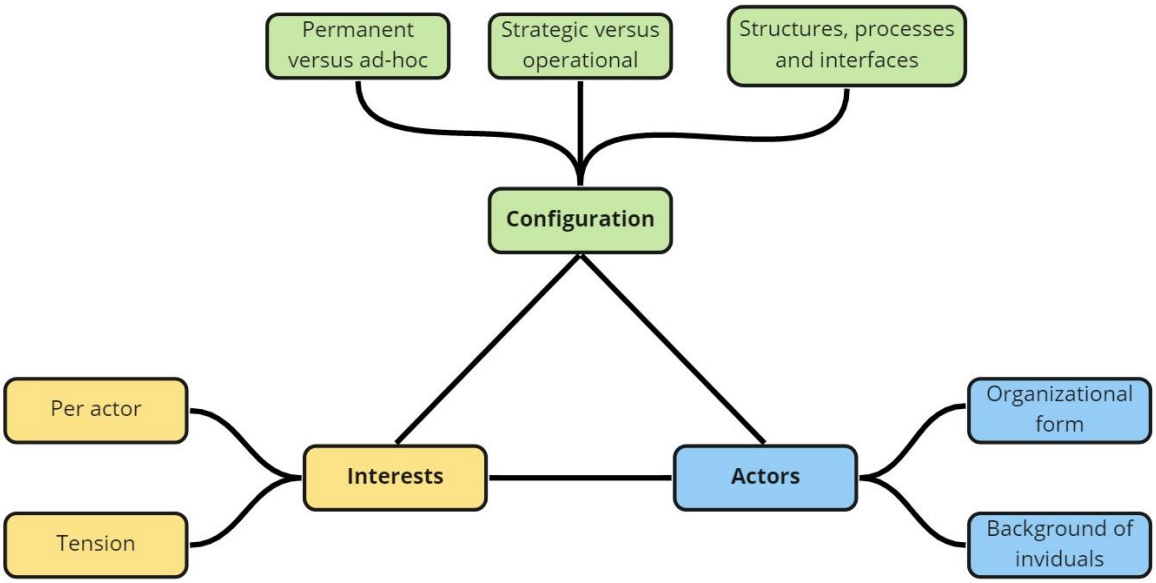

Figure 2: Expanded view on building blocks of an SD practice
Source: Own composition

5 A Single Case Study

5.1 Research Design

The research is exploratory and descriptive. A single case study design will be used. In that way, the case can be thoroughly studied. Although a multiple case study design would give more insights, it would not be feasible to study multiple cases thoroughly within the scope of this master's dissertation. The case will focus on the stimulation of the internationalization of academic research at the Flemish universities. This is an interesting case knowing that the Flemish Department of Chancellery & Foreign Affairs states to practice "academic diplomacy" of which one of the goals is to stimulate the internationalization of Flemish higher education and research (Departement Kanselarij & Buitenlandse Zaken, 2021). Moreover, as shown in the introduction, the Flemish universities produce a large amount of the publicly funded, scientific output of Flanders.

The information gathering is mainly based on interviews. Relevant actors are contacted and asked to participate. The actors have the option to answer anonymously for the whole interview or certain quotes. This should limit the inherent interview risk of socially preferable answers. However, this risk remains present. Moreover, (policy) documents and official websites are studied to complement the answers of the respondents. If a new relevant actor is mentioned during the interviews, an interview will be planned with this actor. Logically, the theoretical framework is guiding for the questionnaire, the interviews, and the reporting of the case study.

5.2 Data collection

5.2.1 Sample

Initially, the 5 Flemish universities, the Flemish Department of Chancellery & Foreign Affairs (KBUZA), the Flemish Department of Economy, Science and Innovation (EWI), and the Flemish Interuniversity Council (VLIR) were contacted. First, in the case of the universities, the general email addresses of the responsible offices for (research) internationalization were used. All relevant people were reached within the universities. After internal consideration, 4 Flemish universities decided to participate with the University of Hasselt declining the invitation. Second, the contacts within the Flemish Departments were proposed via the Secretary-General of the Department KBUZA, Julie Bynens. The relevant people were contacted and they accepted the invitation to join. Third, the Secretary-General of the VLIR was contacted and accepted the invitation to join.

During the interviews, it came to light that some other actors were also working (indirectly) in the field of the (stimulation of) the internationalization of academic research. These parties are the Research Foundation Flanders (FWO), Flanders Investment & Trade (FIT), and unit Strategic Goods Control (CSG) of the Department KBUZA. The relevant people of these organizations were invited for an interview. An overview of the interviewed people for this thesis can be found in Table 2.

Name	Function	Organization
Anne Adams	Advisor Science and Innovation Policy	University of Antwerp
Jacqueline Couder	Director International Relations	VUB
Isabelle De Coen	Academic Diplomacy	Ghent University
Raf Devos	Director CHRO / Public affairs	VUB
Johan Evers	Engineer Export Control Strategic Goods	Flemish Department of Chancellery & Foreign Affairs
Mieke Gijsemans	Director Research & Data Management	VUB
Peter Jaspers	Coordinator Domestic Network FIT and FIT Representative in Enterprise Europe Network Flanders	Flanders Investment & Trade
Koen Jongbloet	Manager of the Coordination Unit	Flemish Department of Chancellery & Foreign Affairs
Reine Meylaerts	Vice-Rector Research Policy KU Leuven	KU Leuven
Peter Spyns	Coordinator International Policy	Flemish Department of Economy, Science, and Innovation
Guido Van Huylenbroeck	Academic Director for International relations	Ghent University
Isabelle Verbaeys	Head of International Affairs	Research Foundation Flanders (FWO)
Tom Vercruysse	International Funding Advisor	KU Leuven
Koen Verlaeckt	Secretary-General	Flemish Interuniversity Council

Table 2: Overview of the respondents
Source: own composition

5.2.2 Questionnaire

During the interviews, a questionnaire was followed to ensure that all parts of the theoretical framework were covered. Yet, it was a deliberate choice to let the interviewees give their answers in larger stories covering multiple questions. Afterwards, follow-up questions were asked based on the topics that were not yet covered. In that way, the interviews were semi-structured. The questionnaire consists of three parts. The first part contains a general introduction to the research topic and some practical questions. Second, seven general questions

followed to understand the context of the internationalization of academic research in Flanders. If the respondent did not possess the expertise to answer a question, the question was slightly adapted to gain information about the organization of the respondent. Third, detailed questions on SD practices were the last part.

In four of the interviews, the questionnaire was adapted to be more relevant in light of the interviewee. These adapted versions were used in the interviews with people from the following entities: FWO, FIT, CSG, and the Flemish Department EWI. These questionnaires are available upon request.

5.2.3 Practicalities

The planning and execution of the interviews went as planned. The respondents received the questionnaire a week before the interview. The interviews were 60 or 90 minutes long, dependent on the expertise of the respondent. All interviews were administered via video call. No major interruptions of the interviews took place. Moreover, with prior consent, the interviews were recorded to improve the interviewer's notes during the processing of the answers leading to increased accuracy. When the descriptive case study was finished, the respondents were given the opportunity to provide feedback.

6 The ecosystem for the internationalization of academic research in Flanders

In this part, the case will unfold based on the documents and answers the respondents provided and other written sources. The case study consists out of three parts. First, an overview of the institutional context will be given. As will be shown, the diplomacy of Flanders must be interpreted as a form of sub-state diplomacy. Moreover, an explanation of the relevant actors will be given. This partly answers the questions of the organizational form of the SD-involved actors. Furthermore, the internationalization agenda of the Flemish universities will be discussed. Second, the connections between the actors (the SD practices) will be further studied. Special attention will be given to describe the configuration, interests, and actors of each practice. Finally, an analysis will be made in which the case will be critically analyzed in light of the SD literature. Furthermore, the case will be used to inform the literature.

6.1 Institutional context

6.1.1 The constitutional context

Belgium is a federal state. Besides the federal government, there are governments for the regions and the communities. On the one hand, the regions are linked to economic interests and territorially bounded competencies. On the other hand, the communities are related to language, culture, and person-bounded competencies. This latter includes education and the authority over the universities. The Flemish Government combines the status of a regional government (over Flanders excluding Brussels) and a community government (over Flanders including Brussels). Relevant for this case study is that the Flemish government responsible is over the 5 Flemish universities.

In foro interno, in foro externo. If a Belgian government has received the competence over an issue internally, then this government is also responsible for this competence externally. For this case study, the research at the Flemish universities is a Flemish competence, therefore the Flemish government is also externally responsible for it. Two complications arise. On the one hand, some international organizations only recognize states as possible members. This is for example the case for most parts of the European Union. Yet, these international organizations may interact with non-federal competences, while only Belgium as a country has a seat. In that case, the competent governments of Belgium meet to align their positions. If a consensus is found, then this consensus will be brought forward by a designated representative. If no consensus is found, then the designated representative does not have the mandate to act. On the other hand, the diplomacy by Flanders has to be seen as sub-state diplomacy. However, it is

diplomacy by a constitutional region and as shown by Criekemans (2010), it is quite elaborate. Furthermore, the Flemish government is fully competent over Flemish academic research. Therefore, it is argued that the findings from this sub-state Science Diplomacy can be related to the general debate on (state) Science Diplomacy.

6.1.2 Overview of main actors

6.1.2.1 The Flemish Universities

Flemish universities have a three-fold role: higher education, research, and service to the community. Research at the universities takes on the following forms. First, curiosity-driven research is performed. This is fundamental research without the request of an external party. Second, there is also fundamental research that follows from the request of an external party. Third, there is applied research. The latter can lead to further development through a commercial application. All three are interconnected.

