



Scuola Internazionale Superiore di Studi Avanzati
Master in Comunicazione della Scienza “Franco Prattico”

The ‘multicultural’ communication of European projects

Candidate: Beatrice Allegri

Supervisor: Prof. Mariachiara Tallacchini

Co-supervisor: Dr. Valeria delle Cave

Academic year 2019 - 2020

Table of contents

1. Introduction	6
1.1 Research context and questions	
1.2 Research goals	
1.3 Outline	
2. Building an institutional identity	10
2.1 What is an institutional identity	
2.2 The requirements for an ethical institutional identity: integrity, transparency, accountability	
2.3 “Multiculturalism”	
3. The ambivalent value of European projects: unity and variety	24
3.1 Unity	
3.2 Variety	
3.3 Communicating ‘multiculturalism’ in EU projects	
4. Communication as a building pillar of an ethically performing research institution	30
4.1 What is institutional communication	
4.2 How institutional logics shape an institution’s action	
4.2.1 How institutional logics affect an institution’s communication	
4.3 An ethical communication	
4.4 Communication in “multicultural” contexts	
4.4.1 European Projects	

5. Case study: European project ‘SOPHIA’	39
5.1 ‘SOPHIA’	
5.2 Interviews	
5.3 Survey	
6. Conclusions	50
Appendix - Interviews	52
Bibliography	78
Acknowledgments	83

1. Introduction

1.1 Research context and question

The idea of the present thesis work comes from my experience as an intern at the Italian Institute of Technology (IIT), where I have been collaborating with the Communications and External Relations Department and, more specifically, I have been staying in close contact with the person in charge of the communication in European Projects. Thanks to this experience, I had the opportunity to pay close attention to how relationships are built and conducted in an international and dynamic environment like IIT. What particularly caught my attention was the process of building partnerships and relationships between institutional scientific realities that, as the scientific community teaches us, should work on a common ground especially when it comes to creating new knowledge. What I found myself noticing were some differences in how research is intended, its goals, objectives and practices and also how a collaboration relationship is conducted. As Henry Etzkovitz senior researcher at the H-STAR Institute, Stanford University says, “the power and prestige of science is typically thought to be grounded in the ability of scientists to draw strong distinctions between scientific and nonscientific interests”¹ , and this is just one of the ways in which the institutional culture can shape the way research is seen and pursued. My intention is to examine the “multiculturalism” theme intended as the variety of institutional cultures that intersect in a European project consortium, and seen as a problem in the standardisation of research modalities within scientific, ethical and integrity parameters that often vary depending on the national institutional cultures. Therefore this work will analyse how the identity of an institution, its integrity and ethical conduit are built and constructed in order to better understand their role in the establishment of research

¹ H. Etzkowitz, *The Capitalisation of Knowledge: A Triple Helix of University-Industry-Government*, edited by Riccardo Viale, Edward Elgar, 2010.

collaborations and partnerships and finally to approach the problem that communication faces when dealing with such heterogeneous contexts.

Having defined the context in which the idea of this research work is born and where it will also be developed, I will pass to analyse the research question deriving from the observations mentioned above. The first and main question of this thesis aims to understand if communication is essential in the process of defining a common research ethics and culture and, if so, to better comprehend the reasons of the role of communication in contexts of several institutions intersecting, each with its research culture and ethics. This work will proceed from the assumptions that relying on good ethical research practices is essential to the validity and credibility of research, both in respect of the scientific community and of the society to which the advancement of research is communicated. Moreover, communication itself is an integral part of a research institution ethics, therefore and more specifically of its institutional culture. In fact, the standardisation of the norms of research conduct is owed to internal communication and to the institution itself. While the external communication takes care of the regulation of accountability and credibility of an institution towards society and towards other institutions. During the process of creating the cultural identity of an institution, there surely will be a moment when, from the internal communication approach, the institution will have to pass to the external one; because, while personal ethics and morals are to be considered individual choices, the values that can affect public choices have to be regulated. These regulations are part of the whole institutional culture, composed by practices, beliefs, values and norms which have a shaping function for institutions and affect their communication and establishment of partnerships and collaborations. On this particular matter, we need take into consideration concepts such 'pluralism' and 'multiculturalism': what are the values that have to prevail when several institutions

collaborate? What is the best common ground to conduct and communicate scientific research as efficiently as possible?

1.2 Research goals

The aim of this thesis work is to comprehend how the construction of an institution's identity and the way in which this identity is communicated and shared inside and outside the establishment, is a structural component of the way research institutions not only manage to establish and maintain relations and partnerships, but also to gain international visibility. What are the cultures of communication? How much and how deliberately are they used and in what ways do they connect to the quality and integrity of the scientific research of an institution?

More specifically, the present work wants to address these questions to a particular context which is the forging collaborations and consortiums, inside the work environment of European projects. "Corporate social responsibility has now taken on a more prominent role with further recognition of the organisation's responsibility to society and to conduct their business in a demonstrably ethical and accountable way.

This also models the relationship that this ethical framework has with the ethical leadership present in the organisation, and the necessary visibility it has to stakeholders"².

The whole scientific community knows and is aware of the common practices necessary to ethically conduct research, nevertheless each research institution has its own 'institutional identity baggage' that leads to somehow influence the way research is carried on, and therefore communicated. In this case, communication is not intended to be only referred to the public on a dissemination level, but especially to stakeholders and partners. The focus of this thesis goal is to understand how communication manages to cope with the 'multicultural' environment distinctive of European projects.

² J. Overall et al., *Institutional Ethical Framework, Ethical Leadership and their Communication to Stakeholders*, in «Academy of Management Proceedings», 2013.1, (2013), p. 17110.

1.3 Outline

The present work is divided into six chapters. Chapter one is dedicated to the introduction of the main research objectives and questions. The context of the rising of this thesis research question is also described in order to better comprehend the environment in which this research is born and conducted.

In chapter 2, I provide a definition of institutional identity whose meaning can be interpreted in different ways, how an institution's culture is connected to its ethical values and communication and therefore how it shapes the establishment of relationships within "multicultural" collaborations.

Chapter 3 gives an overview on the duplicity of values that European projects incorporate, being an instance of both multi institutionalism and unity. Considering the historical background that brought to the formation of EU Framework Programmes, and outlining their characteristics of unity and variety, I want to understand what are the lacks and points of strength of the present formats in order to find out if a total globalisation of research practices is actually what communication needs. Or perhaps, the institutional differences are essential in the process of creating new knowledge and therefore communication needs to find a way to best present 'multiculturalism'.

In chapter 4, I focus my attention on communication as a fundamental part in the construction of an institution's identity and culture. This chapter wants to give an insight on how strongly communication is affected and affects institutional logics, acting as a mirror of the object of the communication itself. From this concept comes the idea that, since the nature of institutional communication consists in representing the institution, which in this particular case is defined as a European project, it is also responsible of communicating its composition, variety and, more broadly, identity.

Chapter 5 is dedicated to a case study to further analyse the previously explained theoretical concepts. The case taken into account is the European project 'SOPHIA' (Socio

physical Interaction Skills for Cooperative Human-Robot Systems in Agile Production), funded by the European Union's Horizon 2020 Research and Innovation Programme. After an overview of the institutional composition of the consortium, I move on to describe the two methods used to collect the qualitative information and data. Interviews to the main leaders of the project and a survey submitted to the consortium were respectively used to comprehend on what extent the single institutional cultures affect the global identity of the project. Which is also the object of the communication practices, main topic of the present work. Finally, chapter 6 draws the conclusive analysis to the conducted theoretical research and its supported case study.

2. Building an institutional identity

2.1 What is an institutional identity

The identity and culture of a scientific institution is a concept that incorporates every aspect of its organisational and ethical structure. Institutional identity is formed and strongly influenced by the ethical principles underlying the disciplines it pursues and by the context in which the institution is born and built, therefore its relations with the external environment. Hence, the identity of an institution is given by aspects that come from inside, such as its ethics, practices and disciplines and others that come from outside, relations with the general public or with stakeholders as an example.

As the American sociologist Ann Swidler affirms, culture is “the tool kit of habits, skills and styles from which people construct ‘strategies of action’.” Within the context of an institution, university and company, this means that culture is made by people's work, teaching and study practices, how they negotiate challenges, and how they interact and behave. Swidler also takes into consideration people's beliefs which, on an institutional context, would be about its nature and what it means to exist within it. “We link these to values such as excellence or equality, which can be top-down or bottom-up, internal- or

external-facing, and stated and/or experienced. It is important to understand that an institution's stated values may not be what its staff and/or students experience in practice"³. The cultural, ethical and social states of a scientific institution are deeply connected with its workers' and researchers' perceptions and also with how they view the environment they are in. Also institutional norms represent and influence ways of thinking and being, and, since being part of an institution means respecting its norms, institutional culture can be deeply experienced.

The productivity and the way the institution communicates itself lay under the influence of its identity. "There may also be subcultures and issues of conflict however"⁴, as Harold Silver points out when talking about the concept of 'organisational culture' in universities. And this aspect makes us understand that the culture of institution can evolve over time and can be challenged by external or internal changes.

The identity and culture of an institution also exists in a social context. Bringing the term 'social' into this research is essential to understand how the organisational culture and internal logics of an institution are also connected and influence the beliefs of decision makers and can influence their attention on issues, and bring them to particular solutions and, in the end, to decisions. Some theorists have identified 'institutional logics'⁵, a core concept in sociological and organisational studies. Due to its focus on how belief systems shape the cognition and behaviour of actors, this concept is attracting a growing interest in the marketing and communications field. "Institutions are supra-organisational patterns of human activity by which individuals and organisations produce and reproduce their

³ Swidler A., *Culture in action: Symbols and strategies*, in «American Sociological Review», 51.2, (1986), pp. 273-286.

⁴ H. Silver, *Does a university have a culture?*, in «Studies in Higher Education», 28.2, (2003), pp. 157-169.

⁵ P. Thornton and W. Ocasio, *Institutional logics*, in «The Sage handbook of organisational institutionalism», 840, (2008), pp. 99-128.

material subsistence and organise time and space. They are also symbolic systems, ways of ordering reality, and thereby rendering experience of time and space meaningful”⁶. We understand that institutions have a specific role in society and also that society itself has a specific role within the institutional context.

Every institution all over Europe has developed its own specific identity over time. The concept of institution as we intend it today sees its roots at the end of the twentieth century, when institutions started to become the dominant guidelines in the political, social and research groundwork. “This rise to power occurred without the presence of a substantive ethical framework upon which to base corporate actions. Instead, as they had for centuries, institutions relied mainly on the ethics of their professional constituents to project the appearance and/or provide the substance of a guiding ethical presence.”⁷

From the words of Ana Smith Iltis, we can understand that, in order for an institution to build its identity, the initial questions of reflection are mainly ethical. Some of them might be:

1. What are the stated ethical values of the institution?
2. Do its stated ethical values differ from how they are perceived?
3. Where are the areas of conflict?

This chapter wants to analyse how research institutions grew under these circumstances and their cultural identity with them, starting from ethical principles to research conducts and integrity to the differences in ethical principles between institutions, the lack of uniformity and the need of standardisation; especially when dealing with partnerships and

⁶ R. Friedland, *Bringing society back in: Symbols, practices, and institutional contradictions*, in W.W. Powell and P.J. Di Maggio, Eds. *The new institutionalism in organisational analysis*, University of Chicago Press, 1991.

⁷ A. S. Iltis, ed. *Institutional integrity in health care*, 79, Springer Science & Business Media, 2003.

cooperations between these institutions that find themselves working on the same topic for the same research goal without a solid ethical common ground.

The creation of an identity is often spontaneous for an institution, it can develop based only on its disciplines and its nature. There are numerous instances where it seems that there was no intended purpose of establishing an institution's identity, which means defining its core ethical attributes, its sources of meaning and its scientific values and objectives. For a collective social actor such as a research institution, there may even be a plurality of identities, maybe depending on the discipline or a specific research group or laboratory.

“In most cases, the identity of a particular educational institution, such as a school, college, or university, seems to have developed as a result of the way in which the individuals forming the totality of the institution strove for ‘success in action’ ”⁸.

This applies to educational institutions as much as to every institution that naturally and spontaneously creates a cultural identity. What this work wants to focus on are research institutions and their partners in European projects.

The point mentioned above implies the absence of a regulation on which the institutions could build their identity and ethical culture; therefore each institution builds spontaneously its own personal over time. The scientific community has the role of creating norms and policies to be respected by scientific institutions, at least on an ethical perspective. “When we deal with the creation and diffusion of scientific knowledge, we ought to consider the question of how widely dispersed over the surface of the earth are scientific activities. So far as science is practised in institutions which are relatively similar and which are widely dispersed over the surface of the earth, it is appropriate to treat its pursuit in many respects as a world-wide collaboration - in the same sense in which we speak of the

⁸ Van der Walt and Johannes L., *Formalising Institutional Identity: A Workable Idea?*, in *Values education and lifelong learning* (edited by D.N. Aspin and J.D. Chapman), Springer, 2007, pp. 180-198.

collaboration among scientists in different places in the same country or continent - and not just as a national one. Scientific work is carried out in varying degrees of spatial proximity or distance from each other, but who are in communication with one another about scientific matters and who in some instances also develop personal ties. Scientists are members of their local scientific communities, as well as of national, regional and the world scientific community.”⁹

Therefore, the institutions that they compose also take part in the same scientific community and they interact with its ‘players’, which are other institutions.

