



MASTERARBEIT | MASTER'S THESIS

Titel | Title

Making Space for Collaboration Exploring Projectified Research Dynamics Across Disciplinary and Linguistic Boundaries

verfasst von | submitted by

Violeta Heinze BA

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of
Master of Arts (MA)

Wien | Vienna, 2025

Studienkennzahl lt. Studienblatt | Degree
programme code as it appears on the
student record sheet:

UA 066 906

Studienrichtung lt. Studienblatt | Degree
programme as it appears on the student
record sheet:

Masterstudium Science-Technology-Society

Betreut von | Supervisor:

Univ.-Prof. Mag. Dr. Maximilian Fochler

Acknowledgements

Encouraging me along the year-long journey of researching and writing this thesis was an amazing support network, which made the work all the more enriching and enjoyable.

First and foremost, I want to thank my supervisor, Maximilian Fochler, for his continuous support and feedback, and for reassuring me along this journey.

I also want to thank my friends, who always were there to support me by reviewing my work, discussing my questions and brainstorming ideas with me, and who joined me in finding the best writing spots and study foods. This also extends to my colleagues, who not only provided me with lots of emotional support and reassurance, but also always lent me an ear when I was stuck or needed someone to discuss my thoughts with.

Lastly, thanks should also go to my interviewees, who took the time out of their days to share their thoughts and experiences with me, which not only greatly contributed to the core part of my thesis, but also enriched me personally and professionally.

Abstract (English)

With the increasing projectification of research, international, inter- and transdisciplinary research has been on the rise. This new 'project world' comes with its own set of standards, values, and norms, and shapes what research collaboration can look like. As researchers are increasingly required to work across disciplinary and linguistic boundaries, processes of translation and alignment between collaborators are necessary to enable smooth and productive collaboration. One instance in which this becomes particularly apparent are research and innovation projects funded by the European Commission, which, through its framework programmes, aims to promote collaboration across nations and professions.

In my thesis, I study how researchers collaborate and communicate across disciplinary and linguistic boundaries in EU-funded research projects. Through an interview study, I explore what such collaboration can look like in practice and discuss how the conditions at hand shape researchers' epistemic living spaces. I further look into boundaries perceived between the backgrounds of partners involved in research projects, and how they can be crossed or entirely reconstructed through different communicative processes. I argue that the institutional framework in which the research projects are located is a crucial aspect in the creation of a collaboration culture. With my exploration of a range of dimensions that are part of the process of defining a common ground, I aim to show that, as a product of a time- and resource-intense process, the collaborative space created in an international, inter-/transdisciplinary project is a significant outcome of its own that greatly shapes the realm of possibilities for the achievement of other aims and impacts.

Abstract (Deutsch)

Mit der steigenden Projektifizierung der Wissenschaft geht ein Anstieg internationaler, inter- und transdisziplinärer Forschung einher. In dieser neuen ‚Projektwelt‘ gelten eigene Standards, Werte und Normen, welche Möglichkeiten für Zusammenarbeit in der Forschung prägen. Wenn Wissenschaftler*innen über disziplinäre und sprachliche Grenzen hinweg arbeiten, sind Übersetzungs- und Angleichungsprozesse nötig, um eine reibungslose und produktive Zusammenarbeit zu ermöglichen. Ein Fall, in welchem diese Prozesse besonders sichtbar werden, sind Forschungs- und Entwicklungsprojekte, die von der Europäischen Kommission gefördert werden, welche durch ihre Rahmenprogramme Zusammenarbeit über Nationen und Berufsgruppen hinweg fördert.

In dieser Arbeit untersuche ich, wie Wissenschaftler*innen in von der EU geförderten Projekten über disziplinäre und sprachliche Grenzen hinweg zusammenarbeiten. Mit einer Interviewstudie untersuche ich, wie eine solche Zusammenarbeit in der Praxis aussehen kann, und diskutiere, wie die Rahmenbedingungen der Projekte die *Epistemic Living Spaces* der Wissenschaftler*innen prägen. Ich untersuche außerdem Abgrenzungen, die zwischen den Hintergründen von Wissenschaftler*innen in Forschungsprojekten wahrgenommen werden, und wie diese durch verschiedene kommunikative Prozesse überbrückt oder neu aufgestellt werden können. Ich argumentiere, dass der institutionelle Rahmen, in welchem die Forschungsprojekte stattfinden, ein wesentlicher Faktor in der Entstehung eines Raumes für Zusammenarbeit ist. Durch meine Untersuchung verschiedener Dimensionen, die Teil des Prozesses zu einer gemeinsamen Basis für Zusammenarbeit sind, möchte ich darstellen, dass die Räume für Zusammenarbeit in internationalen, inter-/transdisziplinären Projekten als ein Produkt eines zeit- und ressourcenintensiven Prozesses ein wesentliches Resultat für sich sind, welches einen signifikanten Einfluss auf Möglichkeiten für die Erreichung anderer Ziele und Wirkungen hat.