There are 5 universities in Flanders: the University of Antwerp (UAntwerp), the University of Ghent (UGhent), the University of Hasselt (UHasselt), the Catholic University of Leuven (KU Leuven) and the 'Vrije Universiteit Brussel' (VUB). As the universities are a community competence the VUB also falls under the authority of the Flemish government. As mentioned above, the UHasselt preferred not to take part in this research.

The universities have central administrations that are involved with internationalization. This can become quite extensive. For example, the UGhent and KU Leuven have a platform or committee that is specialized in a certain country or region. In that way, the expertise about the foreign cooperation is combined in one place. Besides, the two mentioned universities have both an academic diplomat. These academic diplomats have experience in the Belgian and Flemish delegations abroad. The functioning of these functions and structures will be explained below.

6.1.2.2 The Flemish Department of Economy, Science, and Innovation (EWI)

In the Flemish political structure, the Flemish Department of Economy, Science, and Innovation (EWI) is competent for academic research. In that way, it is also responsible for the internationalization of academic research. EWI is responsible for the EU-platform. The EU-platform is a structure in which relevant stakeholders meet in a general meeting and working groups. The two goals are to circulate information between the stakeholders and to coordinate the Flemish position on European policy.

The Flemish department EWI also provides the financing of academic research. There are two general funds. The universities receive a certain budget from these funds based on an allocation key. The allocation keys have parameters that may refer to internationalization. However, these were included to represent high-quality research. On the one hand, the 'Bijzonder Onderzoeksfonds' (BOF) is for all academic research. In the allocation key, two parameters refer to internationalization. The amount of research output in which an international co-author is represented is taken into account. Also, the amount of money that the universities can obtain via the Horizon Europe programme affects the final allocation. Indirectly, this refers to internationalization as partners of at least 3 EU countries need to be present to obtain funding from the Horizon Europe programme. On the other hand, there is the 'Industrieel Onderzoeksfonds' (IOF). This fund is intended for applied research. It is also only open for universities, still, this research is often in cooperation or on the request of companies. The parameter with regards to the Horizon Europe programme is present as well.

6.1.2.3 The Flemish Department of Chancellery & Foreign Affairs (KBUZA)

In the Flemish Department KBUZA, an interview was performed with the Coordination unit, a horizontally oriented unit of KBUZA. This unit focuses on the coordination with other departments and other state actors. In general, KBUZA only takes on some support roles concerning the internationalization of academic research in Flanders. It provides services from which companies could benefit as well. At the same time, KBUZA orders research to improve the knowledge base of the department. Also, the sharing of knowledge and expertise with foreign partners is used to achieve foreign policy goals and sustain diplomatic relations.

6.1.2.4 Strategic Goods Control (CSG)

The unit Strategic Goods Control (CSG) of the department KBUZA is also relevant for the internationalization of academic research. CSG is a vertically oriented unit of the department. This unit is responsible that technology and knowledge that can be used for purely military and combined civilian and military purposes (so-called dual-use) is certified for export. The list of dual-use products comes from the European Union and export permits are given by three entities in Belgium, including CSG for Flanders. Tangibles and intangibles fall under this regulation. Originally, it comes from the proliferation of weapons of mass destruction towards other states. After the Cold War, a multipolar world arose and non-state actors, terrorists, and destabilized countries also became more present. In that way, more attention was given to dual-use products, technology, and knowledge. Currently, the focus is on so-called emerging technologies and their military usage.

6.1.2.5 The Flemish Interuniversity Council (VLIR)

The 5 Flemish universities are the members of VLIR. The large majority of the funding comes from the universities with a small minority of the budget provided by subsidies from the Flemish Departments of Education and EWI. VLIR has 2 main purposes. On the one hand, VLIR is a permanent meeting place where the 5 universities can discuss relevant topics for the Flemish university landscape. There is a working group for a range of topics. Examples are internationalization, knowledge migration, and information sharing for travel to risk areas. On the other hand, the VLIR takes the role of a lobby organization for the interests of the Flemish universities. This lobbying is directed towards government actors, other parliamentarians, or stakeholders that may influence the interests of the Flemish universities.

Two related organizations to the VLIR should be mentioned. First, VLIR UOS is responsible for all domains (including research) related to development cooperation. More specifically, VLIR UOS is focused on the implementation of the financing systems in this field. While it is the same legal person as VLIR, it is an autonomous organization. Moreover, it is established at a different location more in the area of other Belgian development cooperation entities like Enabel. VLIR UOS resides also to a larger extent in the political competences of the federal government. Second, the VLUHR is the combination of the organization for Flemish universities (VLIR) and the counterpart for the Flemish colleges. As will be shown below, VLUHR is relevant as it has a responsibility in the state missions.

6.1.2.6 The Research Foundation Flanders (FWO)

The FWO is an independent agency that works within the policy framework of the Flemish department EWI. The FWO receives its funds mainly from the Flemish government and to a lesser extent from the federal government. This agency provides funds for formal and strategic, high-quality basic research. No thematic restrictions are present and every research proposal that aims to provide excellent research may apply for funds. As an independent agency, the FWO has its own Board of Trustees that sets the specific policy guidelines. In this board, representatives of the universities are present. Internationalization leads to competition with other high-quality researchers stimulating the quality of research in Flanders. Internally, two-thirds of the panel members to review research proposals are international experts. Moreover, the external peer review of research is fully performed by international experts.

In the project funding schemes, between 10% to 20% of the funding provided for research by the FWO may cross the border. However, as FWO recognizes that internationalization can improve the quality of research, they set up two types of funding to support international

research. On the one hand, funds for the outgoing international mobility of researchers are provided. These funds can be used by researchers to travel to conferences, workshops, and research trips. Moreover, researchers can use these funds to organize conferences and workshops for incoming international researchers. On the other hand, international projects can be funded via partnerships with foreign counterparts of the FWO. These project funds can be used for equipment, personnel, and the general funding of international research.

6.1.2.7 Flanders Investment & Trade (FIT)

Flanders Investment & Trade is an independent governmental agency within the same policy domain as KBUZA. The leading people from KBUZA and the agencies in the policy domain have regular meetings to exchange information. FIT has its own legal personality and board of directors. Its objectives are to attract foreign investments and to promote and support the Flemish export in products and services. Flanders as a knowledge area is an important argument among others. FIT is structured around an investment and a trade branch. For investment, prospects are made. Also, sector federations and knowledge institutions are supported in the promotion of Flanders as a strong knowledge area. For trade, 10.000 support requests are annually handled. FIT takes up the role to be the first contact point for an enterprise looking to go abroad. On the trade-side, there are also partnerships with sector federations among others. Import and outsourcing are not within the scope of FIT. There is also strong cooperation with the Flemish Agency for Innovation and Entrepreneurship (VLAIO). The general tasks that FIT performs are raising awareness, informing, guiding, and financing. FIT activities are always related to commercial activities. As a result, universities can use the same services as a normal company. While the Flemish knowledge institutions (for example VITO) have a specific FIT account manager, the universities have not.

FIT employs around 330 employees with a majority of them stationed abroad. The FIT representatives are one of the several types of Flemish representatives abroad. FIT representatives are responsible for the economic and commercial representation. They study the local landscape, build a network of relevant contact persons, obtain information, and help by opening doors. Second, the representatives of Visit Flanders are responsible for tourism. Third, the political representatives for Flanders are responsible for each domain that does not fall explicitly within the competences of FIT and Visit Flanders.

One needs to keep in mind that research by universities is considered the same as research by companies and that there always needs to be a commercial aspect for FIT. Still, two evolutions may make FIT more relevant in the stimulation of the internationalization of academic research.

First, FIT (and VLAIO) participated in the Enterprise Europe Network. One of the reasons why FIT participated in this project was to bridge the gap between research and commercialization. While in the past, FIT had to wait till the research community made the crossing, this has now partly been reversed. The valorization of research (by enterprises, universities, knowledge institutions, or start-ups) is namely a key objective of FIT. At this time, FIT is still experimenting how far they should go on the research-commercialization axis. Via this project, FIT feels that it has obtained knowledge on fundamental research and European research projects.

The second evolution is that the number of Science & Technology (S&T) Counselors within the FIT network has recently expanded. These representatives were already more than 15 years present in areas like Palo Alto, New York, Singapore, and Tokyo. The S&T Counselor is a FIT representative who is able to understand complex systems, products, and technologies. They have 4 official objectives. First, they focus on putting Flemish technology-driven companies in touch with the right partners abroad. Second, they attract technology-driven players from abroad to Flanders. Third, they help all Flanders-based innovation players with connecting with foreign actors. Finally, they focus on marketing Flanders further as a tech region. They focus on one or more of these three domains: Digital Tech, Health Tech, and Climate Tech (Flanders Investment & Trade, 2021). In some way, the S&T counselors remain generalists as they need to be able to cover more than just one technological sector and to support commercial functions (from selling to finding partnerships). They are also responsible to follow up on the university, knowledge, and research landscape in the countries they are responsible for, as it is considered to be part of the larger economic context. The S&T Counselors are selected for their expertise in the technology and commercial field. Currently, there are 10 S&T Offices in the worldwide network of FIT.