These interactions can be explicated as co-authorships, talks, meetings, or, more ambitiously, as research collaborations, shared projects, consortiums etc. “Over the past number of decades, a socio-environmental crises have multiplied, the question of research collaboration has captured the attention of policymakers and scientists (Katz and Martin, 1997), with calls for “intensive cooperation” and a widening of perspectives becoming commonplace. The underlying assumption driving these calls is that solutions to the complex socio-ecological-problems facing humanity today are in many instances not going to be found within the confines of traditional disciplinary, thematic, sectoral or territorial boundaries.”¹⁰

Moreover, there is a significant amount of empirical research suggesting that relationships between research institutions, therefore the networks that are being created with research collaborations, are important in explaining processes of knowledge production. This means that the concept of science research is strongly influenced by the process of building relationships.

It is in this context that the term “multiculturalism” is being introduced, with ‘culture’ intended the problematisation and possible standardisation of research norms and

⁹ T. Schott, *The World Scientific Community: Globality and Globalisation*, Minerva, 1991, pp. 440–462.

¹⁰ S. Shaheen et al., *Mapping the global network of fisheries science collaboration*, in «Fish and Fisheries», 20.5, (2019), pp. 830-856.

modalities that often vary depending on the institutional identities. How do research groups manage to create new scientific knowledge when their work is based on different ethical approaches, on different visions and goals? Is this seen as an issue or is this a point in favour to scientific research? Is the standardisation of research practices and ethics in this particular context strictly necessary or different visions and points of view would give an added value to collaborations and the establishment of partnerships?

2.2 The requirements for an ethical institutional identity: integrity, transparency, accountability

The concepts of integrity, transparency and accountability have been defined by the United Nations countries, collectively and individually, as part of the founding principles of public administration¹¹.

The principle of integrity as a founding principle of an institution's identity indicates the capability of the institution to act within an honest and trustworthy system of values and to adopt and follow a strong ethical code. It means that the institution's work complies with the interests of the society and public, in accordance with its purpose. The principle of integrity is particularly important when it comes to research institutions due to their public character, and therefore to the need of society to trust in their action and perceive them as legitimate. The principle of transparency for an institution means to be open to the public, who can have access to reliable information and data. It is the openness of an institution to share its advancements and information. Finally, the concept of institutional accountability indicates the assumption of responsibility for actions, decisions and behaviours. An accountable institution is capable of taking responsibility for its actions and policies and ready to be held accountable for failing to meet its stated objectives. All these principles

¹¹ United Nations, Charter of the United Nations, 1945, Chapter XV, Article 101, available at <https://www.un.org/en/sections/un-charter/chapter-xv/index.html> (April 2020).

together are co-dependent and necessary to create the basis for an ethical institutional identity.

Integrity

For the purpose of deeply comprehending the reasons of the institutional cultural differences and to find better communication practices, it is necessary to start from the elaboration of a research culture which is based on integrity. Therefore, the principle of integrity is worth being fully understood.

In this concept, institutions find their correct functioning, their coherence with their values and objectives and also, thanks to this principle they are perceived as legitimate. In fact, today the ability of institutions to take an ethical social responsibility has become extremely important. This ethical framework in which institutions live today inevitably and rightfully shapes their identities and behaviour and therefore the behaviour of the leadership of the organisation and the decision makers. Consequently, the visibility of the institution to its stakeholders is affected, together with its networks of relations. Existing as an institution inside a work environment built and filled with collaborations and creation of relationships, requires the organisation to demonstrate its ethicality and genuine commitment in the present 'marketplace'. "It is also important that this commitment is seen to be authentic. Increases in the institutional ethical framework prompted by ethical leadership will lead, on average, to increased communicated ethicality and associated authenticity." ¹²

As the former United States National Science Foundation (NSF) wrote while calling for development of the Global Research Council, "The most fundamental barriers to bilateral and multilateral international collaborations are disparate standards for scientific merit

¹² J. Overall et al., *Institutional Ethical Framework, Ethical Leadership and their Communication to Stakeholders*, in «Academy of Management Proceedings», 2013.1, (2013), p. 17110.

review and differences in the infrastructures that ensure professional ethics and scientific integrity”¹³.

These differences are to be found at an institutional level, where integrity means that an organisation “defines and acts within a strong code of ethical conduct and positive values, and that adopts no tolerance of attitudes, actions and activities by its employees or partners that deviate from that code”¹⁴. This concept is strongly interlinked with the principle of transparency, implying openness, accountability and communication. The key aspect is that an integrity-based institution performs its tasks in line with its intended purpose, and is operated in a transparent, accountable and ethical manner. The integrity culture of an institution reflects in the behaviour of its individuals and it is consistent with the values and goals that are being followed. The institution takes all necessary steps to do its work in compliance with those values. This ethical behaviour is part of the institution’s identity that is communicated when more institutions come into contact, sharing information but also ethical values and behaviours.

The principle of institutional integrity comprehends the internal relations between the individuals and the institutions and also the external relations between the institution and other stakeholders. More specifically it means that single individuals are part of the relational context to which they belong and institutions are part of a larger context to which they belong. These reciprocal actions include both the relationships between individuals and the relationships between institutions.

Since the present work focuses on the interplay between different institutional identities and cultures, it is necessary to point out that integrity being a building concept in the ethical identity of an institution, also plays a fundamental role in its management and its relational strategic behaviour. In fact, ethical leadership is one of the fundamentals of the

¹³ S. Subra, "Moving toward global science", *Science Magazine*, Vol. 333, 12 August 2011, p. 802.

¹⁴ PIARC Technical Committee B.1, *Best Practice of Good Governance - Institutional Integrity*, World Road Association, 2010, p. 21.

identity of an institution. These principles and values are reflected in an institution's decisions. This discourse applies to the internal and external communication strategies as well. They should clearly present the organisation's vision, and the general principles and core values that it strives for, adding a piece to the institution's identity we are here defining. About this specific topic, we will discuss in chapter 4.

Marvin T. Brown in his book 'Corporate Integrity: Rethinking Organisational Ethics and Leadership'¹⁵, presents a model of institutional ethics more civic approach-driven and also integrated with five dimensions of institutional environment: cultural, interpersonal, organisational, civic, and environmental. What is attractive, especially for the present thesis, is that his ideas heavily focus on communication and relations between the individuals, the institution and the external actors. The author, in fact, believes that by better regulating and improving the quality of these relationships, then also integrity will benefit from them. Institutions develop strategies based on compliance in a way that individuals or groups of individuals are being rewarded when following compliance and punished when following non-compliance. However, recent studies show that this is only the case when such behaviour is perceived as legitimate and correct¹⁶. This point demonstrates that an ethical institutional culture strongly influences the ethical behaviours of its individuals and groups of individuals.

Institutional ethical values such as integrity deeply influence the processes of decision making of the institution, its organisational structure and its relations with others. These ethical principles constitute a frame of reference for the institution itself and its individuals and serve as a unifying force across different functions, lines of business, and groups of workers.

¹⁵ T. Brown Marvin, *Corporate Integrity: rethinking organisational ethics and leadership*, Cambridge University Press, 2005.

¹⁶ L.S. Paine, *Managing for Organisational Integrity*, in «Harvard Business Review», 72.2, (1994), pp. 106-117.

“Organisational ethics helps define what a company is and what it stands for”¹⁷. Moreover, recent studies have shown that “ethically led organisations have been found to have increased effectiveness due to a strengthened organisational culture, lower turnover levels, and increased employee effort”¹⁸.

Moreover, the role of institutional integrity is fundamental in an ethical management of research and innovation, both in the private and the public sector, because the procedures that involve the management of funds might lead to potential unethical and corrupt behaviour. This is another reason why it is extremely important for an institution to have within its culture and identity a strategy for creating and maintaining institutional integrity.

Transparency

On this matter, the second essential requirement for an ethical institutional identity is transparency, the relationship between institutional openness and public trust. Transparency is described by De Boer 1998 as “the ability to look clearly through the windows of an institution”. With this short analysis this work wants to point out that the definition given by De Boer assumes a more complex meaning when the institution is in relation with others, within the framework of a European project as an example. This particular case sees several institutions’ transparency on a more complex level, the ‘windows’ through which the public can see are now multiplied. In fact, the general public, experts, stakeholders or other institutions might look through only some of the windows rather than others.

Transparency is one of the founding concepts for the identity of an institution. The level of transparency determines how open an organisation is towards the eyes of the external environment, how strong its right to know the decision making processes and information

¹⁷ Ivi

¹⁸ K.W. Parry and S.B. Proctor-Thomson, *Perceived integrity of transformational leaders in organisational settings*, in «Journal of business ethics», 35.2, (2002), pp. 75-96.

and knowledge is. The level of transparency of an institution depends on the nature of the institution itself, research organisations tend to be more open to the access of their data, on the other hand, business related companies might want to not provide transparency due to privacy or copyright matters.

Accountability

As much as the concepts of integrity and transparency, institutional accountability is the core of the ethical identity of an institution. An institution is as accountable as it is liable. Especially in the academic field, in research institutions and universities, ethical accountability plays a fundamental role. Researchers and workers need to take responsibility for the impact of their practices of research and work, thus contributing to shape their institutional culture.

Institutions' ethical principle of accountability is also linked to the vision of the external environment and stakeholders who want the institution to be accountable. One example might be seen in the need of research and educational institutions to be accountable for their actions towards the public good and the respect of laws and regulations. Also, when a research institution or a research group receive a grant or a donation, their accountability lies in the proof that these contribution made in their favour are being well spent, in relation to their purposes and values. So many groups of people exist in relation of institutional accountability. Hence, institutional accountability affects its management and governance being a fundamental part in the building its institutional culture and identity and so defining the culture and strategies of research.

2.3 “Multiculturalism”

We face ‘multiculturalism’ when several institutions meet within the same framework such as a common project. The European Commission promotes such projects in order to

achieve broad goals and results on a particular topic. The focus of this research is the understanding if the framework of these projects take into consideration the differences in institutional cultures of the several institutions present in the consortiums. Hence, what this work intends with 'multiculturalism' is the presence of several institutions within the same context and framework working towards a common goal, aiming to achieve one same outcome. Does the project take into consideration their institutional cultures?

We can intend a research project as a large institution with one common goal between its components. Therefore a project has its own identity, comprehensive of ethical norms and values, research practices and social interactions. The way it works is similar to how a single institution works and lives, with the difference that the parts that compone this wide entity are not research groups and laboratories but institutions themselves. Each one of them bringing its ethical baggage and inevitably influencing, positively or negatively, the outcome of the collaboration.

Recently, innovative designs have been developed for multi organisational research collaborations. With this work, we are interested in exploring how the level of interactions, communication and development of the organisational structure of a collaboration influence the epistemic domain of the disciplines involved to determine the ultimate success of the collaboration.

The main difficulty in examining the relationships of diverse institutions is their close similarities to each other. Having taken into consideration a European Project whose goal concerns collaborative robotics, it is very easy to find huge similarities in approaches due to the closeness of the disciplines. Therefore, the differences in support to this thesis are subtle and hard to find and fully understand. This aspect also makes this research worth of being carried on, especially on a European research framework where most research consortium are composed by institutions very similar to each others. This work wants to

present a theoretical framework that describes how the difference in the epistemic norms of the disciplines and institutions represented in the collaboration (their identities) affects the building of their relationships and common work and therefore the ultimate success of the collaboration.

The previous institutional ethics analysis was necessary because the creation and management of large research collaborations is, essentially, an exercise in building institutional identities and multi organisational networks. Therefore, multi-discipline and inter-institutional collaborations need a high level of development in either the epistemic development of the disciplines involved in the collaboration. Of course, the domain that should provide the highest level of development is the one that organises the “rules” of the collaboration¹⁹, in this case the European Commission.

The effectiveness and the success of a multi-institutional research collaboration are determined by many variables. The level of development of the epistemic norms within the disciplines represented by the institutions in the collaboration and of the overall organisational structure of the collaboration sets the frame for a better understanding.

In particular, the epistemic domain involves internal workings, norms, practices of research, which is what we have previously defined as the culture and identity of a research institution. Then, we also need to take into consideration the theoretical framework, the organisational context in which the collaboration is held, hence its coordination.

The way in which individual scientists interact is often unconsciously influenced by the norms and practices that they are used to follow within their institution environment. These are essentially their epistemological assumptions and they can greatly differ from institution to institution.

¹⁹ E.A. Corley et al., *Design and management of multi-institutional research collaborations: theoretical implications from two case studies*, in «Research Policy», 35.7, (2006), pp. 975-993.