Table of Contents

1.	Introduction.....	1
2.	State of the art.....	4
2.1	Language & culture in academia.....	4
2.1.1	An introduction to 'language'	4
2.1.2	Language in academia	6
2.2	Inter- and transdisciplinary research & collaboration.....	9
2.2.1	Collaborating inter- and transdisciplinarily.....	10
2.2.2	Communicating across disciplinary and professional boundaries.....	12
2.2.3	The social dimension of collaboration.....	14
2.3	EU-funded projects & the projectification of research	14
2.3.1	The EU's framework programme	15
2.3.2	Projectification of research.....	15
2.4	Summary	18
3.	Research questions.....	19
4.	Theories and sensitising concepts.....	21
4.1	Boundary work & boundary objects	21
4.2	Standards & power structures	23
4.3	Epistemic cultures & epistemic living spaces.....	25
4.4	Summary	26
5.	Research methods.....	28
5.1	Research subjects.....	29
5.2	Data collection	32
5.3	Data analysis	36
5.4	Ethical considerations	38
6.	Empirical analysis	40
6.1	Defining the form of collaboration.....	40
6.1.1	Characterisation of inter- and transdisciplinarity	41

6.1.2	Characterisation of multilingualism	42
6.1.3	Summary	43
6.2	Collaboration in practice	43
6.2.1	Language dimension	43
6.2.2	Team dynamics	45
6.2.3	Summary	47
6.3	Implications of the form of collaboration	47
6.3.1	Implications of a lingua franca	47
6.3.2	Implications of working in diverse teams	50
6.3.3	Summary	50
6.4	Creating spaces and bridging boundaries	51
6.4.1	Drawing boundaries	51
6.4.2	Enabling cross-boundary communication	53
6.4.3	Translating across boundaries	54
6.4.4	Summary	56
6.5	Defining a common ground	56
6.5.1	Creating a common vocabulary	56
6.5.2	Defining the project's aims	60
6.5.3	Summary	64
6.6	Other factors at play	64
6.6.1	Institutional dimensions	64
6.6.2	Cultural and social dimensions	69
6.6.3	Summary	71
6.7	Summary – the path towards mutual understanding	72
7.	Discussion	74
7.1	The 'making of' spaces for collaboration	74
7.1.1	Epistemic – Processes of knowledge production	74
7.1.2	Spatial/material – Arrangement of spaces for collaboration	76

7.1.3	Temporal – Rhythms and time in projectified collaborative settings	76
7.1.4	Symbolic – Power structures & ordering spaces for collaboration.....	77
7.1.5	Social – Bonding as a team	79
7.1.6	Summary.....	80
7.2	Finding a common ground across boundaries.....	80
7.2.1	Disciplinary and linguistic boundary work.....	80
7.2.2	Bridging boundaries.....	82
7.2.3	Forming common spaces for collaboration	83
7.2.4	Summary.....	84
7.3	Fostering successful collaboration	85
7.4	Communication and collaboration in EU-funded projects.....	87
8.	Conclusions.....	89
8.1	Societal relevance	89
8.2	Limitations and further research	90
	References	92
	Annex.....	97
	Interview Guide (English)	97
	Interview Guide (German).....	100
	AI Usage Table	103

List of Acronyms & Abbreviations

Term	Description
AI	Artificial Intelligence
DoA	Description of Action
EC	European Commission
EU	European Union
L1/2/3/4	First/Second/Third/Fourth Language
OT	Own Translation
RRI	Responsible Research and Innovation
SSH	Social Sciences and Humanities
STEM	Science, Technology, Engineering and Mathematics
STS	Science and Technology Studies

List of Tables

Table 1. Interviewees	31
Table 2. Theme descriptions and example codes.....	37
Table 3. Factors and conditions facilitating collaboration	85

1. Introduction

Over the past decades, a new world has been emerging in research, a world which comes with its own standards, values, and norms, and which is re-shaping the way research is carried out – a “project world” (Büttner, 2019, p. 169). Fostering this increasing projectification of research are a range of funding programmes on national and international level, providing set budgets for the achievement of pre-defined objectives and impacts. With a budget of €95.5 billion, Horizon Europe, the current framework programme of the European Union (2021-2027), aims to tackle global challenges by funding international research and innovation projects. Next to meeting pre-defined aims and achieving certain impacts, funding through Horizon Europe is tied to a set of conditions shaping the work carried out, including a focus on international collaboration, as well as inter- and transdisciplinary research and development (European Commission, n.d.).

With research becoming ever more global and collaborative across countries and disciplines, various standards are being implemented in order to achieve successful translation and collaboration between people of different backgrounds. To enable knowledge production and dissemination in a global and thus multilingual environment, one of the areas that has to be standardised is that of language – English has become the main working language of not only large-scale research projects, but also a lot of smaller local working groups. The dependence on English in global academia is growing (Luczaj et al., 2022). English, for these reasons, has become the *lingua franca of science* (Sano, 2002).

However, the way we speak not only depends on our linguistic backgrounds, such as the language we grew up with or the country we live in, but is also shaped by our disciplinary environment or the epistemic cultures (Knorr Cetina, 2007) we work in. In collaborative spaces such as international research projects, different language varieties and disciplinary terminologies come together and are combined in a way that aims to facilitate common understanding for all participants. Authors such as Galison (1999) looked at such spaces located at the boundaries between groups, such as researchers from different disciplines. Building upon Galison’s (1999) concept of *trading zones*, I ask what processes of alignment of concepts and communication in such spaces can look like. As Bush (2013) and Wolters (2015) shed a light on how processes of standardisation of communication often naturally favour one group, while bearing a higher burden to another one, I also aim to remain attentive to the impacts of alignment of language within these spaces and look into power structures at play to ask to what extent such dynamics exist in international, inter- and transdisciplinary spaces of collaboration.

Within EU-funded projects, the integration of social sciences and humanities (SSH) in science and technology projects has been increasingly promoted over the last decade. Researchers such as Felt (2014) and Burch et al. (2023) have discussed what this integration can look like in practice, and pointed to the fact that, while the general importance of SSH partners in these projects is clearly stated from the side of the funding agencies, their role often remains largely undefined, which can lead to social

science partners being treated as an 'add-on' to the core research conducted by partners from STEM (science, technology, engineering, and mathematics).