6.1.3 Internationalization agenda of the universities

As mentioned above, the universities have three functions: research, education, and service to the community. The internationalization of a university takes place in these three domains. The reported internationalization objectives (not limited to research) for the Flemish universities by the respondents are focused on attracting talent and resources and promoting the university externally. In terms of Flink and Schreiterer (2010), the access and promotion interests are clearly visible from the side of the universities. First, internationalization is seen as an opportunity to access talent. This talent can take the form of students, Ph.D. candidates, science personnel, and professors. Second, it can be used to access financial resources. Third, it is also

an opportunity for partnerships. The focus is then to show that one is an interesting partner by displaying the knowledge and capabilities of the university.

The motivation to internationalize is three-fold: quality improvement, exchange between different cultures and conceptual frameworks and to access international funding. First, the respondents from the universities, VLIR, FWO, and EWI stated that the internationalization of academic research is key for the improvement of its quality. International competition stimulates the delivery of high-quality research. Moreover, cooperation enables researchers to build upon the latest discoveries in the academic world and to work together with the best in the field. For example, when the genetic code of Covid-19 was discovered, researchers from all over the world continued to work further upon it. One of the university representatives mentioned how international academic cooperation is needed to deal with global challenges like water scarcity, climate change, etc. These benefits are also the ideas behind the EU policy of Open Science. Second, internationalization, in general, enables the creation of valuable exchanges between different cultures. Moreover, it is possible to bring people with different conceptual frameworks together. This enables interesting interactions and can lead to new insights. Third, internationalization opens the door for new financing opportunities. The VLIR respondent indicated how the traditional funding of the universities has been impacted by incomplete indexations and late implementation of the growth of the funding. In that way, foreign funding may be interesting to obtain. The applications for foreign funds are supported by state actors. For example, there is the National Contact Point by VLAIO and FWO for practical guidance on the application process of Horizon programmes.

The EU is becoming a major player in stimulating internationalization. The EU does this via policy formulation and financing of cross-border programmes. The actions of the EU trickle down into the policy on lower levels. For education, there are the well-known programmes like Erasmus. Currently, the EU is also busy with stimulating the creation of European universities. On the topic of research policy, the EU is at this moment looking into a vision for the future of research. The European Research Area (ERA) is interesting as it should be an internal market for knowledge and research. Also, the European universities play a role in the future of research in Europe. Moreover, the combination of principles like open science and strategic autonomy is discussed. Also, practical considerations like the reward mechanisms for researchers are investigated. On the topic of research funding, the Horizon programmes are important sources for funding.

The universities are autonomous actors. Moreover, the researchers/professors within these universities have a large degree of freedom to establish foreign research relations. Therefore, it is important to recognize that a lot of research relations are realized bottom-up. Top-down, universities may adopt certain policies to partner with a selection of foreign institutions or to stimulate researchers to internationalize their research. The universities always partner with foreign institutions and not with foreign states. The universities cooperate and use the provided means by the Flemish government if it is beneficial. However, the universities do not wish to get partner institutions imposed. The Flemish government has also not the means nor the intention to do so.

6.2 Practices concerning the internationalization of academic research

In this part, all practices related to the internationalization of academic research at the Flemish universities will be discussed. These practices are based on the interviews conducted with the abovementioned respondents. In Table 3, an overview of the practices is given. Moreover, in Figure 3, the relevant actors and their interactions are shown.

	Permanent	**Ad-hoc**
Strategic/policy formulating	• EU-platform to determine common Flemish position • EWI's role in European negotiations via the permanent representation • VLIR to determine common position	• European universities as input provider for EC • VLIR as input provider for various political actors • Reactions to international political events • VLIR as input provider for various political actors • European academic network associations as input provider for EC and various political actors • Universities as providers of academic expertise for KBUZA*
Operational/ policy executing	• State missions • Belgian economic missions • University missions (parallel or independent) • EU-platform as information-sharing platform • VLIR as information-sharing platform • European universities as new organizational initiatives • European academic network associations as information-sharing platforms • Review committees like dual-use committees on university level • EWI following up on European policy frameworks	• Ministerial missions • Provincial missions • City missions • Support and outreach by CSG • Sharing of academic expertise by KBUZA* • Flemish political bilateral statements • Reaction to international political events • Application through WEAVE programme or extra-European project funding at the FWO • Support by diplomatic networks

*Table 3: Overview of practices related to the internationalization of the academic research at the Flemish universities. The practices marked with * are interesting SD practices that are unrelated to the internationalization of academic research*
Source: Own composition

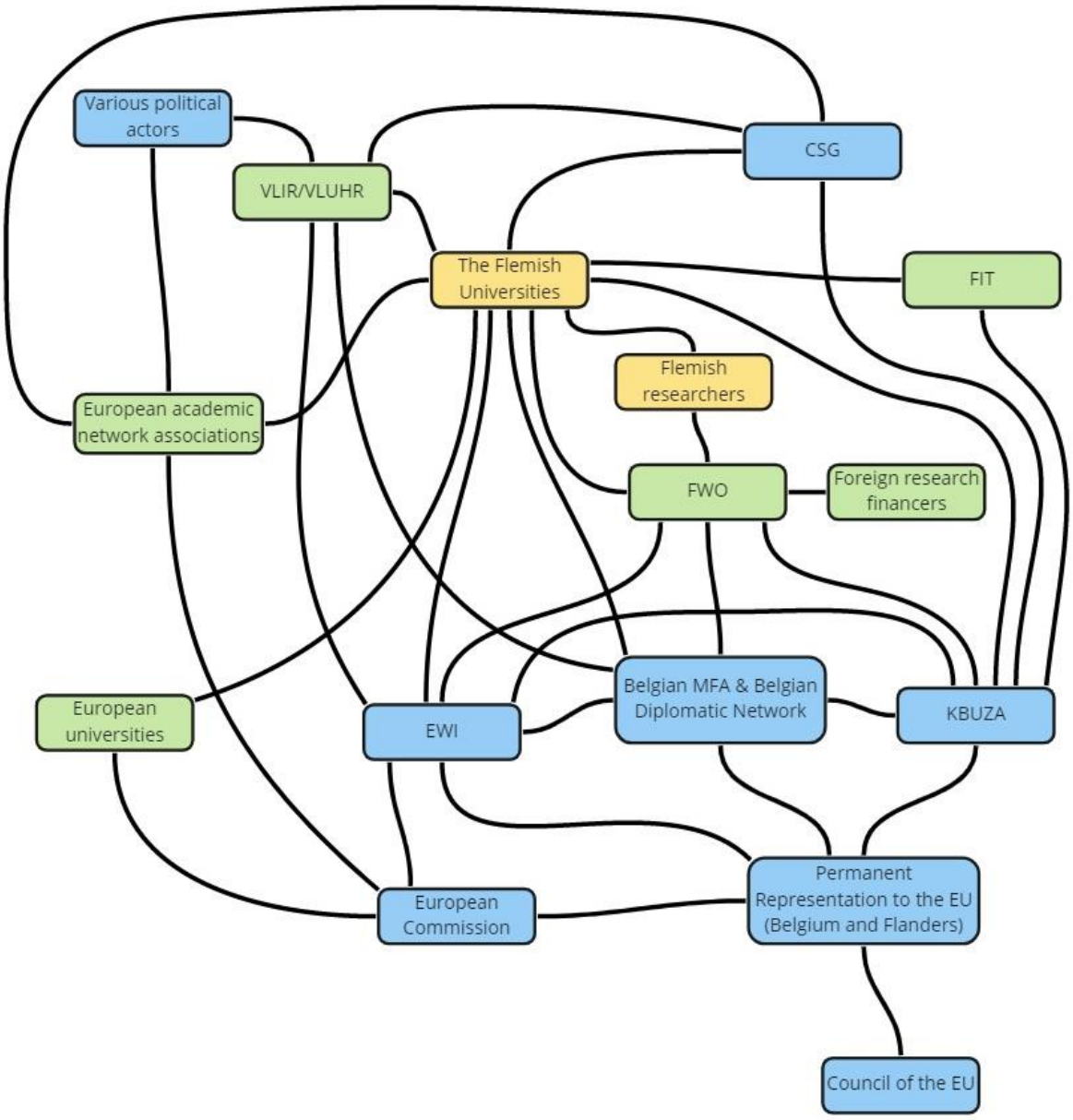

Figure 3: Representation of the actors and their interactions in the internationalization of the academic research at the Flemish universities
Source: own composition

6.2.1 Policy influencing

Actors: VLIR, the Flemish universities, and various political actors

Short description: The universities meet to exchange information in the context of the VLIR. Moreover, common policy positions on topics like knowledge migration are discussed. These policy positions are delivered to the relevant political actors via a VLIR representative.

6.2.1.1 Configuration

The work of the VLIR is situated on a strategic and ad-hoc level when providing policy positions to policy-makers. The decision structure of the VLIR is a strategic and permanent practice. As an information-sharing platform, the VLIR is a permanent practice on the operational level. There are working groups and the meeting of (vice) rectors within the VLIR. These working groups are linked to a certain topic like internationalization and knowledge migration. In these working groups, the universities are represented by personnel that has relevant expertise. One of the university representatives is the chair of the working group. In that capacity, they can decide to prepare the meeting or leave it to the responsible employee of the VLIR secretary. The VLIR secretary also remains seized on relevant matters and follows proactively relevant domains. For the latter, they use VLEVA among other sources. VLEVA provides information on the European Union to Flemish actors. All universities can add relevant topics to the agenda. Decisions of the working groups are sent to the meeting of (vice) rectors of the universities. If they align on a common position, the secretary-general of the VLIR will advocate for this position with the relevant political actors. Concretely, this can happen through meetings, open letters in the press, and direct communication with government officials and parliamentarians. For example, Johan van Overtveldt was contacted when the negotiations on the European Multiannual Financial Framework were taking place. Another example is the Kompas document (Vlaamse Interuniversitaire Raad, 2021). In that document, the positions on crucial topics by the VLIR are bundled and related to the Flemish government agreement.