We identify these differences within a collaboration as 'multiculturalism'. Multiculturalism could be a significant obstacle in interdisciplinary and inter-institutional collaborations because methodological or epistemic norms within a discipline and consequently within an institution's culture often define the "rules" that the research group that represents the specific discipline or institution uses to carry on its research work and to deal with eventual obstacles and issues. These practices and rules can also affect the way research groups present within the collaboration not only conduct their research work but also talk to each other and how they see and intend each other's results and progress.

As previously mentioned, the context chosen for this work's analysis is the collaboration framework of a European project. This particular framework is designed by bringing together researchers, research users, policy makers and, sometimes, students. The aim of these gatherings is usually sharing funding resources, equipment, infrastructure and know-how. The success and the failure of reaching this aim, however, might depend on the commitment that every partner has in order to reach the goal of the collaboration. Moreover and most importantly, in order to do so, a certain level of unity in every institution practices and approaches might be necessary. This unity is certainly given by the European Commission's guidelines and rules. However, these might not be treating with enough attention the diversification of institutional cultures. The case study of this work will try and give an answer to this particular point.

3. The ambivalent value of European projects: unity and variety

For a better understanding of the context of this research, this chapter aims to analyse the two opposite values that define European projects: unity and variety.

3.1 Unity

The concept of unity in a fragmented and various environment like the European Union reflects the one of standardisation when it comes to EU research projects. The unifying force of the European Union does not necessarily mean homogeneity. Indeed, in some respects it fosters and allows differences. The research environment within the European context sees many forms of diversity living in close proximity, many disciplines that come together aiming to solve a common problem and several research institutions whose work is moved by the same goals and principles. The European Union/European Commission provides the organisational, ethical and social commonalities to hold this heterogeneity together and thereby to allow and support diversity.

Research collaborations usually have to face the challenge of institutional 'multiculturalism', especially in the European framework. The aspect of heterogeneity, in all contexts of human and institutional interaction, is felt to be needing a fixed point, usually found in its unity. This means that uniform standards that all institutions must follow in order to be part of the collaboration need to be created.

"Research into technical standardisation contributes to explaining technology's development by examining coordinative aspects of its formation. Insufficient attempts at coordination - to give an extreme example - can result in incompatibility of various devices and to failure of a technology, whereas successful coordination provides a basis for the accommodation of diverse gadgets. Large technical systems especially rely on coordination: not only with respect to construction and maintenance but also with respect

to operation and use. They are technical rules that specify relational properties of artefacts. Compliance with these rules ensures compatibility and this ensures the artefacts' smooth interoperation in a system.”²⁰

During the past decades some important attempts of standardisation have been made, like the San Francisco Declaration Act on Research Assessment (2013), where a group of editors and publishers aimed to better unify the measures of journals impact and the quality of the researches they presented. Also, the Framework Programmes for Research and Technological Development created by the European Union/European Commission constitute an instance of standardisation of different nations research policies.

The San Francisco Declaration Act on Research Assessment

The San Francisco Declaration Act on Research Assessment was born by analysing the issues related to the fact that the impact factor of journals does not reflect the actual quality of the research they present. This discussion ended in a set of recommendations to be followed by funding agencies, institutions, publishers, researchers and organisations that supply metrics. The importance of this Declaration sits in the first steps that the scientific community is taking in order to increase the quality of research evaluation, thus, its integrity. The Declaration therefore aims to give guidelines and recommendations in order to make an institution not only trustworthy, but also trusted. The respect of these guidelines by institutions would put them in the condition to be trusted as a meaningful source of knowledge by society. Although the concept of what it means for an institution to be an accurate source of knowledge is still changing together with the concept of expertise, “the role is still fundamentally about providing accurate information”.²¹

²⁰ S.K. Schmidt et al., *Coordinating technology: Studies in the international standardisation of telecommunications*, MIT press, 1998, pp. 1-353.

²¹ G. E. Kaebnick, “Anthony Fauci Shows Us the Right Way to Be an Expert”, *Scientific American*, 26 March 2020.

What this transition is fundamentally about is to make institutions take a stand and responsibility within these matters.

The San Francisco Declaration Act is therefore an instance of standardisation that tells us how deeply connected are the science environment and society. It is also a further confirmation of the role of communication inside European projects, which does not only consist in presenting and showing to the public what the research is doing but it says also a lot about society and what is the role of science in society.

Framework programmes

The creation of a trustworthy and accountable research in Europe has its roots at the beginning of the creation of the Framework Programmes. “Research has a long history in Europe, but the emergence of what is now the European Union has created a novel concept of European research. Over recent decades, it has gradually acquired the sense of deliberate collaboration between European countries linking first their research activities, then their policies in this field.”²². The more the EEC/EC/EU enlarged, the more its Member States had the chance to participate in research collaborations through the Framework Programmes. The Framework Programmes have also enabled better coordination of research between the European Commission and national governments. “Member States have gradually increased the level of research coordination and the growing scale and scope of the Framework Programmes has been instrumental in this”. National research strategies started to develop in Europe and the growing synergy between research policy and innovation policy has led to greater convergence of objectives. These objectives have then merged into Framework Programmes such the current Horizon 2020 Programme with its emphasis on delivery of solutions for the major societal challenges that Europe faces.

²² B. Deighton and P. O'Donnell, “Europe’s Framework Programmes – a key element of research policy in Europe”, *The EU Research & Innovation Magazine*, 16 December 2014.

“After 30 years of development, the EU’s Framework Programmes have become a key element of research policy in Europe.”

The aim of the European Commission was the creation of an organisation whose administration reflected the complexity of the European research environment. The EU wanted to create 'European citizens' also through European research, a common environment of formation and education with different cultures in it. This brings us to the 'multicultural' environment that is the object of this work, a multiculturalism not only between people but especially between countries and institutions. It is from these needs that the double values of unity and variety of the European projects come from. From this point of view, the Framework Programmes can be seen as a multi dimensional context in which the single programmes and institutions can find their own different points of intersection with each other. The importance of this system lies in the interaction between its components aiming to a common goal. This applies to research and also to other several fields like agriculture, industry and communications. The context provided by the Framework Programmes would make it possible for large and disparate groups of research institutions and countries to meet specific, broader and common aims, guaranteeing their subsequent beneficial action.

These examples of standardisation have been instrumental in the construction of the present scientific research context. In particular, this work wants to focus on European projects within the Framework Programmes and drawing the attention on the ambivalent value they have. In fact, their standardisation nature that aims to unify broad and complex environments also comprehends the variety between its parties which differ in many aspects.

3.2 Variety

Research projects funded by the European Union within specific Framework Programmes are entities composed by institutions all over Europe. They can be described as international entities, since by nature they represent a form of international gathering. European projects differ in many aspects, depending on several reasons such as the main scientific discipline object of the research, the goal of the project and the number of partner institutions. Within the Horizon 2020 framework, in the period between 2014 and 2016, 13 903 grants were signed ²³, each one of these with its own characteristics and aims. Every project evolves into what we can intend as an organisation, developing its characteristics and environment. There is no doubt that such projects are created on the base of existing ones as models, nonetheless the variety among different European projects is immense.

The variety of European research projects is visible when it comes to membership: the projects and their consortiums range from some institutions that come from the same discipline or geographical area, to others that widely differ in disciplinary or national distance. Some organisations select membership along ideological lines, in accordance to their purpose. Therefore, variation is also visible with regards to their fields of research activity. For instance, some deal with applied research and others address issues of more theoretical and basic research.

In addition, variety can be seen in the creation of consortiums that comprehend institutions coming both from the public and the private sectors. This aspect easily creates different forms of networks, comprehensive of diverse institutional identities.

The norms and guidelines provided by the European Commission apply the same principles to all the projects they fund. As previously mentioned, this aspect of standardisation is extremely valuable in order to give unity and to regulate the behaviour of

²³ European Commission, "HORIZON 2020 in full swing Three years on KEY FACTS AND FIGURES 2014-2016", December 2017, available at <https://ec.europa.eu/programmes/horizon2020/en/horizon-2020-statistics> (April 2020).

institutions. On the other hand, the variety among research projects regarding their composition, their set-up or their tasks can become an issue if the concept of institutional 'multiculturalism' is not taken enough into consideration.

All international and 'multicultural' research groups are thought to work on the basis of common guidelines and norms formulated by the European Commission, which, on an organisational level, are the perfect solution to the multidimensional environment that EU projects represent. This work wants to also draw the attention on the epistemological level of these guidelines and on what results when applied to extremely diverse work environments and research collaborations. A more 'multicultural' language might be needed to face with the variety of disciplines and institutions that come together thanks to the Framework Programmes, with the term 'multicultural' suggesting the applicability to different environments created by the different institutional composition.

Variety is a leading characteristic of European Projects, it widens vision through many point of views. Nonetheless the norms and guidelines tend to treat most of these entities as if no variation exists.

This short analysis on the variety of EU projects can lead to the question: is it feasible to subject all collaborations and projects to the same sets of rules and guidelines? For instance, it might be wondered whether it is correct to treat consortiums that comprehend profitable money making entities in the same way as the ones that include entities devoted to the global good.

3.3 Communicating 'multiculturalism' in European projects

A large part of the European guidelines for its research projects is dedicated to communication. After having outlined the concepts of institutional identity and culture, multiculturalism, institutional communication and having explained how ethics play a vital role in the process of building the identity of an institution, also after having set the frame

on the specific context of European research projects, this work wants to focus on how to communicate the 'multiculturalism' of EU research collaborations. Institutional 'multiculturalism' is at the base of the communication issue we find ourselves in when it comes to communicating European projects. If institutional communication has the role of representing the identity and the message of an institution to the external environment, then communicators in charge of a EU project have to deal with its 'multiculturalism', with the heterogeneity of communication practices that each institution brings and with the ethical regulations that all the institutions have within their identities and cultures.

The norms and guidelines concerning communication practices given by the European Commission require the communication of the project to be carried out by the institution that coordinates the project. This aspect might be an obstacle to the role that communication has for an institution. The reason to this is that a good institutional communication needs to represent the institution, in this case the project, in the most complete possible way, hence it has to face with its 'multicultural' character. The solution of choosing the coordinating institution of the project to also coordinate its communication can be effective and also dangerous. The institutional influence that is part of the identity of that specific institution can also shape the way communication is conducted, and this aspect can go against the other partners of the project, who might want different values or advancements to be communicated.

4. Communication as a building pillar for an ethically performing research

4.1 What is institutional communication

Institutional communication is a wide and complex concept that can be analysed under several aspects and from different point of views. The expression refers to the combination

of all the activities involved in the creation and sharing of an institution's image and values. One of the most important aspects when professionally communicating an institution's identity is having clear and precise messages. What the institution wants to communicate, before everything else, which media to use and to which public of interest. An institution's message is its core and living purpose. It represents a conceptual and empirical link between the institution's activities and the organisational communication, providing an interface that can be used both internally from workers and researchers and externally, used by several other parties such as media, stakeholders and the general public, to mention a few.

Research institutions have a strong ethical identity which has to be communicated both internally and externally. Institutions need to transmit coherence, credibility and trust. This aspect applies to communication among institutions and to communication toward stakeholders (external communication), but it also concerns communication among the parties of the institution (internal communication).

4.2 How institutional logics shape an institution's action

The term 'institutional logics' is used to describe systems composed by beliefs, values, rules and other cultural elements that are used by groups of people, organisations and institutions in order to give purpose and evaluate their activities. Hence, institutional logics is able to influence the behaviour of groups of people which can bring to the action of an institution.

As Thornton & Ocasio have pointed out, "The interests, identities, values, and assumptions of individuals and organisations are embedded in institutional logics"²⁴. The two experts take into consideration a variety of contexts such as markets, industries, populations and, more broadly, society. Nonetheless, their research gives us a strong

²⁴ P. H. Thornton and W. Ocasio, *Institutional logics*, in «The Sage handbook of organisational institutionalism», 840, (2008), pp. 99-128.

example to which we can refer when dealing with more specific contexts like the institutional framework, the object of our research.

According to Thornton and Ocasio (2008), the individual, organisational, and institutional levels of society are nested and interconnected. However, they acknowledge that most studies “tend to emphasise one level over another, so the interconnectedness of the levels remains self evident or theoretical, but undemonstrated” (p. 104). Indeed, they argue that researchers still need to better understand how the broad institutional structure influences individuals’ orientations and their actions, preferences, beliefs. These orientations actually influence how individuals act and their actions constitute the macro level outcomes that we seek to explain (p. 120).

For the Authors, institutional logics shape individual and organisational action in diverse contexts like the contexts for status and power. Also, they affirm that a key mechanism by which institutional logics shapes individual cognition is through social classification, categorisation and attention.

4.2.1 How institutional logics affect an institution’s communication

The more a group of people expands becoming a collective identity, the more it needs to be institutionalised. Its institutionalisation sees the formation of an ethical regulation, a structured organisation and an institutional logic.

The building of institutionalism, as previously discussed, gets to a point where it needs to better connect all the areas of the institution. That is to say the creation of a common logics that everyone can refer to internally and that also the external environment can perceive as consistent. It is in this context that the concept of institutional message is introduced.

Institutional Message

On a communicative perspective, the institutional message can be seen as a transmitter or connector. The message reflects the institutional identity and logics both internally and externally. To see how this is so, we need to first understand the concept of message more generally and then explore and develop the idea of the institutional message.