With my research, I thus not only want to look into the process of creating this mutually understandable common ground, but also study how particularly social science researchers working in STEM-dominated environments experience it. While previous studies have already explored communication and collaboration dynamics related to either language varieties or disciplinary terminologies, I see those two aspects as strongly intertwined in large-scale research projects. I thus want to look at their interplay and beyond to study what communication and collaboration can look like in such spaces.

Against this background, in this thesis I will explore how researchers collaborate and communicate across these linguistic and disciplinary boundaries in the context of EU-funded projects. Within my study, I aim to shed light on the interplay of different dimensions – language and disciplines – that were previously discussed mostly in separation. Rather than looking at them individually, I will explore the different dimensions in conjunction and discuss how the frame of projectification shapes the spaces in which collaborative knowledge production can take place.

Specifically, I interviewed social science researchers working on such international, inter- and transdisciplinary research projects to study what the collaborative spaces in these projects look like, and how the different (institutional) conditions shape communication within them. I thereby aimed to get insights into language(s) spoken, processes of inter- and transdisciplinary knowledge production, power structures, and hierarchies. I furthermore looked at how the different disciplinary and linguistic backgrounds of partners in these projects are brought together and bridged to find a common ground. Here, I wanted to learn more about whether and how boundaries are perceived between project partners, both in a disciplinary and a linguistic sense, which strategies are used to bridge, translate between, or deconstruct them, and what the process of finding a common ground, i.e., defining key concepts and overall aims, looks like. Lastly, I looked at conditions that enable successful cross-boundary collaboration in these settings by compiling strategies and factors to be considered both on an individual and on a project level in order to foster productive spaces for collaboration.

I analysed my data with a thematic coding approach (Braun & Clarke, 2006). To frame and contextualise my results, I utilised the theoretical lenses of boundary work (Gieryn, 1999), boundary objects (Star & Griesemer, 1989), and trading zones (Galison, 1999), alongside studies of standards and power structures (Bowker & Star, 2000; Bush, 2013) and the concepts of epistemic cultures (Knorr Cetina, 2007) and epistemic living spaces (Felt & Fochler, 2012).

In the following chapter, I will provide an outline of the state of the art on my topic, including research on language and culture in academia, inter- and transdisciplinary research collaboration, and EU-funded projects and projectification. In Chapter 3, I will present my research questions, before outlining the theories and sensitising concepts I used for my thesis in Chapter 4. In Chapter 5, I will describe my

research methods, including research subjects, methods for data collection and data analysis, and ethical considerations. Chapter 6 will present the results of my empirical research, which will then be discussed and contextualised in Chapter 7. In Chapter 8, I conclude this thesis with a summary of my key results and their societal relevance, as well as opportunities for further research.

2. State of the art

To situate and contextualise my research, in this chapter I will outline key definitions and previous studies within my field. To this end, I will initially look at language and culture, first exploring and defining the term ‘language’ for the purpose of my research, before then looking at the role of language in academia. Here, I will refer to previous studies on English as the lingua franca of science, the role of multilingualism in cross-cultural research collaboration, and the translation of concepts. The second part of this chapter will focus on inter- and transdisciplinary research collaboration, outlining the state of the art and exploring previous studies on communication across disciplinary and professional boundaries. The third section will provide insights from literature related to the specific case that I am looking at, that of international, inter-/transdisciplinary EU-funded projects, by outlining the structure of such projects and studies on how projectification of research shapes the work that can be carried out.

2.1 Language & culture in academia

To lay the ground for my thesis, this first sub-section will explore the notion of language. I will first dive into the term ‘language’ itself to highlight its denotations and how I will use it throughout my thesis, as well as provide some necessary context from the field of linguistics. I will then go deeper into the role of language, particularly English as the lingua franca, in academia, outlining previous studies done on the topic.

2.1.1 An introduction to ‘language’

People belonging to one culture share the same cultural codes – meaning that they have a shared set of concepts, images and ideas. When wanting to communicate meaning, a shared linguistic code is necessary. The language used, in the broadest possible sense of the word, must be the same, thus, the people who are part of the communicative process need to be able to decode the communicated concepts. This includes, but is not limited to, speaking the same language variety to a degree where concepts can be translated in a form that ensures that all members of the communicative process can receive them equally (Hall, 2013).

While Hall (2013) describes this process in the context of large societal groups, I argue that it can be equally applied to significantly smaller groups, such as working groups consisting of a handful of people, where ‘language’ in the broad sense of the word is created for specific purposes, practices or professions, such as for particular institutions – in my case academia or EU-funded projects – or for individual disciplines, e.g., by assigning meaning to particular technical terms. Thus, wanting to understand the inner processes of their collaboration, I aim to look at these ‘cultural codes’ that are necessary for a group to work as one – starting with, but not limiting myself to, the role of language.

Before exploring the role of language in academic settings, it is important to highlight the problematics that come with using the term 'language', which have been greatly debated not just in linguistics, but have also been brought up in an STS context. Law & Mol (2020) discuss some of the implications that arise from the use of the term, including the assumptions that words and ways of speaking can be clearly put into distinct categories and that the way people talk can be disentangled from the practices and contexts in which they do so. Furthermore, it is important to note that the term 'language' reproduces artificial boundaries and overlooks fluidities and overlaps. Lastly, problematics also come with the divide between dominant national languages of a country and regional languages and dialects, that are often not officially recognised (Law & Mol, 2020). Thus, while using the term 'language' is to some extent necessary and useful, I hereby want to recognise its limitations by being more specific on what I mean by its use in particular contexts.