6.2.1.2 Actors

The actors that meet within the VLIR structure have a similar background and tensions are limited. On the lower level, experts meet and on the higher level, the (vice) rectors meet. All involved people are those that are accustomed to policy functions.

6.2.1.3 Interests

The interests of the universities mostly align as topics are discussed that are of importance for all universities. Of course, the exact position may differ on some topics. There is no tension in

interests between the VLIR and the universities as the VLIR is an entity that is responsible for promoting the interests of the universities. There is also some alignment with CREF, the counterpart of VLIR in Wallonia

Towards the political actors, some general interest differentiation may be present. The government looks at academic research mostly through the lens of innovation and commercialization. In that way, there is a tendency to prefer applied research focused on the short term. Of course, the universities are also concerned with long-term, curiosity-driven research.

6.2.2 Coordination on European policies (EU-platform)

Actors: EWI, KBUZA, VLIR, the Flemish universities, the Belgian permanent representation to the EU, the Council of the European Union, and the European Commission

Short description: The Flemish department EWI has established the 'EU-platform'. In this structure, all relevant Flemish actors for research, innovation, and technology are combined. The platform is used to share information and to determine a Flemish position. This Flemish position can be used (via the Belgian structure) in the Council of the European Union or informally in the European Commission (EC).

6.2.2.1 Configuration

The Flemish department EWI has established the 'EU-platform', which is a permanent structure. This structure consists out of a steering committee and 5 permanent working groups. Ad-hoc working groups can be established if needed. EWI coordinates the meetings, the agenda and also serves as the secretariat of the EU-platform. Nevertheless, the participating organizations can ask to place certain topics on the agenda. Multiple parties are represented like the universities, FWO, VLAIO, FIT, VLEVA, and KBUZA among others. The full quadruple helix, meaning the government, knowledge-producing institutions, enterprises, and civil society, is represented (Departement Economie, 2021a). The universities are represented by a seat for VLIR in the steering committee. The universities can participate in the working groups as individual members. In that case, representatives of the relevant central administrations are present in the working group besides the representatives of the other organizations.

The EU-platform has mainly a two-fold goal. On the one hand, the EU-platform is used to share information on relevant topics. This is the operational/policy executing aspect of the EU-platform. On the other hand, the EU-platform has a coordinating role for the Flemish and Belgian position in the European Union. The latter may be necessary if the EC or the Council of the EU proposes a certain policy and asks for feedback. The Flemish position can be directly sent to the European Commission via a reflection paper. However, this is reserved for topics that are of high importance for Flanders. Normally, the Flemish position (after being determined in the EU-platform) is discussed in another Belgian structure with all competent governments. If a Belgian consensus is reached, then a designated representative will advocate for it in the Council of the European Union.

KBUZA is also involved in this policy formulating process. First, it has a seat in the EU-platform, so it can remain up-to-date with the policy discussions that are taking place. Second,

KBUZA is also present in the permanent representation of Belgium to the EU. EWI has an attaché in this representation as well. The Flemish diplomat of KBUZA can support the policy expert. For example, the diplomat can gather information on the position of other countries and which deals are possible.

As said, EWI is responsible for the external dimension of its competences. In that way, it is also heavily involved in the European policy-making and the follow-up, both in a permanent way. The policy formulating role is related to the (permanent) comitology and working groups in cooperation with the EC. On the one hand, the department prepares together with the EWI attaché the negotiations for new policy frameworks in the comitology. Moreover, the EWI attaché is supported by the department during the European negotiations. On the other hand, EWI's position is represented in working groups on topics like the ERA. On a policy executing level, EWI takes up the role of following up the decided policy frameworks and transforming them to project calls.

6.2.2.2 Actors

In the EU-platform a lot of people with different backgrounds meet and tensions between them may be present. One of the respondents with a research/policy background declared that it sometimes happens that a meeting is not focused enough on the content. Instead, the meeting is said to digress in superficial content and non-concrete language usage.

6.2.2.3 Interests

A policy-oriented and political-oriented separation may be possible, however, this was not found to be present. For example, it was argued that the diplomats and the policy experts in the permanent representation complement each other well. This could be different as the diplomats are also involved with the relation with other political actors and may push for deals. However, it was said that EWI and KBUZA cooperate well to secure funds for which the Flemish universities can compete. Besides securing funds, there are other responsibilities like negotiation about policy topics.

The interests of EWI and the universities greatly align on most issues. Moreover, the EU-platform was seen by the universities as a useful structure to coordinate the Flemish position and to receive information on relevant topics.

6.2.3 Organization of universities on a European level

Actors: The Flemish universities, European universities, European academic network association, the European Commission, and various political actors

Short description: The Flemish universities organize themselves on a European level in two ways. On the one hand, they participate in European universities. On the other hand, they are part of European information-sharing and lobby networks.

6.2.3.1 Configuration

A recent trend is that local universities form cross-border European universities. The Flemish universities take part in this evolution. For example, UAntwerp, UGhent, KU Leuven, and VUB are respectively part of YUFE, ENLIGHT, UNA Europe, and Eutopia. These projects are financed with European funds and are formalized organizations with agreed deliverables. These projects could become real European universities in the future with shared master's programmes. While the focus is more on education, it could also extend into research and innovation. The latter is tested for example by the UAntwerp with YUFERING. It is said that a lot of red tape has to be slashed to become truly one university. In general, it can be seen as a permanent, policy executing practice.

The European universities started with the vision by Macron to support and utilize the strengths of the European Union. At the time, China was overtaking the EU in knowledge production. The EC took the lead and did a call for networks of universities that were interested to test this concept. In that way, the universities needed to align themselves with other foreign universities in a group. Funds were provided to focus on education, but also on research. In Flanders, these funds are not supplemented by funds of the Flemish government, unlike in most other countries. The EC is not only a provider of funds but also relevant knowledge and expertise. Moreover, the EC is interested in how the European universities realize the deliverables and which solutions they design. Thus, the European universities receive a lot of freedom and can influence the agenda in infrequent meetings with the EC. In the latter form, it is an ad-hoc, policy formulating practice.

At the same time, the Flemish universities are members of information-sharing and lobby associations. For example, UAntwerp is a member of YERUN and KU Leuven of LERU. VUB is part of UNICA, but this organization limits itself to information sharing and refrains from lobbying activity. They are grassroots organizations that were founded by a collection of universities. These organizations follow the relevant evolutions in European policymaking.

Moreover, information and best practices are shared between the members. In these forms, it can be seen as a permanent, operational practice. Finally, they are lobby organizations towards the European Commission and/or European Parliament. It can be seen as an ad-hoc, policy formulation practice in the latter form as the input is provided infrequently.

6.2.3.2 Actors

Universities act with each other and with political actors on the European level. Logically, the universities are represented by people who are focused on the relevant policy topics and policymaking like in VLIR. However, even a person with a background in the Flemish public administration noticed that one should be ready to adapt to the unique environment of the EC. The structure and the functioning of it are based on a different scheme than the political environment in Flanders.

6.2.3.3 Interests

The interests of the universities generally align within these organizations. Also, while the European organizations compete with each other, no large tensions were mentioned. Also, it was said that the European Commission welcomes the input by the lobby organization to be informed about the needs and policy positions of the universities.

The tension between the interests of national governments and the EC was mentioned on the level of the European universities. The EC would like to cut the red tape and make unrestricted travel of knowledge and researchers possible. However, the national governments also want to control that their taxpayers' money benefits 'their' science community. The knowledge and innovation outcomes of research are namely an important source for the economic development of a region or country.

6.2.4 Political bilateral statements

Actors: KBUZA, EWI, and FWO

Short Description: The connections between Flanders and other partners like countries and regions may sometimes be underlined by a joint bilateral statement. In Flanders, the statements are managed by KBUZA. Clauses about certain policy domains are provided by the relevant departments or agencies. Interdepartmental tension may arise due to the different nature and interests of the actors.

6.2.4.1 Configuration

The government of Flanders has multiple relations abroad. These relations are sometimes underlined by a formal document. This document could be a treaty, joint political statements, memoranda of understandings, etc. Of course, such documents need content and may also include clauses on academic research. KBUZA will ask EWI and the FWO for a clause as they are the competent Flemish department and agency. Moreover, the actions following out of the included clause are the responsibility of the latter. Often a more symbolic text is provided for the clause on academic research rather than hard commitments. This practice can be described as operational. Namely, the foreign policy on bilateral relations is executed. Also, the practice has an ad-hoc nature.

6.2.4.2 Actors

The two departments are logically different in nature. KBUZA is focused on the relationship with foreign partners, while EWI is specialized in its policy domain. Looking at scheduled meetings, both departments only meet every month in the strategic meeting of all Flemish departments. However, this meeting is to discuss a large variety of topics. Also, the respondent for EWI mentioned that it sometimes feels that the science community is being used for political relations. At the same time, the respondent mentioned that these documents may be useful for other departments and agencies. Moreover, the language in the documents remains vague and he mentions that there is a tendency to sign new documents rather than to evaluate the previous documents. The background of the respondent is that of a scientist with a career in research and policy. The respondent of the FWO also stated that in the document a more diplomatic way of writing is used. However, this did not bother the respondent.