Before so, it is important to clarify that the concept of message between institutions differs from the one between individuals. Many experts are discussing whether institutional interaction can be analysed on the level of human interaction and ethnomethodologists have come to the conclusion that the sense of institution remains different from the social approach to interaction between individuals. Therefore, a distinction has been made between the principles of institutional interaction and interaction between individuals.

However, the focus of the studies mentioned above tends to be the management and nature of conversation; what this research wants to analyse is how the content of such conversation is influential in the outcome of the relationship. Therefore, we need to focus our attention on the message an institution's identity communicates when interacting with other institutions, stakeholders, and also internally. This message, as already mentioned, is strongly related to its logics and culture.

One of the most common senses in which institutional message is used refers to the effort of an institution to create a representative 'image' of the institution. This image has to be in alignment with the activities, values and goals of the organisation and it has to be communicated both internally and externally.

External and internal audiences

It is important that the institutional message reaches internal audiences as much as external ones. Especially when the message carries core values or norms that are meant to be applied to everyone.

Communicating this image internally will create awareness among the individuals who compose the institution, creating a community and the willingness of taking part in embracing that specific message.

On the other hand, communicating the message to external audiences is necessary to create a conversation between the institution and every actor who will come into contact with it.

The practices of institutional communication and the institutional message represent a narrative that has the role of expressing an institution's identity, to show to the external audience its values and accountability. This idea is sometimes expressed as "institutional voice."²⁵

"Communication specialists recommend that organisations find and express their voices in strong institutional messages: condensed narratives that convey the meaning and value they wish an audience to associate with their organisations".²⁶ The institutional message is also used to inform the public on specific advancements and news. More broadly and most importantly, the institutional message only wants to represent a signal about the existence of an entity and everything else that is related to its existence. The simple existence of an institutional reality communicates something and the institutional message exists independently of the direction its individuals want it to take. Thus, at the organisational level, the institutional message communicates the core meaning of an organisation to internal and external audiences. Therefore, the institutional message is understood and gains value when aligning an institution's activities and image with rules established in its environment, consistent with the observations of institutional logics.

²⁵ J. C. Lammers, *How institutions communicate: Institutional messages, institutional logics, and organisational communication*, in «*Management Communication Quarterly*», 25.1, (2011), pp. 154-182.

²⁶ Ivi

4.3 An ethical communication

Communicating ethically is a fundamental requirement for every institution, and even more strongly for research institutions. Both communication and ethics are integral parts of all human interactions.

When approaching the world of the ethics of communication, it is necessary to consider a variety of contexts and perspectives that institutions have in order to better understand how an ethical communication can actually influence actions. Since the nature of institutional communication tends to be comprehensive of several other aspects in an institution such as policy making and management, its ethics is a key principle. Institutional communication questions can be examined in several communication contexts, from theoretical perspectives and by different modes of ethical reasoning. For instance, an institution's mission statements might comprehend a wide frame of ethical values and ideals to which the institution aspires. Moreover, more hidden ethical questions exist in every day life behaviours and operations.

Ethics of communication needs to look not only at individual and intersubjective discourses but also and especially at institutional norms, structural arrangements, and systematic patterns. The question of communication ethics comprehend an institution's norms, habits and patterns of communication. Therefore, it takes into consideration implicit and explicit contexts.

Norms

Institutions have the power to impose, maintain, repair, and transform particular modes of social structuring that explicitly and implicitly condition our ideas about the good. Politics and ethics are therefore deeply interconnected, especially because ethical values often reach a level of social and cultural importance in research institutions. And by doing so, they become norms and not merely customs.

Social norms become a framework within which the concept of what is ethically correct to pursue by a specific institution is produced. These norms become part of the institution's interconnected social structure. Consequently, they also become the context in which the communicative action is conducted. "Without predetermined conventions, human interactions would be fraught with peril or even simply impossible. Similarly, what some consider to be the social contract, the implicit moral obligations we have by virtue of being part of society, make everyday life in the shared social world possible."

Justice

Also the ethical value of justice often affects questions of communication ethics. The concept of justice concerns matters of rights, fairness, discrimination, equality, equity, impartiality, participation, privilege, recognition, and so forth. When analysing communication within this context, it becomes natural to put communication under questions of access to information. These are based on the power that institutions have of being able to give access to information to citizens.

For example, since communication has the social power of transferring knowledge and making it available to advantaged social groups, it could also have the function of withholding it from less advantaged social groups. This situation of social "dialogue" can inadvertently become an instrument of injustice.

4.4 Communication in "multicultural" contexts

The role of communication inside a 'multicultural' environment concerns the coordination of the plurality of realities present within it. Following the concepts previously analysed on institutional identity and logics, we can now understand how complex such environments are. In fact, one of the challenges concerning the communication of European projects is their 'multiculturalism'. The context of these large projects is composed by various

institutions and disciplines that work toward the achievement of a common goal. This work setting is characterised by a mixture of institutional identities that communicate with each other and with the external environment.

Communication is an essential requirement because, as previously said in Chapter 2.1, the element of transparency demands to communicate and share the scientific production or advancement with multiple stakeholders. From a communicative perspective, what an ethical research needs to focus on is not only the access and sharing of information but also how information is shared, to whom it is communicated and whether opportunities for participation and feedback by external actors is communicated. ²⁷

Scientific communication is therefore capable to facilitate or hinder transparency efforts, being the medium between scientific research and society.

So, how does corporate communication act accordingly to the institution's ethical identity? As the exploratory qualitative study developed by Fairbanks ²⁸ affirms, the commitment of an institution or organisation (like a project) to have a transparent communication is influenced by communication practices, organisational support and resources provision. In order to achieve transparency, institutional communicators need to adopt practices that promote open information sharing.

By making information more understandable, relevant and easily findable for stakeholders, institutional communication would enhance the transparency and therefore all the related ethical values that the institution carries along.

²⁷ H. J. M. Ruijer, *Proactive transparency in the United States and the Netherlands: The role of government communication officials*, in «The American Review of Public Administration», 47.3, (2017), pp. 354-375.

²⁸ J. Fairbanks et al., *Transparency in government communication*, in «Journal of Public Affairs», 7.1, (2007), pp. 23-37.

This makes us understand how strongly communication practices are involved in the building of an ethical institutional identity and, maybe, in the effectiveness of a multi institutional entity.

4.4.1 European Projects

The European Commission has created and promotes funding programmes to support and foster research in Europe. The objectives of the funded projects vary depending on funding periods and they are covered for a period of five or six years. The Commission provides guidelines and norms for the projects to be followed. These guidelines also concern the good communication practices to be carried for the duration of the research project.

Below is an example extract from one of the guidelines given by the EU Commission to anyone involved in its financed projects, within the Horizon 2020 framework.

“Communication, dissemination and exploitation — a team working on H2020 project is called upon to take part in various activities that will bring their research to the attention of as many relevant people as possible. What we call here ‘communication’ is more than just an additional reporting burden. Europe's future economic growth and jobs will increasingly have to come from innovation in products, services and business models. With this in mind, communication about European research projects should aim to demonstrate the ways in which research and innovation is contributing to a European 'Innovation Union' and account for public spending by providing tangible proof that collaborative research adds value by: showing how European collaboration has achieved more than would have otherwise been possible, notably in achieving scientific excellence, contributing to competitiveness and solving societal challenges; showing how the outcomes are relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives

more comfortable in other ways; making better use of the results, by making sure they are taken up by decision-makers to influence policy-making and by industry and the scientific community to ensure follow-up. There is an enormous difference between communication strategically planned with these objectives in mind and ad hoc efforts for the sake of meeting contractual requirements. How often do we hear people say 'let's make a video to inform everyone' before giving any thought to what is to be achieved? How often do we resort to facts and figures, assuming they will be enough to convince people? Your contractual obligations are important, but communication is not an end in itself and quality is expected.”²⁹

One question that this work needs to explore is: do these guidelines take into consideration the “multi institutionalism” and “multidisciplinarity” that are the building character of the project? Are the institutions identities and contributions to the project all represented on a communication level? The coordinating institution of the project and its communication face a challenge of unity, being in charge of carrying all the requested communication actions of the project. The issue that this works wants to analyse is the one that comes with communicating an entire consortium identity, filled and composed by a multitude of different approaches dictated by the different nature of the parter institutions.

5. Case study: European project ‘SOPHIA’

The role of the case study in this work is to further illuminate the theoretical framework that is proposed. Even though the case study introduced here constitutes a good example of our theoretical discourse, indeed it does not span the full range of the proposed theoretical

²⁹ European Commission, “Communicating EU research and innovation guidance for project participants”, 25 September 2014, available at https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf (April 2020).

framework. Yet this case does contribute to a better understanding of the relationship between ‘multicultural’ collaborations, the epistemic domain of research and effective communication practices.

The nature and magnitude of the networks and relationships that a European project collaboration entails cannot be easily determined by the usual methods of observation. Nevertheless, interviews and questionnaire are a necessary starting point that this work needs to analyse and find meaning in it. Because of the complex nature of institutional interaction that takes place between or among collaborators over a period of time, the method used for this case study comprehends a qualitative action and a quantitative action.

5.1 SOPHIA

The object of this analysis is the European project SOPHIA (Socio physical Interaction Skills for Cooperative Human-Robot Systems in Agile Production), funded by the European Union’s Horizon 2020 Research and Innovation Programme (H2020-ICT-2019-2/ 2019-2023), under grant agreement No. 871237.³⁰

The Project

The aim of this project is to create robotic technologies able to socially cooperate with humans in daily repetitive tasks. The stated objectives of SOPHIA are “to achieve a reconfigurable and resource-efficient production and improve human comfort and trust in automation, in hybrid human-plus-robot manufacturing environments.” The project multidisciplinary comprehends robotics, social science and humanities, control engineering, standardisation, industrial production and ergonomics. Being comprehensive

³⁰ Horizon 2020 project SOPHIA, Grant agreement n. 871237, available at <https://project-sophia.eu/>.

of several disciplines and in order to succeed, “it includes a large network of Digital Innovation Hubs for agile manufacturing (Trinity, DIH2, Flanders Make, DIH Umbria) and healthcare (DIHero) to ensure that its core technologies are “compliant by design” to standards in the field of human-robot interaction and collaboration.”

The consortium

The consortium of SOPHIA is composed by thirteen partners which are listed below, with the coordinating institution of the project being Istituto Italiano di Tecnologia.

Science and core technology partners

- Istituto Italiano di Tecnologia - Human-Robot Interfaces and Physical Interaction laboratory
- Istituto Italiano di Tecnologia - Humanoid and Human Centred Mechatronics laboratory
- University of Pisa
- University of Brussels
- University of Montpellier
- University of Twente
- INAIL (National Institute for Insurance against Accidents at Work)
- BAUA (Federal Institute of Occupational Safety and Health)

Exploitation, impact and regulation partners

- DIN (German Institute for Standardization)
- IMK ergonomics

Core technologies assessment partners

- Hankamp Gears
- Hidria
- Volkswagen

The division of the partners in the three categories is dictated by the role of the institution within the project. Hence there are partners who deal with the pure research work, others who deal with the social and interaction aspects of the technology and others who represent the technology use cases.

What this work wants to analyse is the interaction between the diverse nature of the institutions, nonetheless also considering their role. Therefore the division of the partners that this work needs to take into consideration is the following:

Research partners

- Istituto Italiano di Tecnologia - Human-Robot Interfaces and Physical Interaction laboratory
- Istituto Italiano di Tecnologia - Humanoid and Human Centred Mechatronics laboratory
- University of Pisa
- University of Brussels
- University of Montpellier
- University of Twente

Governmental partners

- INAIL (National Institute for Insurance against Accidents at Work)
- BAUA (Federal Institute of Occupational Safety and Health)

Service companies partners

- DIN (German Institute for Standardization)
- IMK ergonomics

Industrial partners

- Hankamp Gears
- Hidria
- Volkswagen

5.2 Interviews

The qualitative approach to this case study consists of seven qualitative interviews to selected team leaders. Three interviews represent the research partners, one of which is the coordinating institution. One represents the governmental partners, another the company partners and one represents the service companies. Finally, one interview is dedicated to the communication practices of SOPHIA.

The opinions collected with these qualitative interviews are vital to understand the mindset and environment in which the research work is carried on. This gives us an idea on how the team leaders interact, communicate and most, importantly, if there is cohesion and homogeneity among their ideas and goals.

Results

The main goal of the qualitative approach to this work is the understanding of the actual existence of what we have called 'multiculturalism'. By interviewing seven selected leaders of the project, the aim is to find out on what extent the nature and identity of their institution is diverse and therefore influences the fragmentation of the environment in which the collaboration takes place. The different nature of the institutions might cause the existence of what we have called variety, nonetheless it is still possible that despite the different institutional identities, unity prevails. Communication practices being shaped by these internal workings, gives us a starting point in the understanding on how to best professionally communicate European projects.