Nonetheless, I want to briefly outline a linguist's view of the term 'language' to include a basic understanding of the concept that I will work with for my thesis. Crystal (2006) highlights the many ways in which the term 'language' is used – not just to describe the way in which we communicate literally, but also figuratively. While the auditory-vocal mode is the most fundamental one to language, as speech is its primary manifestation, writing and sign also play an important role in the manifestation of the notion of 'language' and how we conceptualise it. All those aspects are thus part of what I will look at in my research.

As the concept of 'multilingualism' is also one that is central to my study, I will briefly outline it as well. As Crystal (2006) highlights, "multilingualism is the normal human condition" (p. 409), referring to the fact that around three quarters of all humans globally speak several languages in their daily life, with up to 90% of people regularly using more than one language. This also contributes to the fact that all multilingual situations are inherently fluent, and it is rare to find a setting in which languages are fully balanced and stable. This will become also apparent in later sections when looking at multilingualism in research and exploring what multilingual research collaboration can look like (section 2.1.2.2).

To summarise this linguistic excursion and its meaning for my thesis, I have created the following working definitions and uses for the previously outlined terms: I will use 'language', 'language variety' and 'linguistic background' interchangeably when referring to language systems such as English, German, etc. I will further use the word 'language' when referring to the concept as a whole, taking all kinds of factors such as institutional languages, disciplinary languages, linguistic backgrounds, and more, into consideration, to highlight its complexity and intertwinedness. Whenever the latter is the case, I will specify that I mean 'language' in the broader sense of the word. Lastly, the term 'multilingualism' will be used in my thesis to refer to situations, contexts or environments in which multiple languages are present and used, be that actively or passively.

2.1.2 Language in academia

The role of language(s) in research has already been looked at from a variety of perspectives, mainly focusing on how language affects the final outcomes of research as well as their dissemination, but also looking at its role in collaborative settings. In this section, I will look at English as academia's lingua franca, as well as multilingualism and translation in research.

2.1.2.1 *English, the lingua franca of academia*

With English as the generally recognised and (seemingly) accepted lingua franca of science, institutional academic contexts are characterised by a “centripetal pull” (Curry & Lillis, 2024, p. 87) towards ‘linguistic mononormativity’ or ‘anglonormativity’.

Studies on the role of English as a lingua franca of academia often use structured or semi-structured interviews (Eisemon & Rabik, 1978; Fradkin, 2017; Hwang, 2013; Luczaj et al., 2021) in order to explore how language can be linked to academic output. This includes research on aspects such as implications of internationalisation, effects of language (barriers) on the dissemination of research and communication within academia, and different norms and ideologies when it comes to using English as a lingua franca in science (Fradkin, 2017; Luczaj et al., 2021). Language in academia has further been linked to status, value, prestige, and recognition of researchers, as well as to productivity (Eisemon & Rabik, 1978). This point is also illustrated by Mol (2020), who, in the introduction to her paper, states how researchers are supposed to publish in ‘international’ – i.e., English-language – journals, thus meaning that researchers with a first language (L1) other than English constantly live in translation.

However, writing in English brings benefits with it. It allows the research to travel, to reach wider audiences and stimulate academic discourse beyond the people that share an L1 with them, something that is not as easily possible when publishing in other languages – or, as Law & Mol (2020) put it, you have to “publish in English or perish” (p. 266). In the context of academic publishing, English has come to stand for ‘international’, thus reproducing global asymmetries by distributing advantages unequally. Being able to publish directly in English has become an asset. This development becomes ever more clear when looking at publication numbers – in 2005 already, three out of four social science papers published globally were written in English (Law & Mol, 2020). This, however, also means that the English-language texts are less accessible to local practitioners and thus often not able to reach those who would benefit most from the knowledge.

Amano et al. (2016) also stress these limitations arising from the internationalisation of research and rise in English-language publication of scientific results. A lack of availability of results in local languages leads to imbalances in transfers of knowledge between practitioners and researchers, even if the latter work within the same country, as oftentimes, academic knowledge is only made available in English. This also brings with it consequences of ignoring non-English science, which include biases and gaps in

the understanding of global problems, an overrepresentation of statistically significant and positive results, which are more likely to be published in high-impact English journals, and an underrepresentation of knowledge created by field practitioners. The authors thus call for a multilingualisation of knowledge to aid the redistribution of knowledge to its end-users. As Sivertsen (2018) argues, “to fulfil its responsibilities, science needs to be multilingual” (p. 89).

Sivertsen (2018) specifically calls for the need of ‘balanced multilingualism’ in the social sciences and humanities (SSH) – a field that, according to the author, is often considered an ‘issue’ when it comes to evaluating and publishing research, as it is characterised by publications in a wide range of languages and publication types. The author argues that SSH should not be viewed as a problem, but rather a good practice example to depart from when it comes to communicating between science and society. Highlighting SSH’s collaborative aspects with local culture and society, Sivertsen (2018) actively calls for a move away from just focusing on publishing in English as the lingua franca, but increasing accessibility for a wide societal readership by encouraging scholars to publish multilingually, i.e., also partly in their native language.