6.2.4.3 Interests

The interests of the Flemish departments KBUZA and EWI do not align on this practice. On the one hand, KBUZA is concerned with the relationship between Flanders and the other

signing partner. In that way, a description of the relationship on multiple topics (like investments, tourism, education, research) is included. In memoranda of understanding, it is often only about showing the relation, while in a treaty more concrete future cooperation can be mentioned. KBUZA especially prefers to include a clause on academic research with those partners with whom Flanders already has a strong research relationship. On the other hand, EWI is focused on stimulating multilateral research as it is deemed to be more competitive. In a multilateral environment, the criterium of the highest quality is said to be the most important. In a bilateral environment, one restricts the science community with partners based on other parameters like political relationships. Also, it is more efficient to work on one multilateral programme than on multiple bilateral programmes. As a result, EWI tries to fend off the request to write a clause. If that is not possible, a more general text is provided only including intentions to look at a further relation without hard commitments.

There is a clear difference in opinion over how the two actors perceive this practice. On the one hand, EWI sees it as an obligation that is not in line with their view on international research (multilateral). Moreover, it is believed that it is a form of duplication as concrete projects are the responsibility of the agencies. On the other hand, KBUZA stresses that the department of EWI is free to write the requested clause. Moreover, the view of KBUZA is to highlight the existing relations in these documents and not to make hard commitments in detail for future cooperation.

The FWO sees it as a general way to promote the importance of science. Also, the established research relations can be underlined in this way. The FWO does not mind writing a clause for such documents as they can focus on figures on the current relations. The document is not seen as a way to establish new hard commitments.

6.2.5 Support by diplomatic networks

Actors: The Flemish universities, KBUZA, FIT, and the Belgian diplomatic network

Short description: The Flemish universities may use the services provided by the Belgian and Flemish diplomatic networks. Via these ways, information or access can be obtained. Moreover, problems related to international research can be solved via these diplomatic networks.

6.2.5.1 Configuration

The interaction between the universities and the Flemish and Belgian diplomatic networks is operational. It is the execution of the policy that the diplomatic networks provide services to their constituents. In that way, the universities are helped like any other enterprise. It is also an ad-hoc relationship. The universities contact the diplomatic networks when they require certain support.

6.2.5.2 Actors

Multiple actors may be involved. The universities have often personnel in their central administration that are used to handle these support requests to the diplomatic networks. Structural problems may also be dealt with by a rector. There is a large variety of diplomatic representatives. Of course, there is the state diplomacy by Belgium, which is competent for the visa. The major benefit is that it has a large network. The representatives of FIT and Visit Flanders are responsible for their core activities respectively related to companies and tourism. The political representatives of the Flemish government are in charge of the Flemish competences that are not dealt with by FIT and Visit Flanders. This includes political, social, cultural, and non-economic science matters. The universities use the most relevant representative according to the situation.

The reliance of the universities on these diplomatic networks may not be overestimated. The universities are large networked organizations. They have large amounts of expertise and in some fields more than the state actors. Moreover, international academic research relations often start bottom-up from the researchers. For example, the UGhent campus in Seoul grew out of a personal relationship between a Korean and a Belgian professor. The diplomatic networks were used to better understand the local government's plans and the possibility for subsidies.

6.2.5.3 Interests

The interest of both types of parties are aligned as progress for the universities also helps the constituency for which the diplomatic network is responsible. Three types of interactions can be discerned. First, the diplomatic networks could be used to obtain information. This

information could range from country-specific to project-specific information. For example, UGhent obtained additional information on an international campus project in Seoul (South Korea) via diplomatic representatives. Second, the diplomatic networks could be used to open doors and create connections with relevant local actors. Third, international research may come in conflict with state borders. For example, visa issues may arise for traveling researchers (especially in Covid-19 times) and research equipment may be halted at borders. Diplomatic actors can be used to help solve the situation.

6.2.6 Impact of international politics

The academic research at the universities does not take place in a vacuum and neither does its internationalization. The impact of international political events on international academic cooperation will be discussed. Besides, we will look at dual-use export regulation and knowledge security. The latter is a new domain that is rising within Europe and Flanders. It is related to strategic autonomy.

6.2.6.1 International political events

Actors: The Flemish universities, VLIR, and various political actors

Short description: The universities do not operate in a vacuum and international political events influence the freedom of movement of the universities. To deal with all possible ethical concerns (in a broad sense), universities have committees that screen research requests. Moreover, the universities may come to common standpoints within the VLIR on foreign issues hindering international research. Dual-use issues and the new strategic autonomy rhetoric by the EU are discussed in other sections.

6.2.6.1.1 Configuration

Universities operate state-agnostic, meaning they do not take national borders into account when looking at partnerships for academic research. This is in line with the fact that universities cooperate on an institutional level and not a governmental level in foreign countries. Several committees are established to see whether research is conducted ethically. These committees can be concerned with human rights, scientific integrity, protection of data, etc. In that way, research requests are reviewed on a case-by-case basis and there is in general no a priori exclusion based on a country.

Still, international political events may have an impact on the universities. These events cover a wide range of topics. Due to the Brexit, the strong British research ecosystem falls outside of the normal European research projects. Also, the universities have to deal with political sensitivities like in the case with Israel or China and Taiwan. Furthermore, the detention of a VUB guest professor in Iran caused the universities and especially the VUB to react. Moreover, the universities are more and more the target of cyber espionage activities. Finally, in some parts of the world, the freedom of scientific research is too hindered and relations have to be put on hold.

These international political events can be dealt with in multiple ways. The universities may respond individually, in cooperation with their European organizations, or as a group. The latter

is facilitated by the existing VLIR structure. On the topic of cybersecurity, VLIR has a cybersecurity working group. Moreover, the VLIR is advocating that the universities are considered critical in its Kompas 2024 document (Vlaamse Interuniversitaire Raad, 2021). In the case of the detention of the VUB guest professor, self-regulation was agreed upon among the universities. The cooperation with Iranian institutions was even halted in general. Only academic cooperation is still possible after a case-by-case review, reverting the general state-agnostic posture of the universities. The last example is that in a VLIR working group a 'human rights test' was developed to assess foreign institutions. The reactions can be policy formulating and policy executing in nature with always an ad-hoc perspective.

6.2.6.1.2 Actors

While the universities agree in general that one needs to behave responsibly given the external world one is part of, the researchers may feel hindered. However, one respondent said that the majority of the researchers recognize the usefulness of the university policies and that it may be more the extra administration that is felt like a problem than the principles behind it.

The universities are quite autonomous to deal with this field and the KBUZA has no intention to restrict universities. On a governmental level, it may be possible that parliamentarians ask questions about the public financing of research with politically sensitive countries. Also, universities may interact with foreign ambassadors to welcome them and to put issues hindering international research cooperation on the agenda.

6.2.6.1.3 Interests

The interest of the universities is to have in principle no hindrances for academic research. Project funding limited to certain countries is therefore seen as opposed to the scientific nature. However, they acknowledge that they do not live in a separate environment. In that way, the international political sphere is part of the external environment that they are embedded in. For example, UGhent writes human rights clauses into cooperation agreements with other institutions. Following that insight, the universities try to respond responsibly to external impactful events. Some of the respondents mentioned that the universities are also pushed into this direction as research financiers expect that universities and researchers to take up this responsible role. Of course, it is one of the many evolutions influencing research like gender and citizens' science. So, resources need to be allocated to many fields asking for attention.

6.2.6.2 Dual-use

Actors: The Flemish universities, CSG and VLIR

Short description: The risk of military use of academic research is increasing. Dual-use controls are performed by CSG and internal dual-use committees.

6.2.6.2.1 Configuration

The unit Strategic Goods Control (CSG) is responsible for providing export permits for dual-use technology. Physical products, but also intangible software, construction plans, knowledge, and online publications fall under the dual-use export regulations. The list of dual-use products is determined on the European level. CSG performs risk analyses, answers policy questions, and also gives input for the Belgian position in Europe. In 2008, CSG did a first large outreach to inform universities that they should also act compliant with the export regulations. In 2017, VLIR created an information document for the universities with input by CSG for this topic. This document will be updated via an ad-hoc working group in VLIR. Currently, the most frequent interaction between the universities and CSG are the specific questions that universities ask about dual-use regulation. Also, a connection was made between CSG and LERU to exchange information and advice in both ways.

On the level of the universities, dual-use committees are established. These committees are not mandatory as the universities are only obliged to follow the dual-use laws. However, it was mentioned that these committees are a valuable link between the researchers and CSG. The committee can keep up-to-date with the dual-use regulation, assess questions by researchers and contact the CSG. Moreover, CSG has not the capacity to check everything as all research, publications, conferences, and knowledge exchanges fall under the export regulation. Therefore, the internal dual-use committee provides a valuable service for both the researchers as CSG. The support and outreach by the CSG is an operational, ad-hoc practice. The dual-use committees are operational, permanent practices.

6.2.6.2.2 Actors

This topic has a direct impact on the work of the researchers. The normal flow to a publication may be hindered. Also, extra administration is needed. The policies of the universities and the legal framework oblige the researcher to take it into account. The practical side may be seen as more hindering than the principle.

The respondent of the CSG recognized that this extra administration may be seen as hindering because the researchers need to take into account the guidelines and regulations from multiple

fields. It should be noted that the respondent has a research background (Ph.D.) and worked in the field of policy afterwards. From the side of CSG, it may be difficult to understand the scientific papers and to 'translate' and compare its content to the dual-use technology list.