By analysing the interviews, it is immediately clear that the project is characterised by a variety of institutional natures. This lead us to the understanding of the challenge that the coordination surely faces, since some aspects of research are not seen equally between all institutions, especially the industrial ones which are more business oriented, as the coordinator of the project Dr. Ajoudani affirms. This aspect also affects more bureaucratic aspects of coordination, for instance with governmental partners; “They are easy to work with but they have a lot of rules and regulations”.

This fragmentation can also be seen as variety, and therefore be exploited on favour of the project, one of the most common ideas among the interviewed leaders considers this heterogeneity as an opportunity to use others expertise as well, to overlap expertise. On an institutional communicative perspective, the project’s multiculturalism is one of the biggest challenges. Indeed, every institution identity also influences its approach to communication, this is a big part of what we intend as institutional culture. Almost every respondent agreed on the existence of an inevitable difference in vision between academic, industrial and public partners. This difference of vision is rooted in the identity of the institution and its culture, communication has the role of creating an image and a message for the project; the challenge in doing so when dealing with not one institution but a multitude of them is real. The importance given to communication or ethics or research is given by the nature of the institution therefore its identity. This aspect strongly affects the way communication is carried on.

5.3 Survey

With regard to the quantitative approach, a survey was submitted to the consortium to be compiled by all researchers and administrative workers. By doing so, this work tried to understand in what way the relationships and the framework of SOPHIA are under the

influence of the institutional identities and cultures. The survey is finalised to have an overall view of the level of 'multiculturalism' and how it affects the approach to communication practices.

Results

As previously pointed out, the present survey takes into consideration the quantitative opinion of most part of the consortium members. Depending on the nature of the institution, what the survey wants to find is the engagement in communication practices by their members. The heterogeneity of the answers is given by the variety of the institutions that took part in the survey (Fig. 1).

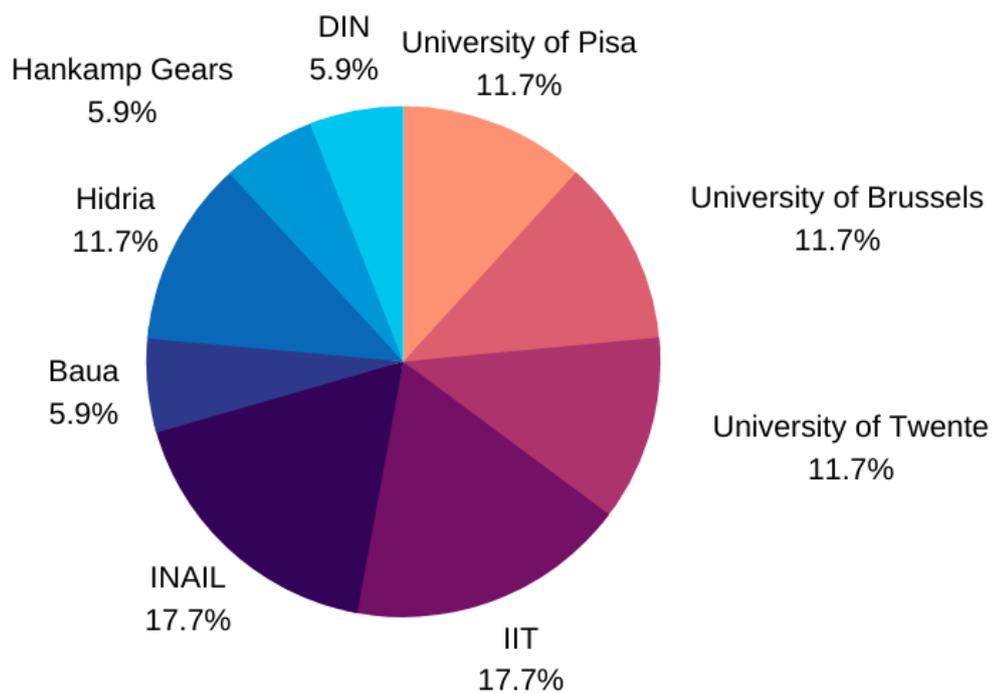


Fig. 1. Institutional presence in the survey.

In order to comprehend in depth the composition of the consortium, Fig 2 shows the major areas of expertise of the people who took the survey. Most part of the consortium is

composed by researchers, the remaining parts are composed by research and development personal and administrative staff. This gives us an overview not only of the work environment of the collaboration but also of the specific fields of interest. Having an

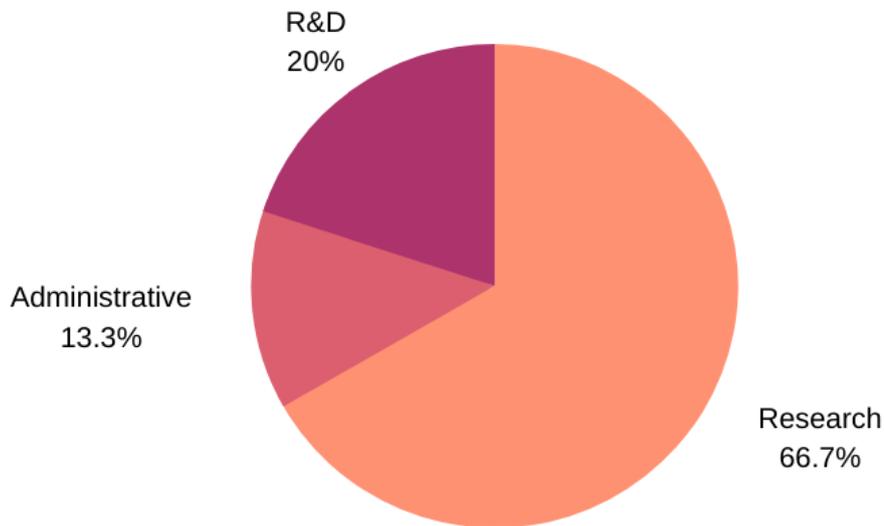


Fig. 2 Areas of expertise.

overview of this composition could help us better understand the reasons behind their answers.

How communication is perceived within the SOPHIA multi institutional collaboration is one of the first matters that I believe is necessary to analyse. The reason to that is the representative aspect of institutional communication; the communication practices of an institution, organisation or a project need to be representative of the object of their communication. Therefore the engagement into communication practices and into a better understanding of how they are seen within a specific framework is a further step towards finding the best solutions.

Fig. 3 shows how strongly the consortium thinks communication between administrative and research staff affects the quality of the project.

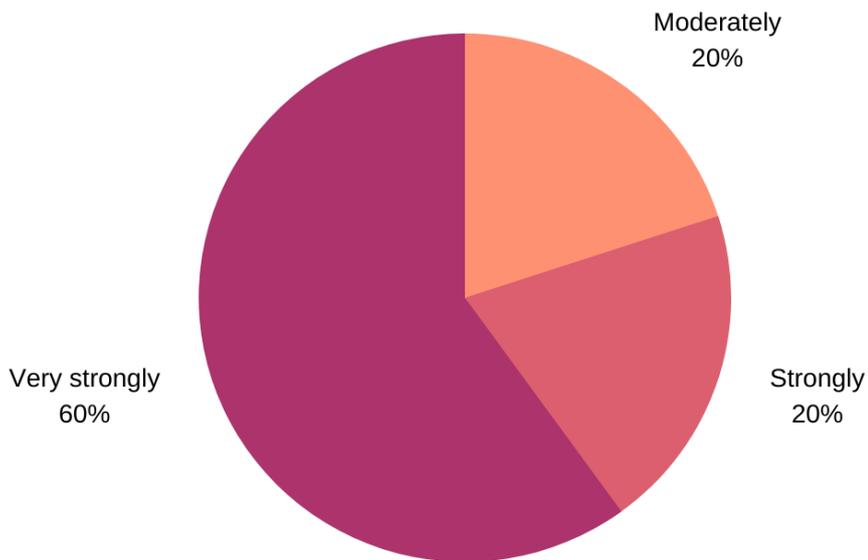


Fig. 3 How strongly communication affects the quality of the project?

However, the reasons to this results can be seen in Fig. 4, showing that the totality of the consortium members who took the survey believes that internal communication is mostly used to coordinate research and work operations. This data is emblematic in saying that most researchers and members of a project like the one hereby taken into analysis have no knowledge of the role of communication as a building pillar of an institutional and organisational identity, culture and ethics.

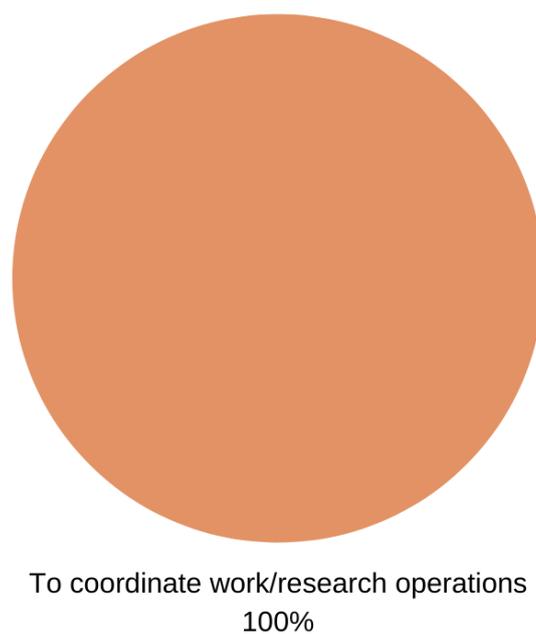


Fig. 4 What is internal communication used

When asked “what professional communication is to you?”, the majority of the consortium members answered “an exchange of information” (Fig 5).

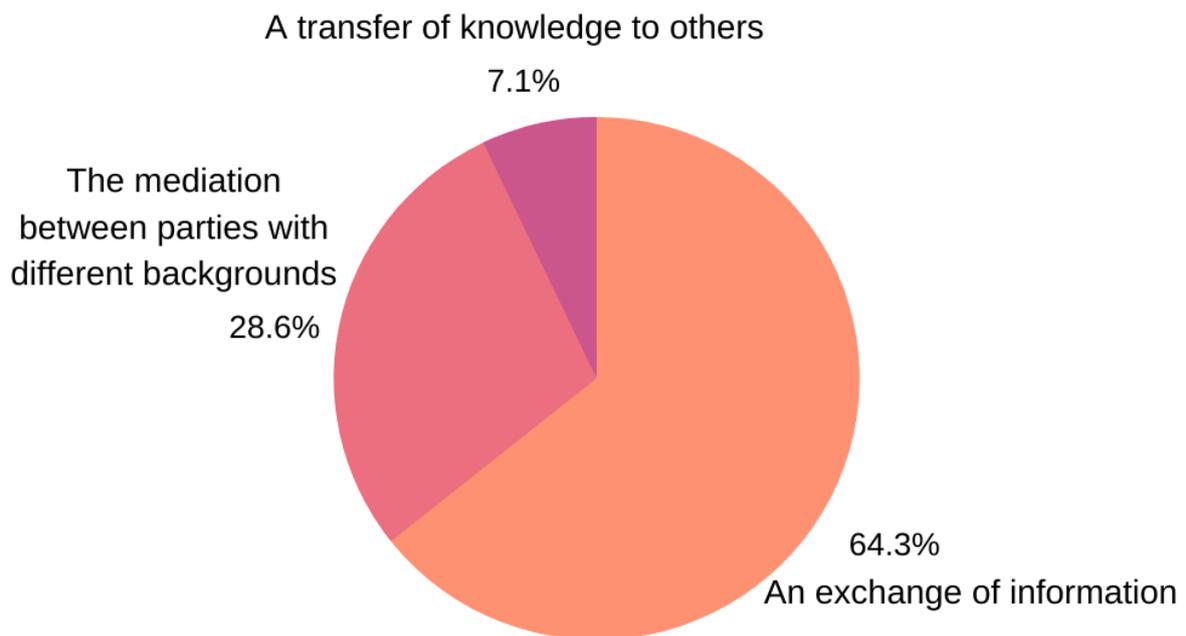


Fig. 5 What is professional communication?

Although almost 28% answered “the mediation between parties with different backgrounds” and therefore demonstrating an awareness of the principle of mediation, which is not a mere transfer or exchange of information but the manifestation and result of deep mechanisms of identification and culture building.

This confirms the point mentioned above; the awareness on the role and the effects of deep communication practices is rarely known and understood within scientific environments. This aspect can strongly influence the way communication is conducted by the professionals.

Let’s now focus on another aspect of communication, that is the one related and linked to the outcome of a research project. A collaboration by definition works at the condition that its partners interact and build relationships. On this matter, SOPHIA sets a positive example of interaction. In fact, when asked how strongly communication between partners affects

the ultimate success of the collaboration, the whole consortium agreed in responding “strongly” or “very strongly” (Fig. 6).