2.1.2.2 Multilingualism in research collaboration

When exploring the language(s) present in research, looking at all phases of the research process is crucial – from drafting a research project, to conducting studies, collaborating with partners and disseminating your findings, language plays a role every step of the way. While the previous studies mainly focused on the language used in (written) research dissemination and publication, Curry & Lillis (2024) aimed to unravel the ‘multilingual realities’ of doing research across its different phases. With ‘multilingual realities’, they describe “both practices that involve the use of languages as relatively discrete semiotic resources (e.g., talking and/or writing ‘in Spanish’ as compared with talking and/or writing ‘in German’) as well as translanguing practices [...] involving the mixing of linguistic/semiotic elements in acts of spoken or written communication” (Curry & Lillis, 2024, p. 88), which is what my thesis will look into as well. The authors highlight that even research settings that may have been considered monolingual are, in practice, highly characterised by multilingualism. With their study, they challenge the general assumption that English is the standard language used in international research collaborations by showing the importance of local and regional languages in lots of research activities, such as conducting research – e.g., translating questionnaires shared across different partners into local languages – as well as communicating with collaborators or external partners, both orally and in writing. In international research collaborations, multiple languages can function as so-called ‘link-languages’, i.e., languages used to communicate among partners that may not correspond to the local language of where the research is taking place, or the language in which the research output is ultimately produced. Curry & Lillis (2024) thus highlight that “the linguistic repertoires of some

members of transnational research collaborations inform which languages become the official working languages of the collaboration – and not always English” (p. 91). Which language(s) is/are used in a specific context is often not a conscious decision, but rather an organic process impacted by researchers’ repertoires, collaborators’ linguistic and cultural identities, locally used languages, and those that are institutionally rewarded. Functionality is thus only one of many aspects – when choosing languages to use in different parts of the research process, researchers are informed by their own identities. Thus, the authors stress that the relationship between language(s) in research and the knowledge produced is a multidirectional and complex one (Curry & Lillis, 2024).

Holmes & Rajab (2022) further explore what multilingual research can look like. Looking into researchers’ experiences of working in multilingual teams, they found intercultural communication to be a socially constructed process, requiring specific effort and ability to navigate. Furthermore, when working in multilingual teams, researchers are more reflective on their own role as well as their understanding of different modes of doing research. When researching multilingually, researchers are encouraged to “recognise the creative, unexpected and embodied aspects of intercultural encounters that emerge when one language is no longer the focus of the researcher’s gaze” (Holmes & Rajab, 2022, p. 246). In practice, however, they found English as the lingua franca as rarely contested and generally respected and accepted – even if, sometimes, with less confidence. This therefore points them to the need for working on linguistically democratic ways of doing research. While researching multilingually works better during the implementation phase of research, in writing up and publishing results, English greatly prevailed. Holmes & Rajab (2022) thus stress the importance of discussions within project teams about how to handle multilingualism during all stages of the research process. Ultimately, “researching multilingually provides more chances for fair, democratic research processes as the languages involved are validated, made visible, and considered equally important in different stages of the research” (Homes & Rajab, 2022, p. 247).

In their study of language barriers in international science-business collaboration, Hwang (2013) contributes to this research by also looking at the role of language during the process of collaboration, in this case between scientists and engineers. Research suggests that not only non-English speakers are impacted by the use of a lingua franca in such collaboration, but native speakers of English, though not as much, are too. This is the case as the language barriers that emerge when speakers with different skill levels work together affect communication and collaboration on both sides, leading to, for example, operational difficulties, reduced efficiency of informal communication, or a reduction of communication altogether. The author further explores impacts of this language barrier on attitudes towards collaboration and found an influence of language on hierarchies in involved businesses. Adding to the actor-centred perspective of studying English as the academic lingua franca, Wolters (2015) points out that “[...] the price for English as lingua franca is paid, almost exclusively by [non-native

English speakers]” (p. 190). The author speaks up against the assumption that a lingua franca ultimately benefits everyone equally and is equally accessible to all, and calls attention to language-based asymmetries in publication practices, resource use, and positions in university rankings.

With increasing demographic diversity in research teams over the past decades – including, amongst others, a larger variety of linguistic and cultural backgrounds within teams – researchers started looking at the impacts this cultural diversity could have on academic work and knowledge production. Gibbs Jr. et al. (2019) found, among others, that increased cultural and racial diversity can broaden the range of perspectives, approaches and information processed, can lead to more thought-out decision-making processes, and lead to less assumptions about common knowledge among team members, consequently promoting knowledge sharing.

2.1.2.3 Communicating and translating concepts

The translation and sharing of concepts not only between, but also within languages, has been looked at by Lin (2020) and Mol (2014, 2020). Lin (2020) stresses that a lot gets lost in translation from local practices to English, which, as he argues, is not just an issue of language per se, but also the knowing apparatus at large: when wanting to be published in an English-language scientific journal, you have to adhere to certain standardised practices of doing and presenting research. With its multitude of journals and readers, the English-language knowing apparatus thus globally dominates the scientific world. Mol (2014) zooms further in on a word-level, arguing that when words are moving between different spatio-temporal contexts, they are never stable, but rather fluidly changing as they move. Mol (2020) describes this as different realities resonating with them – not just in translations, but also between authors and readers working and living in different sites and situations. The author thus argues that there is no such thing as stable concepts. As words are deeply connected to their semiotic and practical environment, it is impossible for them to be completely stable when moving between them – thus crashing the ‘dream of the concept’ as a stable entity. This is especially true between languages, but also within any given language itself. Mol (2020) lastly argues that consequences arise from the belief in an immutable concept: some words gain prominence while others are more and more ignored, and dominant meanings are strengthened while other ones might get lost. This does not just affect the language in itself, but also the work done within it, and ignores the enrichment that could be achieved through the use of other languages.

2.2 Inter- and transdisciplinary research & collaboration

While research is becoming ever more international and multilingual, it is also more and more conducted in inter- and transdisciplinary environments – in international research projects, multilingualism and inter- and transdisciplinary thus often go hand in hand, as do different language

varieties and disciplinary terminologies. Nowotny et al. (2003) outline this increasingly inter- and transdisciplinary approach of research as one of the features of the Mode 2 of research. They argue that the current mode of doing research is rather oriented on application, focuses on social distribution, is characterised by multiple accountabilities, and, most important for my research, is increasingly becoming inter- and transdisciplinary. As current, multidimensional challenges give rise to the need for increasingly collaborative research, so does the need for new modes of inter- and transdisciplinary knowledge production (Vienni-Baptista, 2024).