6.2.6.2.3 Interests

The interest of CSG is limiting the risk that Flemish technology is used for military purposes abroad. They do not want to limit fundamental research unless it is concrete enough to use it for military purposes. This interest may come in conflict with the universities that want to perform freely academic research. However, one should make the difference between the principle and practice of open science. While the universities stated that the best science is open science, they also stressed that they are embedded in the real world. In that way, it was found logical that a university takes its responsibilities. Information campaigns also helped to inform the universities of the risks.

For the researcher, it may be difficult to accept that research is limited or that some cooperation cannot be continued. This is especially the case if the researcher receives paid foreign research personnel. It was reported that most professors understand the principles and follow them. A minority still does not want to recognize the present risks.

6.2.6.3 Strategic autonomy

Actors: The Flemish universities, CSG, EWI and VLIR

Short description: The openness of Europe and its dependency on the world has become a point on the European policy agenda under the concept of strategic autonomy. Therefore, knowledge security is rising as a new domain in the academic research ecosystem. The impact of the strategic autonomy vision by Europe is not yet clear for the academic research system.

6.2.6.3.1 Configuration

The concept of strategic autonomy is trickling down in the Flemish policy field. As a result, there is a new working group in the EU-platform (by EWI) on the topic of knowledge security. However, the respondents were still waiting to see how this working group will develop over time.

6.2.6.3.2 Actors

Strategic autonomy is still being discussed in policy circles. However, multiple parties will be involved with it. Their background may cause them to have different views on the implementation of the concept.

6.2.6.3.3 Interests

The respondent of CSG mentioned how the paradigm in Europe is shifting. From a complete openness, one sees that Europe is asking for reciprocity and putting conditions on certain types of research with non-European countries. Of course, one is not striving for a decoupling. Yet, a critical mindset about a European vision on international research is rising. This includes that one considers in which field one wants to be self-supporting, in which fields one wants to cooperate, where one finds the resources to do so, etc.

One of the non-university respondents mentioned how a country like China was marked as a partner, a competitor, and a systemic rival by the EC. The civilian and military environments are intertwined and there is a big ongoing campaign to import as much technology as possible. In that way, the openness to China is likely to be closed again. Another issue mentioned by another respondent is that a free rider's situation may arise if openness is combined with a lack of reciprocity from other parties.

A limit on research or extra guidelines on strategic autonomy would be more difficult to explain to researchers than for dual-use products. This is a result of the fact that strategic autonomy is a much more politicized word and soft concept than military usage. However, it is still to be defined what the impact on researchers will be.

6.2.7 Academic diplomacy

Actors: The Flemish universities and KBUZA

Short description: While academic diplomacy is a policy present in the Flemish administration, the concept is not well known or understood. Moreover, KBUZA has only a support role in the internationalization of academic research. At the same time, KBUZA and the Flemish interests may benefit from this internationalization.

6.2.7.1 Configuration

In 2011, the predecessor of KBUZA agreed with the Flemish universities on a protocol for academic diplomacy. The goal was two-fold. On the one hand, it was the objective to stimulate the internationalization of Flemish higher education and research. On the other hand, the objective was that the image of Flanders could be boosted via academic diplomacy (Departement Kanselarij & Buitenlandse Zaken, 2021).

Multiple practices of an ad-hoc, policy executing nature are mentioned in the protocol. Ministerial missions, promoting the knowledge base of Flanders, demand-based diplomatic support, a co-funding scheme, stimulating cooperation with developing economies, and improving the scientific knowledge of the foreign representatives are mentioned. Remarkably, many of these practices are described in this case study. Still, the concept of academic diplomacy is not well understood currently and these practices are not necessarily seen as academic diplomacy. For example, one of the university respondents thought academic diplomacy was only about education and not research. Another respondent noticed that it was unclear which practices may be considered academic diplomacy.

One has to be aware that this does not mean that KBUZA is the central actor in the stimulation of the internationalization of academic research. The department sees itself more as a supporter of the actions of the universities in this domain. The universities are seen to be networked actors having large international networks on their own. Moreover, the respondent of KBUZA refers to the size, capacity, and history of the universities. In that way, KBUZA has also not the expertise in international academic research as the universities or EWI have. KBUZA sees itself as an actor that can help with certain specific questions or open doors where needed. This is done via the only ‘instrument’ that KBUZA has to help the universities in this field, namely its representatives. A small budget for academic diplomacy was in recent years canceled. This budget could be used by the universities for academic diplomacy. In practice, this was used to

participate in state missions. It was co-financed by the Flemish Department of Education and KBUZA.

The Flemish department KBUZA is also interested in what the science community can mean for them. First, the department has a budget to finance academic studies. In that way, it can build its expertise on relevant topics. For example, research was funded about Central and Eastern Europe or development cooperation. The department tries to be evidence-based and academic studies are an ideal way to realize that. This is seen as critical as climate, drought, pollution and many topics have a scientific aspect. Second, the connections that Flemish researchers make, may be beneficial for Flanders in the long run. From these connections, soft power and reputation can be derived or economic opportunities may follow. However, this is an interesting by-product and, as mentioned, this internationalization is not actively stimulated by KBUZA.

6.2.7.2 Actors

The relevant actors are the universities and KBUZA. For an evidence-based KBUZA, the universities are a provider of input. For the internationalization of academic research, KBUZA is a provider of support services. Due to their different roles and responsibilities, there is no noticeable tension.

6.2.7.3 Interests

The current interaction of KBUZA with academic research, namely importing academic research, is seen as needed to be able to deal with so-called global challenges. These challenges will eventually also have an impact on Flanders in a way, so it is seen as logical that Flanders is involved in addressing them.

KBUZA sees the internationalization of academic research as an opportunity for soft power, reputation benefits, or economic benefits. The interest of the universities is to remain independent actors. Still, these interests do not conflict with those of the universities as KBUZA is not actively guiding the internationalization of these objectives.

6.2.8 Facilitation of international research by research financers

Actors: FWO, Flemish researchers, and foreign research financers

Short description: The FWO has partnerships with its foreign counterparts to co-finance international research projects. Also, practical limitations are removed. The common goal is to fund excellent joint research projects in basic research.

6.2.8.1 Configuration

On a European level, the European financers have organized themselves in the organization Science Europe. The members of this organization introduced the WEAVE programme. In this programme, the researchers of multiple countries only have to apply at one of the national research financers. This lead agency is responsible for the practical administration and also one evaluation of the project takes place. Opposite to the European research funds, applications do not have to be within a certain thematic field. In that way, it is said that it enables bottom-up research. A researcher will only interact with this permanent set-up on an ad-hoc basis. Therefore, it is seen as an ad-hoc (in light of the interaction with a researcher) and policy executing practice.

The FWO has also partnerships with financers from non-European countries. This cooperation is limited to a bilateral set-up and the lead agency system is not used. However, the application that is submitted to both financers, is evaluated only once. It is also classified as ad-hoc (in light of the interaction with a researcher) and policy executing.

The making of connections with non-European counterparts is supported by the diplomatic community in the same way as the internationalization of the universities. First, the FWO uses the knowledge and connections of Belgian embassies or Flemish representatives abroad. Also, it may contact foreign embassies in Brussels. Second, the FWO participates in state missions or other types of missions. In these missions, FWO can connect with possible partners and show the importance of science.

6.2.8.2 Actors

The FWO prefers to cooperate with its foreign counterparts and not with foreign political entities to be independent of political influences. In that way, little tension is expected because of the similarity of the organizations. Moreover, tensions with researchers are expected to be limited as well since the FWO starts from a bottom-up approach and that they provide support services to researchers. Moreover, the universities are represented in FWO's board of directors.

Of course, the FWO also cooperates with multiple entities on a regional, federal and European level for policy formulating reasons, but these relations are out of scope.

6.2.8.3 Interests

The goal of the FWO is to enable excellent (normal or strategic) basic research. This is translated in multiple criteria to see whether to work together with the financer of another country. First, there should be some bottom-up demand by the researchers. Second, the scientific performance of the other country is investigated on parameters like its impact factor and publications. Third, the political and social situation of a country is taken into account. A bad political and social environment may impact the production of knowledge. Finally, the foreign country should be a reliable partner and wanting to work together.

There may be tension between the freedom of research and knowledge security. However, it was stressed that for the FWO safety and independence of research are also key. For example, it may not be that researchers are threatened, attacked, or killed due to their research. Another example is that state interference becomes too large and that research becomes (de facto) censored.

6.2.9 Missions

One of the most visible ways in which the universities are involved with the diplomatic community is with missions. Based on the organizer, multiple types of missions can be discerned. In the following section, the outgoing missions will be discussed. However, also incoming missions may take place on all the mentioned levels. The missions take place on an operational level. It can be argued that the state, economic and university missions are in general a permanent practice due to their regular, scheduled frequency. The ministerial, provincial, and city missions are more ad-hoc.

6.2.9.1 State missions

Actors: VLUHR, the Flemish universities, and the Belgian Federal Ministry of Foreign Affairs (MFA)

Short description: A state mission is a mission abroad led by His Excellency the King. There is often an academic part in the mission. The mission is carefully orchestrated and some universities have positions that explicitly deal with the organization of these missions on their side.

6.2.9.1.1 Configuration

A Belgian state mission takes place twice per year: one in Europe and one outside of Europe. There is a political, economic, and cultural aspect to state missions. Due to the interests of the King, technology and academic parts are also present in the state missions. In that way, a visit to a foreign university is often included. The Belgian MFA decides the location and coordinates the meeting of all stakeholders. In this meeting, the King, organizations of entrepreneurs, the regional export agencies, the cultural sector, and the universities are represented. The representation of the universities alters between the VLUHR and its French-speaking counterpart. They are the contact point for the universities. The universities are informed about the destination and the theme of the mission. As one could expect, the organization and agenda of such state missions are quite rigid.