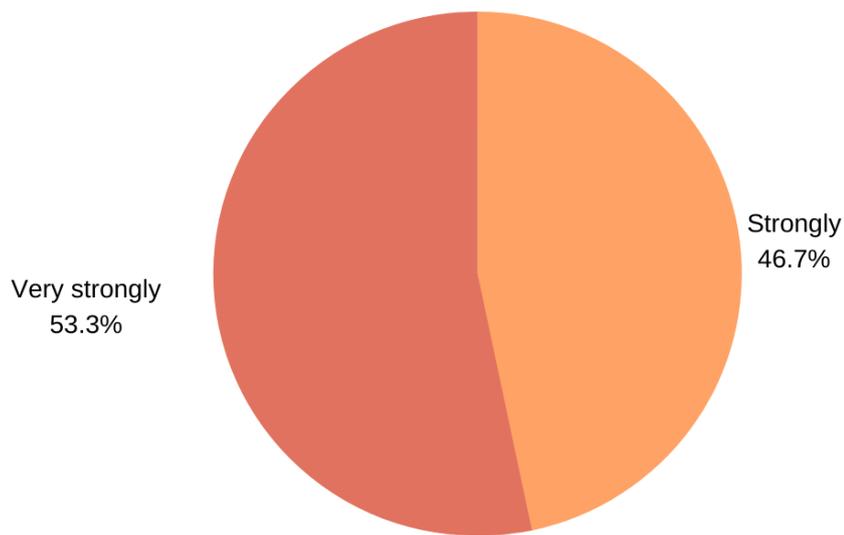


Fig.6 How strongly communication between partners affects the success of the collaboration?

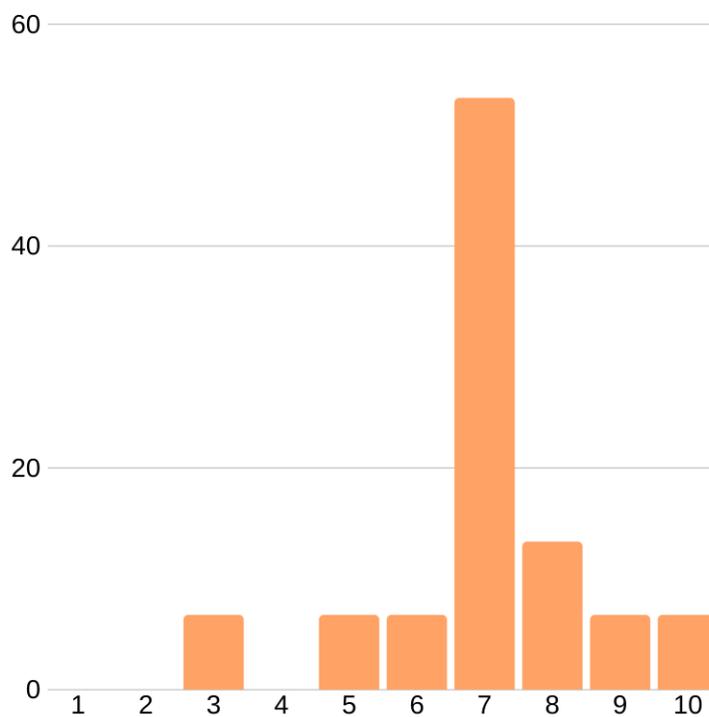


Fig. 7 Level of connection between SOPHIA's institutions.

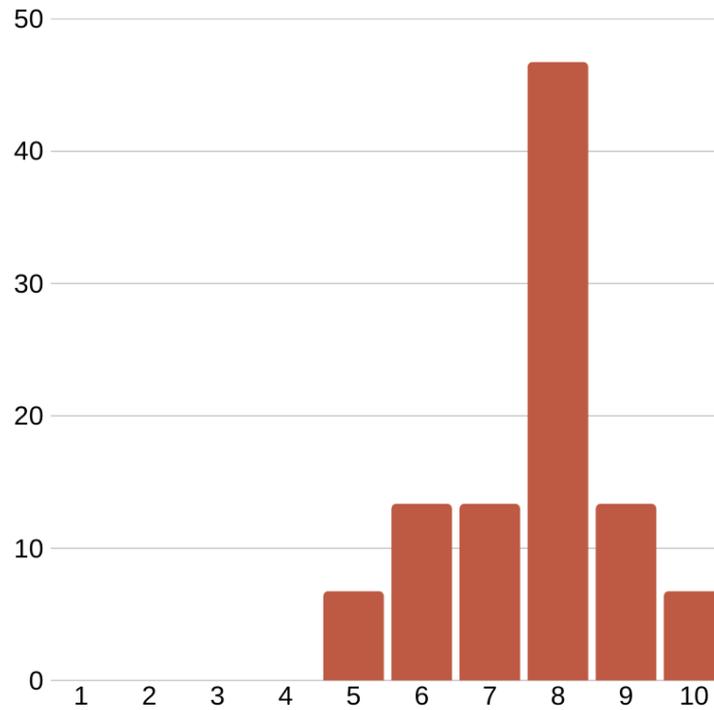


Fig. 8 Level of unity in SOPHIA's research practices.

This aspect is therefore not influential in the way communication is conducted, but rather an added value to SOPHIA as a European project.

6. Conclusions

The present thesis has analysed the communicative issue of representing 'multiculturalism' within the context of European projects. Since the very nature of communication is representing knowledge, it can be clear to see its final effect but it is more difficult to understand the reasons behind it. These reasons are often to be found in disciplines that have nothing to do with communication itself. Therefore, the comprehension of such communicative issues has to be investigated from other points of view. In this case, in order to fully comprehend this matter and find a possible elucidation, this work has investigated its roots in the building of an institution's identity. Furthermore, it has moved to comprehending the birth and aim of European projects within the context of the

Framework Programmes. Finally, the communicative aspect was deeply analysed as a fundamental factor in the building of the institutional identity but also as a mean of representation of the institutional reality in European projects.

By following this theoretical analysis, it has been understood that communication practices are strongly involved in the creation of the identities of institutions and consequently they also affect the identity of European projects, which are composed by a plurality of institutions. It is precisely this institutional 'multiculturalism' that creates communicative matters, being communication the main tool of representation of an institution or a plurality of institutions' context.

Representing 'multicultural' European projects on a communicative perspective is a challenge that, based on experienced observations, this work wanted to formally express.

Finding an eventual solution to this matter requires further analysis and surely more cases to take into consideration. Even so, one possible direction to take can be defining more specific guidelines on communication practices that each institution that is a partner in the project should adopt. Furthermore, it is in the best interests of the project and therefore of the funding institution of the project that communication is as effective as possible. This would possibly bring the European Commission to provide one person in charge of the communication aspects of the project. Thus, giving this person the responsibility of coordinating the communication work of all the institutions that are part of the project. Therefore, another possible direction to take is to hierarchise the communication representatives of the project. The overall communicative aspect would be taken by none of the institutions part of the project, and yet all the communication representatives of the single institutions would still need to take care of their own part of the internal and external communication practices. The project's communication main coordinator would be provided by the European Commission and would work very closely with the project's communicators.

Appendix - Interviews

Below are reported the transcripts of the interviews realised in the period between February 17th and March 26th, 2020.

Doctor Arash Ajoudani

Tenured scientist - Principal Investigator in Human-Robot Interfaces and Physical Interaction laboratory at IIT Istituto Italiano di Tecnologia

SOPHIA Scientific Coordinator

Doctor Ajoudani, do you think research practices have unity inside a collaboration with many institutional diversities in it?

I think that, if the collaboration is goal-oriented, unity is a crucial requirement. This is because if it is goal-oriented and there is no unity, the project will lose much time to create the 'languages' every partner can speak to understand each other. Of course this is a killing aspect for the project, because every partner has timings and deadlines and in order to comply with them the whole consortium needs to standardise, let's say, a language to talk to the people. This unity will help everyone understand each other better and move on with the objectives to reach the project's goals much more efficiently. So yes, it is definitely a requirement for objective-oriented projects. But some projects are exploratory, they have no unifying objective, but a lot of different approaches to a simple problem. I can see a value there, but still I believe unity is a requirement in goal-related projects.

Is SOPHIA goal oriented?

It is, because it is based on use cases, which means that the project has some industrial partners that need to improve something, such as adding a part, making productivity

better, changing the way things have been done traditionally in order to make them better and more effective for the humans of the company. This itself is a goal. In order to be able to reach that goal the project needs to have standards to talk to the people and unity is a crucial requirement. For most of the robotics-based approaches aiming to integrate research with a materialistic goal, unity is a very crucial part.

How did you create the consortium?

I think that, in the creation of consortiums, the most important thing to do is to make sure that you cover all the requirements in terms of science, technology and use cases (for our type of project). As a coordinator you need to make sure that all interdisciplinary topics have been covered. For instance, in terms of technology, if you have different technological needs, you need to have these technologies covered; for standardisation if you want to make some of these technologies a standard you have to make sure that the standardisation part is taken care of. And, eventually, make sure that all these aspects are going into a unified direction which basically is a use case. In Sophia, we went for a use case-driven approach. We chose a use case and then we started analysing: if use cases are represented in all industrial automation, many of the requirements are industrial, and therefore, for such types of application, what do you need in terms of science, in terms of standardisation, of policymaking and so on? Then we chose the partners able to cover the requirements, each one having its own goal. But if they are too independent, then there will be no control all over, therefore you need to create a little overlap so people can advise each other. If you don't have those overlaps, people will do things without receiving feedback, but if you create those overlaps it's more efficient. At the same time, if the overlap goes too much, then you're using resources not correctly because you're using two parties to do the same thing which is not correct. Also, if they are completely

decoupled, then there is no monitoring and understanding if somebody is doing the right job. You need to create balance.

Were there with any partner of the consortium any difficulties to establish the partnership?

For many of the industrial partners, research does not count much, they do not really see the merits in research. Therefore it is harder to involve them. Basically, if you talk to industrial partners saying you want to do research from five to ten years and then this will become a product or maybe it will make things better for society, probably they will have shorter term visions or they will have strategic plans that they cannot change. But research is about open innovation most of the time, so they are not very comfortable with releasing all the good things and ideas. There were way less difficulties establishing partnerships with the academic institutions because they were more comfortable with the dynamics, they knew how things work and they were open and know how this world works. Industrial partners were to be involved due to Horizon 2020 requirements, and slowly they also are learning.

This aspect also goes with policy makers, like INAIL and BAUA. They are easy to work with but they have a lot of rules and regulations. In these types of institutions, it's the hierarchy that rules over everything. They belong to the government and they cannot easily release information or easily say yes or no because this reflects on a policy which the government is trying to make, due to its responsibility towards citizens.

Do you find anything different in the research practices of other institutions?

During the selection process, I always tried to pick the ones that worked as closely as IIT. And what I mean by that is that they have all the resources, they have good technicians support, they have students, they have a broad background knowledge. These are the

requirements for a project to start immediately, if you pick a partner that is new to a topic, until they establish the needs and fundamentals it will take time and also the approaches will be different. For instance, if their education system is very slow or if they are not very well technology-oriented, this might cause delays and issues in the process.

What's the purpose of SOPHIA?

The main purpose of SOPHIA is to bring many interdisciplinary researches together to create flexible automation systems. The traditional way of making cars works according to the line of production, robots are efficient because they can make one component repetitively a thousand times a month. But if you want to do customisation this is not possible, because then you would have to redesign the entire production process. This would cost a lot of money, nevertheless nowadays there is a lot of customisation. Everyone wants their product to be different, every provider and every customer. You need to create flexible systems that are easily adaptable to the different needs that a customer has. In order to be able to do that, flexible automation is required, for instance collaborative robot are one of the main examples. This is one of the main reasons why there is a lot of off-shoring, which means that a lot of companies go out of Europe. For instance, they go to Eastern countries where the workforce is cheaper because they have humans there, and humans are easily adaptable. You can tell your workers to do something different and from the day after they do it. To make the robots do this, you have to re-program and change the entire production line. SOPHIA stays in the grey area between fully robotics and fully humans based production lines, which is the collaborative robots solution we are proposing. For a human, doing repetitively one task all day long, and all year long is not only inefficient in terms of productivity but also brings many issues such as muscle disorders and problems in ergonomics. So we are creating flexible

systems with humans but also we are off loading a lot of loads on the robots to make the automation more flexible.

What are the next steps of SOPHIA?

We have a work plan and, since we are working with different partners, we need to secure this work plan, deliverables, tasks etc. Who works the deliverables? It's a consortium work. Starting from what we want to demonstrate at the end of the project, we break down our plan by technological needs, standardisation needs and then we break down by smaller and more specific tasks. For instance, if you want to make a robot move, firstly you need to build a robot that has wheels and then make algorithms that make the robot move. One task comes after the other one, so you make a deadline to make sure that the robot is built before you are able to implement the control to make it move and when it is moving you have enough time to take it to a use case like Volkswagen to show your product. These timing will help you understand what the procedure is and this is way more complicated in a European project because there are thousands of components interacting with each other with different work packages that all aim to a single goal. Every partner has its own detailed plan, they are aware of each others work. Usually, a final product is the integration of many components coming from different partners; they are not supposed to know the details of the whole organisation but they must be able to work with what they have. For instance, if one partner is working on a hand, maybe they don't know 100% about the wheels but they should know in a way if it affects their work because in the end we will integrate the two components in one. So we have e detailed plan which gives responsibility to the partners and throughout time it makes them do their job with coordination and efficiency.

What to do you think motivates collaboration in research?