While inter- and transdisciplinarity have become buzzwords used in the funding and presentation of research, definitions and understanding of the concepts are greatly heterogeneous (Vienni-Baptista et al., 2022). It is thus, as Vienni-Baptista (2023) argues, of high importance to create a common understanding of those concepts not only among researchers at the beginning of a project, but also across sectors like policy making and research funding. In particular, the last point deserves attention as currently, according to Vienni-Baptista (2024), trans- and interdisciplinarity is, on the one hand, greatly promoted by funding schemes, while institutional funding remains inflexible, making its implementation a challenge. Apart from a lack of institutional support, researchers working inter- and transdisciplinarily face further challenges such as a lack of legitimisation in academia, widely dispersed communities, and contested understandings of their research. Due to this heterogeneity of understanding of inter- and transdisciplinary, I will not create one definition to work with, but rather explore my interviewees' understanding of these concepts at the beginning of my analysis.

2.2.1 Collaborating inter- and transdisciplinarily

Studies looking at the collaborative aspects and dynamics of interdisciplinary research have focused on aspects such as how misunderstandings arise in collaborative interdisciplinary work, and the role language plays in these (Monteiro & Keating, 2009), as well as practices and outcomes of interdisciplinary research and how affective tensions play into knowledge production (Hillersdal et al., 2020). Ultimately, they also point at the fact that scientific practice is changing due to increasing interdisciplinarity, which in turn also affects collaboration dynamics.

Especially in transdisciplinary projects, where knowledge is created in interplay between science and practice, knowledge integration is an essential part of ensuring a smooth implementation. Karrasch et al. (2020) looked at this process of knowledge integration, which in their understanding includes active exchange between parties in order to form a common ground for finding a solution for the problem at hand. In order to prevent conflict and ensure effective collaboration, the formation of a joint common ground is of great importance in transdisciplinary projects. The authors further highlight the use of language as a persisting barrier to effective system knowledge integration – a basic understanding of the problem at hand and its components – which especially includes the use of scientific language over

more accessible ways of communication. Ways to overcome these barriers include, among others, jointly created glossaries or illustrations, pictures, and handouts, as well as translations of content into ‘everyday language’.

Apart from knowledge integration, transdisciplinary research poses a variety of additional challenges. These can include differences in problem framing and understanding, lack of agreement between groups about the project and its results, and the involvement of practitioners. The latter not only poses challenges related to different professional backgrounds, but is also closely intertwined with intercultural differences, as transdisciplinary research often also happens in international contexts. This dimension brings about further matters of potential conflict that need to be mitigated through consistent management and communication, such as differences in working cultures and hierarchies, differences in the perception of the collaboration (e.g., working on vs. working with), and power asymmetries between practitioners and researchers (Karrasch et al., 2020).

2.2.1.1 Social science integration in inter- and transdisciplinary science & technology projects

With the rising calls for inter- and transdisciplinarity in research, the integration of social sciences in STEM-centred research projects is increasingly asked for within funding frameworks. Burch et al. (2023) address the challenges that stem from this integration of social sciences in science & technology projects, as well as what needs to be done to allow for a successful social science involvement. Their main critique centres around the fact that social science is typically treated as tangential to the main aims of the project, if not completely disregarded. The authors highlight that while social science integration in technologically oriented projects can be challenging due to disciplinary differences, the contributions social sciences can provide go far beyond what is usually considered and are highly relevant and important. The main barriers they identify include, next to the treating of social sciences like an add-on to the core project, the expectation to adopt a positivist framework, different definitions of project success, a lack of autonomy for social sciences to define their own research within the project, the expectation of social sciences to represent society, as well as that of social sciences having to educate the public. From those identified barriers, Burch et al. (2023) created a set of suggestions for successful social science integration in science & technology projects. Those include regular critical discussions as part of the project’s progress, respectful approaches to the bridging of disciplinary differences, basing technology projects on social science studies, allowing social scientists to develop their own research questions within projects, planning projects to integrate public values and needs in the development process, and planning for a critical engagement with relevant societal groups.

2.2.2 Communicating across disciplinary and professional boundaries

In inter- and transdisciplinary projects, the layer of cultural differences between disciplines adds to the existing cultural spectrum of an international group of partners. When communicating knowledge between different disciplinary languages, these cultural differences that underlie disciplinary divisions need to be considered. In his article, van Helden (2022) argues that the majority of difficulties in interdisciplinary research are practical rather than epistemological, and can be traced back to communication problems. This argument is illustrated by drawing out differences between natural sciences and SSH disciplines, a division in which they become particularly apparent. As also outlined in the previous section, this can, among others, include differences in methodology, in values and languages used, and in the use of particular terms. Sometimes, disciplines use generally available terms in ways specific to their discipline. The unawareness of such different uses can lead to mutual misunderstandings, which may in turn lead to misaligned expectations for the project at large. Furthermore, speech patterns can differ between disciplines, meaning that arguments may be constructed differently according to distinct truth criteria, or even certain types of humour may be specific to individual disciplines, although seeming natural to those involved. Disciplinary socialisation can further shape one's way of thinking and approaching questions and answers, problem solving, and attitudes to quantification. Van Helden (2022) stresses how in successful interdisciplinary collaborations, partners go beyond simply supplying their part to the greater picture: "In the most successful collaborations, all participants are willing to go beyond their own boundaries to approach their collaborators as fellow humans" (p. 84). This includes being willing to sacrifice certain aspects of the own disciplinary way of working to contribute to a better overall result.