The universities decide whether they want to join, however, this is almost always the case for state missions. Based on the topic, they search for relevant professors. These professors either have already connections with the destination or want to expand to that region. If the right people are found, the universities go back to VLUHR to try to obtain visible spots in the

programme. This means organizing a seminar, be part of a seminar or be able to let the rector join the state dinner for example.

6.2.9.1.2 Actors

Multiple actors are involved. First, given the fact that it is a state mission, the Belgian MFA is in the lead. Second, the VLUHR or its Wallonian counterpart are coordinating the mission for the universities. It is remarkable that during all the interviews the universities spoke about VLIR taking up this function, while officially it is performed by VLUHR. Contributing to this confusion is that often only the parties of VLIR, the universities, and not the colleges join the state missions.

Some of the universities have central administrations and even a 'diplomat' function to deal with these activities surrounding a state mission. In the central administrations, units like internationalization, development cooperation, and the international office, may support these state missions. Also, the central administrations may have specialized region platforms (UGhent) or region committees (KU Leuven). In these entities, knowledge of the region, language, and culture are combined. Also, they coordinate and try to keep an overview of the connections with a certain region. This is a difficult task as research often develops bottom-up. Still, one wants to avoid the situation that a rector is not aware of connections with a country when visiting it. If the relevant professors or faculties are determined based on the theme of the state mission, they are contacted about whether they want to join. Often, a large number of professors want to join. One of the reasons is that it is also a good way to build a reputation within the university.

Some universities have an in-house 'diplomat' that is responsible for all types of missions. For example, the universities of Ghent and Leuven have such a position. In both cases, the person worked in a Belgian or Flemish representation abroad. The mentioned benefits are that they are aware of certain procedures, working methods, equilibria, and connections. These benefits are used to try to use the opportunity of the state mission more strategically, increase the visibility of the university and arrange practicalities. Moreover, they have contact with the relevant embassies to obtain general information and specific information on what the expectations are in the other country about the state mission.

Internal tensions are present on the effectiveness of these missions in the universities. A respondent with a research background signaled that it is sometimes more a PR activity as few concrete research projects come from these missions. On the other side, respondents in the field of policy were aware of this criticism. However, even as academic actors, they stressed that building relations without direct return was also valuable. Moreover, it was argued that this long-term approach is more in line with the long-term horizon of a university. Furthermore, it was argued that general and broad memoranda of understanding are no issue as the researchers themselves built concrete relationships.

6.2.9.1.3 Interests

One of the interests of the universities is to be present and visible during these state missions. In that way, some competition arises with the other universities. Still, the VLUHR or the Wallonian counterpart will make sure to balance the visibility of the universities, as the right equilibrium of all parties is the basis for state missions. A balance needs to be present for example between the Belgian regions and communities, the countries that are visited, all aspects of the mission of which the academic is one, and so forth. This may lead to superficial interactions. Besides visibility, the state missions are a good moment for the universities to start new relationships, to bring existing relationships to a higher level, to negotiate agreements directly on the rector level, or to sign an agreement during the official signing ceremony. Also, the informal moments help to connect with new possible partners.

6.2.9.2 Belgian economic missions

Actors: FIT and the Flemish universities

Short Description: The Belgian economic missions are organized by the regional export agencies. The universities do not always participate in these missions.

6.2.9.2.1 Configuration

The export agencies are in the lead for the organization of the Belgian economic missions. For Flanders, this means that FIT is in the lead. Like with the state missions, the universities are informed about the economic mission. However, the universities do not always participate. A major difference with a state mission is that not only the rectors can officially participate in a Belgian economic mission.

6.2.9.2.2 Actors

Except that the lead organization is FIT, one is referred to the corresponding part under State missions (6.2.9.1.2 Actors).

6.2.9.2.3 Interests

The focus during an economic mission is more on the business and less on the academic aspect. However, during the seminars, the universities often get more time to present and one can go deeper into the content.

6.2.9.3 Parallel university missions

Actors: the Flemish universities

Short description: Due to the strict organization and agenda of the state missions or Belgian economic missions, a university may take the initiative to organize meetings and seminars parallel to the official mission.

6.2.9.3.1 Configuration

A university may organize a parallel mission next to the official mission. Especially, during the busy agenda of state missions, limited attention is given to the academic aspect. Often, a university is visited, a networking moment of rectors takes place and some official speeches are delivered to have an academic part in the state mission. A university may organize seminars outside of the official agenda. To these non-official moments, ministers are often invited.

6.2.9.3.2 Actors

The actors are limited to the Flemish universities and invitees. The universities use the same units as mentioned in the corresponding section of the State missions (6.2.9.1.2 Actors).

6.2.9.3.3 Interests

The universities could go deeper into their core business when they organize parallel meetings outside of the official agenda. Moreover, the time abroad by (vice) rectors is more efficiently used. Furthermore, the broader setting of the official mission can be used to improve one's standing.

6.2.9.4 Other missions

Below, an overview will be given of the other missions that the university may take part in. As the interests and the involved internal actors at the universities are generally the same, the practices will be discussed more concisely.

6.2.9.4.1 Independent university missions

The Flemish universities organize missions on their own to partner with universities or other institutions. Internally, there is a call for professors who would like to join. In preparation for these missions, embassies and partner universities are contacted. An interesting by-product is that professors from the same university also get to know each other better. In that way, internal synergies can be exploited. Moreover, these missions can be used to negotiate for example joint Ph.D. agreements on the highest level.

6.2.9.4.2 Ministerial missions

Another type of official mission is the ministerial mission to other countries or regions. The Flemish department KBUZA is in the lead for these missions. It is seldom the case that academic research is part of these missions. However, it could be present depending on the minister, the programme, and the destination.

6.2.9.4.3 Provincial missions and city missions

The provinces and cities may also organize missions. The main benefit of these missions for the universities is that they can take a central place in the programme.

6.2.9.4.4 Academic missions

The VLIR is also investigating whether academic missions with the universities as a group is an interesting concept.

6.3 Discussion

In this part, the descriptive case will be contrasted with the theoretical view of the literature study. In that way, the case can enhance the understanding of SD in the literature. Moreover, the case at hand can be positioned within a broader body of knowledge.

6.3.1 Science Diplomacy and state actors

In the literature, scientific cooperation and Science Diplomacy are distinguished by the fact that for the latter state actors should be involved. It is not specified in which way the state actors should be present. In the case study, we saw that state actors could take a range of roles: facilitator of foreign networking (KBUZA, FIT), policy creator (EC, EWI, …), funds provider (FWO, EWI, EC), or information requester (EC, EWI, …). The question can be raised whether a practice is an SD practice from the moment a state actor is involved or that this state actor should be actively using diplomatic means to advance the scientific community. Practices, where the scientific community is becoming a diplomatic actor, should be excluded.

Is it useful to focus on this non-state/state actor division? It helps to delineate the term SD analytically, which can be considered good given the undefined nature of the concept. However, in doing so the risk is taken that only practices where the state actor is actively performing at least some diplomatic activity, are considered to be SD. In the case study, it was shown that organizations like VLIR, the European universities, and European academic network associations take an important role to influence the policy-creating activities of state actors on multiple levels including in the European political sphere. As a result, the universities become diplomats for their interests.

Due to these concerns, the practices in the case are the practices concerning the internationalization of the Flemish academic research. It is not determined which practices are SD and which are not. The case study shows the complete ecosystem that is involved without limiting itself to SD practices, which is also difficult due to the undefined nature of the concept.

6.3.2 Sub-state Science Diplomacy

As mentioned above, the Science Diplomacy in Flanders can be considered as sub-state Science Diplomacy as Flanders is a region and community within the federal state Belgium. It was already noted that this should not be an issue due to the clear separation of competences in the Belgian federal structure. Still, in domains like visa, the federal administration remains responsible. Within Belgium, multiple diplomatic actors can serve the universities. For policies at the EU, it should be noted that a common Belgian position is determined with the other

competent governments. If we look at the full scale of Science Diplomacy, it would touch upon a mix of competences that are distributed over and within the competent governments. One should keep this context in mind and that the case study above refers to sub-state diplomacy, a variant of the general Science Diplomacy.

6.3.3 Diplomacy in science

In this part, the academic literature on Science Diplomacy is advanced. One of the standard works of Science Diplomacy is the publication by the AAAS (AAAS & the Royal Society, 2010). The taxonomy of science in diplomacy, science for diplomacy, and diplomacy for science is still very influential. However, as shown in the literature study, this taxonomy is criticized for its optimist/cooperation lens on Science Diplomacy (Ruffini, 2020a; Rungius & Flink, 2020). Moreover, it is said that 'science' would become corrupted if it is used by diplomacy in this optimistic view on Science Diplomacy (Flink, 2020). Furthermore, the Science Diplomacy literature is characterized by a heavy dichotomy between science and diplomacy, in which neither is well defined.

To partly solve the issues in the academic literature mentioned above, a more nuanced view on the relation between science and diplomacy would be useful. As shown in the case study, the science and diplomatic/international political community are not separated and there is a clear impact of the latter on the former. In that way, a fourth pillar to supplement the taxonomy of the AAAS is proposed: Diplomacy in Science. On the one hand, diplomacy refers to the sphere of international state relations and related events. On the other hand, diplomacy refers to the diplomatic skills that are being acquired by the science community. Science refers to the science community, those who perform scientific research be it in universities, companies, or in a non-organizational form. This leads us to the description of 'Diplomacy in Science': the acquirement of diplomatic skills by the science community and the impact of international state relations and related events on the science community.