Expertise and money. First of all, money. Because you can still do research in your own expertise and be able to publish and make patents and so on, but to be able to get projects of this size you need funding and funding is the main motivation. Of course this creates the opportunity to use others expertise as well, to overlap expertise.

Professor Bram Vanderborght

University of Brussels

SOPHIA Principal Investigator

Professor Vanderborght, what is your role in the consortium?

We are part of the interdisciplinary research institute of the University of Brussels, our role consists in taking care of the safety controls, therefore controlling that the robots work in an ergonomically way with the humans. Part of our group is also composed by some social scientists, this means that they investigate the acceptance of the technology that we develop in the consortium; if it not acceptable, we will modify the technology.

Why do you think you were chosen to be part of the project?

I did my PhD at IIT, therefore my work was very close to the field of collaborative robots, robots that assist humans, including the health aspect of it. During the proposal process, we saw the need for a multidisciplinary approach and I suggested the coordinator to include the sociologists from our university. Working in a multi disciplinar context is always a great challenge because everyone speaks different languages and it becomes hard to understand each others needs.

How do you manage to find unity in this?

We have a long history and therefore experience in the field. At the beginning of the process you may find some challenges but when everyone starts knowing and understanding each others' work then the process takes the right pace. The collaboration becomes simpler. Also from the technology point of view itself, you start combining disciplines and know how's.

How often are you in contact with the other partners?

We have a lot of interaction with the other academic partners. For what concerns the contacts we have outside the academic world, it was at the beginning of the project that we began to know each other's works. Since our work is set on work packages, every partner needs to know what the others are doing, because everyone will do its part but we also need to create an architecture where we can have an overview of the global efforts and advancements. So the project is making all the components talk to each other. At the moment, since the project just started, we need to put all these pieces together, and if you do not have a plan in doing so, cooperation will be very challenging.

How do you know your work is in line with the other partners?

The work of all institutions that take part in a project needs to be complementary, for instance one partner is in charge of studying teleoperation, another takes care of the the social acceptance of robots and so on. One of the big issues of European projects is the combination of all the tasks to come together. For SOPHIA, this part will come later and also it will be checked by the European Commission, although there are some decisions that have to be done now, in order to start working.

Do you think scientific practices take into consideration institutional diversities?

I think that the scientific method is embedded within the institutional identity. Also, when considering European projects, this has a lot to do with the experience of a certain institution with the European commission regulations. Once a project starts, the practices and the methods become more and more embedded in how we work together. Especially on a European level, and this is what I like about research done in Europe, there is a strong culture of collaboration. For instance, in the United States it is completely different. Their approach to research is based on competition. It is also true that we do have a

publication system, and a publication has to be centred on one discipline or research line, but also in this case I believe that, with time, we will reach a more multi disciplinary approach. For example, here in Belgium we have a reward for publications that also comprehend international institutions.

Professor Andrea Cherubini

University of Montpellier

SOPHIA Principal investigator

Professor Cherubini, what is your role in the consortium?

We are an academic partner, our main role is to lead a work package that studies perception. By observing the worker and using some sensors, we detect his 'status'. What we mean by 'status' is everything that concerns his posture, therefore we collect dynamic and mechanical parameters that might be useful to some other partner to understand if the worker is assuming non ergonomic postures. By doing so, we want to understand if the worker needs some help. In order to do so we use sensors, mostly cameras. Concerning this work package, this is our main role. We have other roles in the consortium, they are less important and mainly regard the work packages of integration and programming. We are part also of these work packages because, in addition to our speciality in perception, we are also specialised in the control of robots. What we do within these other work packages is the development and validation of softwares that will control robots that collaborate with humans, the so called 'co-bots'.

How were you selected to be part of the project?

We were part of another collaboration project with IIT, it lasted three years starting from 2016. The coordinator of SOPHIA, Doctor Ajoudani, knew our work and it was him who then decided to integrate our specialisation and background work with the other partners. I knew almost everyone, especially the academic partners I knew all of them.

So you already worked together and you knew each other research and work practices?

With IIT yes, with the others not directly. We just knew their work and what they did.

Do you see any differences in the outcome of a project depending on which institutions you are collaborating with and on their nature?

From my personal experience, there is an inevitable difference in vision between academic, industrial and public partners. Especially with regard to academic and industrial partners, they differ substantially in their ways of work methods, practices and goals. Typically in this kind of projects, we want to specialise in specifically high-level and innovative technologies, while industrial partners are usually looking for less ambitious solutions, at least from a technological point of view. On the other hand, what they want from the development of new technologies is that they are easily usable in the short term and 'robust', as we say in slang, which means that they should be strong and able to repeat the same action. Instead, for academic institutions, the innovative aspect has the priority due to the need for publications and the realisation of patents. Hence, the 'robustness' parameter is not the main worry. The cost of the materials could also differ from the industrial partners, which is for us a fundamental parameter. But in general, the broad conditions are satisfied because this kind of projects usually want to have a vision on what is happening and to have a highly specialised partner in the field of interest because this permits to focus on all the possible solutions, it helps to make a selection work. This way we are able to dismiss some solutions and therefore to reach a better final decision that wants to respond to a certain problem. My concern in these project is more linked to the number of participants in the consortium. It is true that, when talking about the outcome in these kinds of project, it is hard to reach a final product which is able to integrate everyone's work. The financial European disposals usually reward bigger projects, they have more chances to be approved and accepted. Personally, I think it would be best to have less partners and have a more integrated outcome with everyone's contribution in it. Maybe focusing on only one application case. In this kind of project and in robotics, one hand user is usually enough. In SOPHIA we have three of them, and one

technology transfer and one academic partner. A great aspect I find in SOPHIA is that we have policy makers, such as INAIL, which bring the aspect of regulations in. Nevertheless, I think three or four partners would be enough for a project to work well. Obviously, the advantage of having more is that we can have many integrations, maybe smaller ones, maybe by couples or groups of three. The three use cases present in SOPHIA are very similar to each other, and the project will be lasting for 4 years, therefore it will probably still have a more complete integration of every partner. In other cases there are way too many and too different from each other and this creates unbalanced relationships.

How and how often do you communicate with the other partners?

This past week very often. At the moment, we are in a first phase where we are getting to know each other and we are exchanging information. Until now, we arrange meetings by using Skype or similar devices, emails, and the intranet of the project.

Do you think unity is needed when it comes to research practices within a collaboration?

I think so, yes. I also believe that every institution should bring its own cultural background, there are deontological and methodological rules that have to be followed. But then there also are some grey areas of adaptation which we have to consider depending on the context in which we are working. For instance, on ethical matters.

Mr. Rok Podobnik

European Projects Manager at Hidria

SOPHIA Principal Investigator

Mr. Podobnik, what is your role in the project, both from a personal and institutional point of view?

I am part of the European projects office, so I am going to be giving all the administrative and financial support to the implementation of the actions. I serve as the main administrative and financial contact with the coordinator of the project and all the other partners more in general. On the other hand, the technical aspects are being taken care of by two other colleagues who work on automation, they take care of the technology, and on human resources. My role is to supervise them as their coordinator. I coordinate the internal work at Hidria and also I am responsible to report everything to the consortium.

For what concerns our role as Hidria, we are one of the providers of the industrial use case, one of the three industrial use cases in SOPHIA. Our main objective is to use SOPHIA as a pilot case in developing new work places that incorporate collaborative robotics. This business unit, which is also included in SOPHIA, is the first one that aims to implement this technology. We will also use this project as a benchmark for future implementations.

Do you see coherence in you goal with the other partners'?

I think that all the three industrial partners, us, Volkswagen and Hankamp Gears, we all have a very clear goal. What we aim is to develop a solution or at least to get something out of the project which will be of help in the next years. In this regard, I had a very clear impression from the first SOPHIA meeting that some of the partners are very much more oriented towards the three industrial providers than others. Therefore, they know they have

to collaborate with them very clearly and very closely. On the other hand, others are more academically oriented. This difference in the approach might also be caused by the fact that this is a research innovation action. But I believe that , if we do not change this aspect, it could actually be an issue in the development of the project. It heavily depends on how we outline it in the first half of the first year, but this should definitely be something to work on.

On this matter, how do you see policy makers interactions with you and their goals in the project?

To our experience, this is the first time that policy makers are included in a consortium. Actually, it is an interesting aspect. I see policy makers partners very similar to the academic ones, they need to be engaged in a right way in order for them to be able to work closely with us and to use the knowledge that they have gathered for future works. If we do this in a right way, this project will also help them to relate to the industry more easily. We are at the beginning of the project though, so we only have a first impression on what they do and how they work.

Are you in contact with some of the partners at the moment or will you be in the near future? Also, do you plan the contacts with the partners?

Yes, I think that what was very well done during the kick off meeting was to clarify very soon who the key partners of the collaboration are. With respect to Hidria, we already know now, at this early stage, with whom we are going to be working with more closely at least now in the first half of the project. This is a really good and helpful aspect and we are already in contact with some of our collaborators, they are actually planning their first visit to our site.

Do you have any ethical regulations for the project as Hidria?

No, we basically follow the EU guidelines on this matter.

Do you think collaborations works are more efficient than single institutions ones?

Why?

I definitely think so, such projects work thanks to networking and to gain outside new knowledge. But actually, any project can be seen and used in such a way, therefore gaining from networking is not enough. What truly matters is that every partner can get new knowledge out of it. For instance, when academic institutions come and carry out some tests at our sites, they gain some very new specific knowledge thanks to what we have to offer. That knowledge and information can be re used later in other initiatives.

Doctor Alberto Ranavolo

Researcher at Department of Occupational and Environmental Medicine Epidemiology and Hygiene at INAIL

SOPHIA Principal Investigator

Doctor Ranavolo, what is your role in the project? And what is the role of INAIL in the project?

For INAIL, I am a principal investigator, this is my role within the SOPHIA project. INAIL's role is to comprehend how collaborative robotic technologies impact on the reduction of biomechanics risk and therefore on the reduction of the biomechanics risk in workers. This aims to prevent muscolo scheletrico system diseases. This is also our main objective.

Do you see coherence between INAIL and the other institution objectives and practices?

From my point of view I see coherence. The coordinator managed to put all these institutions together and create these partnerships and consortium in order to give integrity to the whole project. There are several and diverse types of institutions, INAIL and our German counterpart which is BAUA. We deal with the issue we were mentioning before, therefore the comprehension and validation of these technologies when it comes to prevention of musculoskeletal system diseases. Indeed, we face this research issue from two different points of view; BAUA has a different approach because they are interested in understanding the acceptability. So they deal with how these technologies are accepted by workers. There is a difference between a more technical approach, therefore the comprehension on these technologies manage to interact with workers from a biomechanics point of view, and a more 'social' approach and so understanding how the workers accept these technologies, which is not easy. There are psychological and effects,

we as INAIL in small part also deal with the acceptability issue in thermic comfort, especially for exoskeletons. So yes, BAUA approaches with a different view the same issue we also face.

How do you collaborate with BAUA? On which aspects?

Our interests are common, and we have two different point of views. For instance, an example could be Istituto Italiano di Tecnologia which is of course very technology oriented, they will have to work on the technical aspect in order to understand how these technologies can intervene to reduce the risk. This is something we have in common and it is on this aspect that we can collaborate. Very often we have some work package meetings, therefore we are constantly talking and discussing in order to achieve the best possible result.

Regarding our relationship with BAUA, since the project is still young we are in a phase of defining the requirements of the project, and we will have to provide them some data. Later on, it will be BAUA who will have to create some questionnaires to submit to the workers and we too are intervening in some small aspects on the questionnaires. There is also a small common part on standardisation, because one of the objectives of the project is the standardisation.

What is your relationship with the other partners? How do you collaborate with the ones who have a different nature than yours?

What we have with them, rather than an overlap we have a complementation. INAIL is part of the 'research' sector in SOPHIA, we tightly collaborate with the other research institutions of the project. The project has a very complex objective which needs the work of all the research partners, every part will be then merge into the final result.

What about with the industrial partners?

Regarding the use cases, we have less direct contacts. BAUA is more in contact with them because they are defining the requirements, hence the industrial partners are providing all the information on their tasks.

Do you have any ethical norms to follow as INAIL?

Yes, we are now compiling the relative sheets that our ethic committee needs. The ethical aspect for us is extremely relevant.

Doctor Valeria Delle Cave

Communication and External Relations at IIT Istituto Italiano di Tecnologia

Communication of SOPHIA

Doctor Delle Cave, can you explain what do you do for SOPHIA as a communication professional?

My role in the project is one of promoting the results of the European project by communication practices addressed to the public and in the meantime supporting the several team leaders in the creation of a common global mindset with regard of the project.

Does your role sees you as the responsible for SOPHIA communication or as responsible for IIT communication?

Both of them, the difference in my work practices is basically that I do not follow all the projects as much as I follow projects that include a communication expert such as in SOPHIA. Therefore in general I can have a supervision on the other projects but I cannot follow them as the ones I am actively involved in. These projects have to be given to external agencies, previously indicated in the drafting of the project. My role there is supporting the PI in understanding whether these external agencies are able to cover the expected activities or they need my support. I still need to have a role in these other projects but as a supporting figure, still I have to write press releases and contact journals, newspapers and other partners' press offices.