With all of this ultimately boiling down to matters of communication, van Helden (2022) stresses its importance in interdisciplinary collaboration. Especially considering the coinciding of discipline-related cultural differences with the cultural differences occurring due to projects' internationality, more culturally sensitive communication is crucial. Partners relying too much on their disciplinary jargon and not taking sufficient time to explain at least the basics of the process at hand to the consortium, as well as different expectations for a project, can be cause for communication-related problems. Furthermore, cultural differences, e.g., in values or communication styles, may be misinterpreted as personal violations of respect or trust. In building trust, understanding is a crucial part of the process. Trust, in turn, is a necessary component of implementing a successful interdisciplinary project. Thus, having translators able to facilitate communication between different disciplinary cultures can significantly benefit a project.

With the added complexities outlined in previous sections, the role of translators becomes particularly important in transdisciplinary projects. Translators are people who can act as bridges between different cultures, languages, knowledge types, and professions, and ensure a smooth and commonly

understood working process. Due to these added responsibilities, studies have shown that transdisciplinary communication is often viewed as an additional demand from researchers, which they are not always keen on taking on, as interest in enabling smooth communication has been found to be lacking. What is thus necessary with this rapidly emerging mode of research is a change in perspective in order for research to be able to adjust fully to this new mode of knowledge production (Wang et al., 2019).

One further aspect of transdisciplinary research collaboration which McGreavy et al. (2022) look into is that of how definitions are built within those contexts. With their research, the authors aim to shed light on how ideas are prioritised, shared or contested within a collaborative context, and study patterns and touchstones shaping collaboration. Communicative processes and, with those, the construction of definitions, are closely intertwined with the imagined audience and their expertise. Thus, the concept of co-production (Jasanoff, 2004) is used by the authors to highlight practices through which multiple knowledges come together in shaping social orders. Functions and characteristics of definitions can include the reaffirming of assumptions about the problem at hand, highlighting which expertise is valued to what degree, and thus strengthen existing power dynamics. Furthermore, definitions include an implicit understanding of a given audience, and specify those points of a project that, firstly, need to be simplified to be understood by all without getting into details, secondly, are and not open for negotiation.

Within the field of cultural studies of science, scholars have looked at the exchange of cultural elements in multidisciplinary research through an anthropological lens. Baus (2010) studied how boundaries between disciplines are (re-)negotiated, how cultural elements of different disciplinary communities are transferred across them, and the ways in which communication takes place in contact zones, e.g., research projects in which scientists collaborate across disciplines. In this context, Galison (1999) defined the concept of trading zones, local zones for collaboration that are created when groups with different background understandings come together. He understands those as localised zones binding different subcultures together by coordinating action and belief. Galison (1999) further links this concept to the linguistic phenomena of creolisation and pidginisation of languages, as in trading zones, a 'language' or form of communication suitable for the specific purpose is being formed. For my research, this concept is especially relevant as it is not restricted to neither language varieties or disciplinary terminologies, but is open enough to consider how these different factors come together to create mutual understanding through communication. By looking at spaces of collaboration as trading zones, one can investigate language that is created at the intersection of different social worlds (Griesemer, 2016). Applied to my project, this view allows me to consider all the intertwined dimensions that are part of my research interest.

2.2.3 The social dimension of collaboration

When looking at inter- or transdisciplinary research settings, the social dimension of collaboration and communication is one that cannot be overlooked. Marzano et al. (2006) argue that, when people with diverse backgrounds come together in interdisciplinary settings, barriers to interpersonal communication are inherently created and must be recognised in order to successfully implement a project. To work efficiently in an interdisciplinary team, creating interpersonal relationships built on trust, good leadership, receptiveness and a willingness to learn is crucial. In this sense, researchers need to be able and willing to reflect more critically on their own discipline's strengths and weaknesses, and become appreciative of what is inherent to interdisciplinary work – the need to find a common ground and work together on a common aim. On the contrary, when partners feel like this common understanding is not there, frustration and feelings of exclusion can come up. Thus, Marzano et al. (2006) argue that “success or failure within interdisciplinary projects is heavily dependent on the strength of interpersonal relations among team members” (p. 190). Love et al. (2021) also stress this link of scientific productivity to interpersonal relationships and outline how greater interaction among project members has the potential to increase the quality and innovativeness of the work carried out. In order to ensure the successful creation of strong interpersonal relations between partners, a variety of strategies have been identified in different studies. At the forefront of factors enabling the building of good relationships are time and close contact. To this end, meetings and workshops, as well as social gatherings, formal teamwork exercises or even field trips, can be important opportunities to establish a group identity and a mutual sense of responsibility, as well as build trust and define a shared set of goals (Cheruvilil et al., 2014; Marzano et al., 2006). Within the time spent together on such occasions, a sense of security within the group gets strengthened. Furthermore, it is important that responsibilities are clearly stated at the start of a project, as is the additional commitment required to make interdisciplinary communication and collaboration possible (Marzano et al., 2006).

In closing their article, Marzano et al. (2006) also acknowledge the role of institutional frameworks in opening up or closing down possibilities for such interpersonal relationships to develop. Particularly, the role of funding bodies is great in shaping these spaces – the authors found that funding bodies were perceived by researchers as unwilling to ‘pay the cost’ of the time and effort it takes to establish good relationships within a project, and thus, these resources are often not accounted for in the planning of a project. I will further explore this and other aspects of the projectification of research in the following sections.