6.3.3.1 Acquirement of diplomatic skills

As shown in the case study, universities are active in the field of influencing political actors via the VLIR, the European universities, and the European academic network associations. Moreover, they influence political actors on the Flemish, Belgian and European levels. In that way, they are acquiring diplomatic skills. Moreover, some universities have explicitly hired personnel with prior experience in Flemish and Belgian representations abroad.

It should be noted that there is no purpose included why the universities acquire these skills in the description of 'Diplomacy in science'. The universities have a broad range of interests. In that way, it does not seem useful to intertwine means and interests in the explanation of the term.

6.3.3.2 Influence of international state relations and related events

The science community does not live in an isolated world. Logically, international research may be influenced by many factors in its environment, one of which is the relationship of states. As shown extensively in part 6.2.6 Impact of international politics, the international political events, dual-use regulation, and European policies like strategic autonomy have an impact on the science community. The universities act accordingly and are, as such, already intertwined with state relations. However, this does not mean that they become full political actors. The universities continue to prefer to work state-agnostic and to have relations with foreign institutional counterparts.

6.3.4 Science diplomats

The question arises which actors are involved with the internationalization of academic research. On an institutional level, it can be noted that the main responsible state actor in Flanders is EWI. However, the universities are quite independent and internationalize mainly on their own. The universities have central administrations that try to keep an overview of the international research connections that their professors/researchers have. Besides, the (vice) rectors are involved with the internationalization of their university.

On an individual level, the respondents were all working on a policy level and were neither pure scientists nor diplomats. Interestingly, people with experience in politics and foreign diplomatic representations were hired by the universities. Similarly, some of the personnel within the Flemish departments were academic doctors. In general, no large tension between actors was felt, as they understood the position and the background of the others. If tension arose, it was mainly due to the different mandates and focus of their respective organizations.

6.3.5 Interests

Why do universities internationalize? The internationalization of academic research was almost always described to enhance the quality of the academic resources. In practice, interaction with new talent and resources improves the research. On common interests, the Flemish universities unite themselves in VLIR. However, it could be noted that they also behaved competitively towards their peers. Especially on the subject of the European universities and the European

academic network associations, it was remarkable that the university respondents were showing the unique features of the structures in which they were involved. Moreover, it was mentioned that some professors would participate in missions to build a reputation within the university. While this is normal behavior, the classic view in the SD literature focuses heavily on the non-competitive nature of the science community. The abovementioned elements indicate that some nuance is warranted.

Another axis on which the interests of the actors could differ was the view of the limitation of academic research in light of international political events, strategic autonomy, and dual-use regulation. This axis is described in the section 6.2.6 Impact of international politics.

6.3.6 KBUZA, FIT and Science Diplomacy

In this case, the role of KBUZA and FIT was rather limited. They perform a support role when requested by the universities. This support role is linked to their representatives and their missions abroad. On the one hand, KBUZA was already influenced by the Science Diplomacy literature in 2011 when the academic diplomacy protocol was signed. However, this concept is not well understood by the respondents and the momentum around the term died out over time. Currently, the knowledge within KBUZA on the universities is fairly limited which is in line with their role in the internationalization of academic research. On the other hand, FIT limits itself to supporting export (including valorization of knowledge) and promoting investments. Their mandate limits their role in the internationalization of academic research as they only perform these tasks.

The case and its research question have an inherent focus on the so-called diplomacy for science focus. In that way, one has to be careful to draw conclusions on the basis of this case on the general Science Diplomacy practiced in Flanders. It was shown how KBUZA utilizes academic research to work evidence-based. Moreover, this knowledge can be used to help other countries and be a reliable international partner. Interestingly, FIT is the organization in the system of Flemish representatives that is building capabilities that could be leveraged in a broader Science Diplomacy approach. Especially the S&T Counselors are interesting profiles from the viewpoint of the SD literature. However, the mandate of FIT limits the role that S&T Counselors could play.

7 Conclusion

7.1 Findings

Science Diplomacy is a relatively new domain in the academic literature. The focus in the literature lay on the concept of Science Diplomacy (origin, definition, and discourse) and science diplomats. However, little empirical work is performed on Science Diplomacy practices, especially the interface between the science and diplomacy community is barely studied. This dissertation tried to fill this gap by answering the following research question.

> *How is the interface between the science community and state actors organized for the stimulation of the internationalization of academic research at the Flemish universities?*

Contrary to what was expected, the role of the Flemish Department of Chancellery & Foreign Affairs was fairly limited. Despite the concept of academic diplomacy, their role is limited to a support function. The universities are the key actors in their internationalization. They have the experience and capabilities to internationalize their academic research or to enable their academic staff to do so. On the one hand, the universities are networked actors that interact easily with foreign counterparts. On the other hand, the universities have set up a range of intermediary players like the Flemish Interuniversity Council and European academic network associations. These intermediary actors are used to influence political actors on the Flemish, Belgian and European levels. The universities also use a lot of opportunities created by state actors. For example, the universities use the different types of diplomatic missions, the EU-platform by the Flemish Department of Economy, Science and Innovation, international project funding by the Research Foundation Flanders, and the Belgian and Flemish diplomatic networks. It was found that there are interfaces both on a permanent and an ad-hoc basis between the universities and state actors. Furthermore, interfaces and practices were present for strategic (policy formulating) and operational (policy executing) goals.

The case and the research question have an inherent ‘diplomacy for science’ focus. Still, even in this case, it is clear that the state actors only play a peripheral role in advancing the interests of the science community. This challenges the idea that the science community needs help *per se* from state actors to advance its interests. For universities, this does not seem to be necessary.

The interfaces between the universities and the other actors were not as problematic as one may expect looking at the dichotomy between science and diplomacy in the SD literature. In general, the interests were quite complementary between the actors. Moreover, at the policy level in the organizations, the respondents had often a similar background. However, this is also due to the

choice of respondents for this dissertation. Still, one can question whether the SD literature takes sufficiently into account the intermediary actors (universities, domestic departments, interests groups, …) that may stand between a researcher and a diplomat.

7.2 Extending the literature

The main contribution to the academic literature of this thesis is the introduction of the term 'Diplomacy in Science'. It is remarkable that in the conceptualization by the AAAS of Science Diplomacy (AAAS & the Royal Society, 2010), there was no counterpart to the 'science in diplomacy' pillar. However, international state relations have an impact on international research: international political events may have an impact, just like dual-use export regulation. Moreover, the European 'strategic autonomy' concept may have an impact on European research in the future. Also, it was clearly shown in the case study that the universities are building diplomatic skills to advance their interests.

Therefore, Diplomacy in Science refers to the acquirement of diplomatic skills by the science community and the impact of international state relations and related events on the science community. Some criticism on the three classical pillars of SD was mitigated. It was tried to exclude purpose or normative elements from the description. Moreover, the meaning of diplomacy (as skills and international state relations) and science (as a community) in the term is 'defined'.

7.3 Policy advice

This dissertation is descriptive in nature. Still, one policy recommendation is made. Looking at the system of the Flemish representatives, it is noticeable that S&T Counselors of FIT have the right capabilities to support the science community. However, the mandate of FIT limits the activities that these representatives can fulfill. Therefore, the author advises research on whether it would be useful to have S&T Counselors that can support the Flemish science community with a broader mandate than that of FIT. If so, the system of Flemish representatives may have to be adapted to allow for these broadly deployable S&T Counselors.

7.4 Limitations

Logically, academic research comes with some limitations and this thesis is no exception. First, the case study relies mainly on the information that the respondents gave during the interviews. They explicitly gave consent to be mentioned in the dissertation, which is preferable given the scientific method. If strong positions were taken, they could state to have it published in an anonymous way. While this mitigated a bit the risk of socially preferable answers, this inherent

risk to interviews should be taken into account. Also, the respondents were not pure diplomats or researchers. They were people concerned with the policy of their respective organizations that answered the questions. Second, the case study limits itself to the Flemish actors in the Belgian federation. This was necessary to have a feasible scope for the dissertation. The Belgian diplomatic network or the federal competence of development cooperation (including facilitation for universities) are not incorporated in the case study. The case study is also strictly speaking a case of sub-state Science Diplomacy. Third, the case and its research question have an inherent focus on the so-called diplomacy for science focus. In that way, one has to be careful to extrapolate the findings of this case towards the general Science Diplomacy practiced in Flanders.

7.5 Future research

Science Diplomacy is still a domain in evolution. Moreover, this dissertation provokes some new research. Therefore, further research is needed to advance this domain. First, the terminology surrounding Science Diplomacy (SD) should be cleared up. There is still no widely accepted definition of the term Science Diplomacy. Furthermore, it is necessary that the meaning of 'science' and 'community' is more explicitly defined in the SD literature as was tried for the concept of 'Diplomacy in Science' advanced in this thesis. Second, this research has empirically contributed to the understanding of the interface between and the interests of different actors. However, an evaluation of the benefits of Science Diplomacy has not yet been made to the knowledge of the author. Of course, this would not be an easy task. Short and long-term benefits should be taken into account. Moreover, the contribution of SD to the solving of global challenges would be difficult to measure. Still, such an overview of the benefits of SD would help actors to see whether it is interesting to adopt SD or not. Third, it would be interesting to see other empirical research focusing on the organizational aspect of SD. The internationalization of academic research could be studied in other countries as a comparative analysis.

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