With regard to SOPHIA, when the project was written IIT was chosen as coordinating institution and therefore the one who would have been in charge of all the communication activity. What I do for SOPHIA is what I also do for IIT.

Being IIT an institution and SOPHIA a project, how do you manage to treat equally these two entities on a communication perspective?

Inside IIT there are many scientific projects, you can think of it as a big box with many other small boxes inside. On one hand you need to have the big box to have its own identity and history, and this is the overall communication of IIT. On this matter I follow foreign press, so all the news that come from IIT I try and promote them on an international level. On the other hand, by promoting the communication of the other small boxes, I show that IIT is an institution able to attract competitive projects with excellent institutional relations both regarding the institutions financing the projects and the foreign research institutions. As you have seen, all scientific projects have a strong collaborative aspect, they always involve other institutions. And if you do not have good relations and you are not well seen by these institutions, it is very hard to create the consortium.

Did you take part in the creation of the consortium?

I did not take part in the creation of the partnerships, at least actively. Mine was a work previous to the effective creation of the consortium. Indeed, one of the partners told me that IIT has a very good reputation on European projects thanks to the existence of the role of a person responsible for all financial matters (project office) and for communication matters. This creates a good image of the institution, and creates trust da parte dei partners.

How do you communicate SOPHIA's multi institutionalism and therefore 'multiculturalism'?

You can do it in several ways. The easiest one is obviously including every institution in all press releases and also, when asking the different partners to promote the news in their countries, you give them the possibility to adapt the content of the release to their realities.

On one hand, this lets the partners feel like they are all part of a project and not just following the coordinator's lead. On the other hand, this is a smart move from the communicative point of view because the foreign journalists would want to tell their institution's side of the story in their long standing realities of the different partner countries. Moreover, other considerations that we need to think of are more technical and bureaucratic, so if there are big firms as partners it is very likely for them to have slower reaction times or even to not be able to support you need. It is very common that European projects are not that influential for big companies, they often invest very few resources in them and this aspect is something you as communicator need to take into consideration. When dealing with these companies, it is necessary to establish a certain kind of approach, maybe less demanding. The, the more technical aspect consists in understanding their role within the project, so everything that is confidential and considered as intellectual property. This is discussed in the grant agreement of the project. Although, while the project goes on we have to consider how the relations between partners evolve. Depending on that, we can understand if the consortium manages to merge with the totality or if some of the partners are less involved. You can understand that by observing how they are working and how they are responding to the work packages, and it is a duty of the coordinator. By moving forward you start realising everyone's needs. For instance, there are small universities that sometimes need more local visibility on a communicative level. They might ask to do useless communications in terms of the project itself but useful for them because they use the project to have visibility in their country. This is a plus for the project only because of the quantity of the press releases, however it is not an addition to the quality of the project.

How these differences between institutions affect your work?

I always try to involve all the press office of the institutions, this way I can give them some guidelines to which I ask to stick. The relative press offices then deal with the more operative part, what I can do for them is giving advice if they need it.

Does SOPHIA have its own identity like institutions do?

At the moment, SOPHIA is in the act of creating its own identity. When I see the building of new projects, I realise that the kick-off meeting is the moment when everyone meets for the first time. The bigger the project, the harder to see how they fit as a group. When the project starts and they start having the first results and difficulties, cohesion grows and they all feel part of a common identity. The identity of the project comes from the level of cohesion of the work environment.

This cohesion can be built and strengthened by a maintenance of the relationship. Although it is very hard to find press offices who are this connected along the whole project. It depends on the project, on the people, on the institution and on the role communication has within that institution. There are many variables to which communication has to adapt. It is very important to have a good coordinator and acknowledged by everyone, capable of taking decisions.

What do you think can affect the success of the project?

In my opinion, there has to be an atmosphere and culture of sharing transparently. Therefore it is necessary to have a good internal communication, also the communication of the scientific data.

An essential aspect of communication I usually notice comes during the reviewing and evaluation time of the project and its advancements. When researchers realise that their work has been communicated towards the external world in a positive way is valuable. It is like a mirror, it makes them actually aware of the importance of what they do.

Doctor Lars Fritzsche

Ergonomics Division Manager at IMK

SOPHIA Principal Investigator

Doctor Fritzsche, what is your personal role in SOPHIA and what is IMK's?

I am the Principal Investigator of IMK for SOPHIA, so I was also involved in the proposal and now in the project. My role is to coordinate all our activities in SOPHIA and our main activity is defining all the user requirements that are needed for the implementation for the industrial partners. Therefore, we have a consulting role there and also we analyse the current situation in terms of the production process and the the productivity gain and ergonomics gain that we will get from implementing SOPHIA's technologies. And this is the first work package; we are also involved in the work packages nine and ten where we actually implement and evaluate the use cases, but this will come at the end of the project. The second aspect is that also we are main responsible of the exploitation of the project's results. So as a person my role will be discussing with the other partners what our results are and how can we and others use them. Also how can we communicate them to business people but also to the scientific community and the general public which is mainly carried out by IIT. I am trying to do all the business networking.

We also have a third role in the project, because we also deal with the simulation of manual work processes and robots. So we are also trying to improve some aspects of our software which is comprehensive fo work package two.

How are your connection to the other partners? Are there some whom you are connected more or less than others?

There are not so many partners of the project that I knew before, so it is only IIT and one industrial partner which is Volkswagen din and BAUA. To these four I have closer contacts,

whereas the other partners especially the universities that are involved Pisa and others, well, I do not have that much contact at the moment and we just met in the kick off meeting and currently there is not so much activity to change the situation.

Do you see coherence with your goals and the other partners?

I see at least some coherence, because our goals all add up. We are trying to set up the use cases, help partners to implement the use cases by defining the requirements of the industrial partners. So I think that my main goal is to implement interesting industrial use cases in the project, and this is why I think many partners of the project should have the same goal. But if you look from the perspective of exploitation and also as our role of user requirements I think this is the main goal for us in the project. What we do in SOPHIA in terms of software development might be something that is not much connected to everyone else but we are in touch with some other partners and look for solutions and see if we can find something together that we can work on.

Do you have a communication office that is working also on SOPHIA?

We have a general communication and marketing office. It is not much as a press office but the people that are working in this field are aware that we are involved in SOPHIA and also they are involved when it is needed.

Does your communication office talk with the other partners' communication offices?

No, if there is some communication I think I am the one who is involved either directly or indirectly. Currently there is not so much need for it. I sent Valeria our communication contacts, but if there is something that regards communication I will do it by myself.

Do you have any ethical regulations for SOPHIA as IMK?

Not really, we are a small company and that is why we do not have the people who deal with such kind of questions. So we just follow the general rules and guidelines from the European Commission and that is what we are trying to look at. Also we are not so much involved with people and experiments, if we come into contact with these subjects is because of some crossword with other partners and it is their responsibility to deal with ethics. We as IMK do not have to worry much about this.

Do you think collaborations work more efficiently than the single institutions of smaller projects?

In terms of research activities and project in general, I prefer smaller projects with two or three maybe four partners. That is most effective where each partner can know from the others. This is better than just working alone but also if you involve too many people it gets less effective because you have too many opinions and a lot of organisational efforts so I think that the EU project like SOPHIA is a framework where you work closer with some of the partners and with others you help if needed but it is not such a close collaboration because you work on different topics. That is also why during the first steps you always look for two or three partners that are your main ones in the project and then you set some affective collaboration with them.

Why do you think the EU pushes for these big projects?

The more money, the more people involved and the more power you have. But it takes a lot of effort to coordinate them. SOPHIA in comparison to other projects is small, other ones have like 40 partners involved. I think you can really make a difference with large projects and reach significant results. There are good reasons to create large projects if they have to face large scale problems and challenges that might be relevant for all EU

member states and people. In this case we have a medium size project that i only for a few stakeholders who are really interested in specific topics. This is why I think the size is reasonable.

Bibliography

Brown Marvin T., *Corporate Integrity: rethinking organisational ethics and leadership*, Cambridge University Press, 2005.

Corley Elizabeth A. et al., *Design and management of multi-institutional research collaborations: theoretical implications from two case studies*, in «Research Policy», 35.7, (2006).

Deighton Ben and O'Donnell Peter, "Europe's Framework Programmes – a key element of research policy in Europe", *The EU Research & Innovation Magazine*, 16 December 2014.

Etzkowitz Henry, *The Capitalisation of Knowledge: A Triple Helix of University-Industry-Government*, Edward Elgar, 2010.

Fairbanks Jenille et al., *Transparency in government communication*, in «Journal of Public Affairs», 7.1, (2007).

Friedland Roger, *Bringing society back in: Symbols, practices, and institutional contradictions*, in W.W. Powell and P.J. Di Maggio, Eds. *The new institutionalism in organisational analysis*, University of Chicago Press, 1991.

Iltis Ana Smith, Ed. *Institutional integrity in health care*, Vol. 79, Springer Science & Business Media, 2003.

G. E. Kaebnick, "Anthony Fauci Shows Us the Right Way to Be an Expert", *Scientific American*, 26 March 2020.

Lammers, John C., *How institutions communicate: Institutional messages, institutional logics, and organisational communication*, in «*Management Communication Quarterly*», 25.1, (2011).

Lipari Lisbeth, *Listening for the other: Ethical implications of the Buber-Levinas encounter*, in «*Communication Theory*», 14.2, (2004).

Overall Jeffrey et al., *Institutional Ethical Framework, Ethical Leadership and their Communication to Stakeholders*, in «*Academy of Management Proceedings*», 2013.1, (2013).

Paine Lynn S., *Managing for Organisational Integrity*, in «*Harvard Business Review*», 72.2, (1994).

Parry Ken W. and Proctor-Thomson Sarah B., *Perceived integrity of transformational leaders in organisational settings*, in «*Journal of business ethics*», 35.2, (2002).

PIARC Technical Committee B.1, *Best Practice of Good Governance - Institutional Integrity*, World Road Association, 2010.

Ruijter H. J. M., *Proactive transparency in the United States and the Netherlands: The role of government communication officials*, in «*The American Review of Public Administration*», 47.3, (2017).

Schmidt Susanne K. et al., *Coordinating technology: Studies in the international standardisation of telecommunications*, MIT press, 1998.

Schott Thomas, *The world scientific community: Globality and globalisation*, Minerva, 1991.

Silver Harold, *Does a university have a culture?*, in «*Studies in Higher Education*», 28.2, (2003).

Suresh Subra, "Moving toward global science", *Science Magazine*, Vol. 333, 12 August 2011.

Swilder Anne, *Culture in action: Symbols and strategies*, in «*American Sociological Review*», 51.2, (1986).

Syed Shaheen et al., *Mapping the global network of fisheries science collaboration*, in «*Fish and Fisheries*», 20.5, (2019).

Thornton Patricia H. and Ocasio William, *Institutional logics*, in «*The Sage handbook of organisational institutionalism*», 840, (2008).

Van der Walt and Johannes L., *Formalising Institutional Identity: A Workable Idea?*, in *Values education and lifelong learning* (edited by D.N. Aspin and J.D. Chapman), Springer, 2007.

Website References

Horizon 2020 project SOPHIA, Grant agreement n. 871237

<https://project-sophia.eu/> (March 2020)

United Nations, Charter of the United Nations, 1945, Chapter XV, Article 101

<https://www.un.org/en/sections/un-charter/chapter-xv/index.html> (April 2020)

European Commission, “HORIZON 2020 in full swing Three years on KEY FACTS AND FIGURES 2014-2016”, December 2017

<https://ec.europa.eu/programmes/horizon2020/en/horizon-2020-statistics> (April 2020)

European Commission, “Communicating EU research and innovation guidance for project participants”, 25 September 2014

https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf (April 2020)

United Nations, Charter of the United Nations, 1945, Chapter XV, Article 101

<https://www.un.org/en/sections/un-charter/chapter-xv/index.html> (April 2020)

European Commission, “HORIZON 2020 in full swing Three years on KEY FACTS AND FIGURES 2014-2016”, December 2017

<https://ec.europa.eu/programmes/horizon2020/en/horizon-2020-statistics> (April 2020)

European Commission, “Communicating EU research and innovation guidance for project participants”, 25 September 2014

https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf (April 2020)

Acknowledgments

I wish to express my sincere appreciation to my supervisor, Professor Mariachiara Tallacchini for her guidance and persistent help. This work would not have been possible without her precious advice.

I am also grateful to Dr. Valeria delle Cave for accepting to supervise my advancements for the case study and for her invaluable assistance during my internship experience in IIT. My gratitude also goes to Dr. Arash Ajoudani who opened his newborn project SOPHIA to my study, adding to it immense value.

I would like to acknowledge the support of the seven SOPHIA stakeholders who agreed to be interviewed and to everyone in the consortium who took the time to complete the survey, thus giving to the study a vital contribution.

Many thanks to my Master colleagues for these two years together, I am sure our paths will cross again.

Finally, I wish to show my deepest gratitude to my family, who always had encouraging words of love, even in the darkest moments. I hope one day I will be able to compensate everything that you have done for me.