2.3 EU-funded projects & the projectification of research

The recent developments of increasing inter- and transdisciplinarity in research also become apparent when looking at large-scale funding programmes for research projects, such as those implemented by

the European Union. Bruce et al. (2004) point to this development already in the context of the European Union's Fifth Framework Programme (1998 - 2002), where calls for interdisciplinarity in funded projects started becoming of higher importance. Back then as well as in later framework programmes, such as Horizon 2020 (2014-2020), the implementation of interdisciplinarity, later specifically also with a focus on the integration of social sciences and humanities (SSH), was met with questions of alignments of concepts and impacts on collaboration and research results (Bruce et al., 2004; Graf, 2019).

2.3.1 The EU's framework programme

The currently running framework programme of the European Union is called Horizon Europe (2021-2027) and has been allocated an overall budget of €95.5 billion (European Commission, n.d.). The programme aims to "[facilitate] collaboration and [strengthen] the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports creating and better dispersing of excellent knowledge and technologies" (European Commission, n.d.). Legal entities from the EU and associated countries are eligible to participate and receive the funding allocated to certain actions – this includes, for example, national, regional and local authorities, public or private organisations, research institutions, networks, NGOs, and more (Büttner, 2019). Funding from Horizon Europe can be received through three pillars. My thesis specifically focuses on projects that are funded under "Pillar 2 – Global Challenges and European Industrial Competitiveness", which consists of six clusters, each of which centred around one general area. Within those clusters, calls for proposals are published, which describe general requirements for areas to be tackled. Each call in turn consists of specific topics for which consortia can apply. Topics include exact requirements that need to be met by funded projects, such as specific outcomes, impacts, or types of partners (European Commission, n.d.). In most cases, consortia must consist of at least three organisation from three different EU or associated countries, with at least one partner being from an EU country, in order to be eligible for funding (European Research Executive Agency, n.d.).

2.3.2 Projectification of research

With the increasing projectification of research and development in the EU, a specific professional sphere has been created, one which Büttner (2019) calls the "project world" (p. 169) of EU funding policy. This world comes with its own standards and logics, leading to increased standardisation and specialisation within the sphere of research & development.

Felt (2025) discusses how the temporal logic created by this 'project world' impacts the imagination and practices of knowledge production. The author argues that projectification has clear implications for research, including the conviction that research and innovation practices can be planned clearly and

several years in advance, even though the time needed for certain tasks is influenced by a range of factors and always varies in practice. Furthermore, Felt (2025) argues that knowledge – and, by extension, the collaboration culture – is at risk of dispersal when, at the end of a project, the team splits up and project members individually move on to their next task. Further implications of projectification include the need for short-term pursuit of highly specific research questions within project timeframes, the need for a project's success to be discussed before it even kicks off, and every deviation from the initially planned work requiring a justification. Lastly, Felt (2025) outlines how even the identities of researchers are impacted by projectification, as is the overall job market, which has become highly temporalized. All of this, Felt (2025) argues, affects research and collaboration at large. In terms of projectification affecting the job market, Büttner (2019) further discusses how the acquisition of funding within this field requires specific expertise, one which becomes increasingly professionalised within services offered to potential beneficiaries. The role of such experts is thus to try to mitigate between the requirements set by the EU as the funding authority, and the demands of local actors when it comes to addressing societal challenges, while likely compromising on certain aspects to fit into the pre-defined schemes of funding acquisition. This increasing 'expertisation' of EU funding thereby, as Büttner (2019) outlines, also leads to the creation of new social groups and hierarchies. On the one hand, it creates new professional opportunities, which however, on the other hand, are often unstable and precarious, project-dependent jobs embedded within the structure of EU-funded projects. Specifically for the management of such projects, expertisation in the form of the development of new standards and techniques has been observed, including tools and models such as Gantt charts or project lifecycles. Furthermore, the author highlights an expansion of rituals of quantification and verification within the project sphere. The project world of EU funding, as a whole, thus consists of distinct expertise and its own standardised procedures, notions, technical terms and abbreviations. Büttner (2019) therefore argues that "only actors who are able to plan, develop, and implement projects according to rules and regulations specified in EU funding schemes and within a predefined timeframe are eligible to receive EU funds" (p. 176). Beneficiaries thus face the challenge of framing their planned activities as a direct contribution towards the EU's policy aims, having to entirely adhere to the specific rhetoric when writing a funding application. To facilitate this process, it is not untypical to hire external specialist to complete the tasks of proposal writing and project management for them.

Overall, Büttner (2019) highlights the precarity of jobs within the project world – many people do not have permanent contracts, but depend on the constant acquisition of new projects and, thereby, new funding in order to keep their position. Continuous contact with potential project partners is thus an important part of their profession. To be successful in the world of EU projects, thus, a certain 'EU literacy' and very particular knowledge is necessary.

The role of the project manager is one that is particularly important for ensuring the success of an EU-funded project. Tenhunen-Lunkka & Honkanen (2024) compiled factors that contribute to a successful collaboration. The motivation of the coordinator and the consortium, the establishment of trust, and the clear division of roles and responsibility were found as specifically relevant. Furthermore, they stress the importance of working in small groups and having regular meetings. Especially in-person meetings are important to make project partners feel comfortable with bringing up issues they encounter. Overall, the three key factors to success that a project coordinator should focus on are communication, trust and collaboration.

In terms of linguistic practices, Sivertsen (2018) argues that multilingualism and EU projects not just go hand in hand, but are, in practice, in conflict with each other. Not only are the framework programmes, policies and accompanying publications all written only in English, the project will need to be implemented in English, too – being able to communicate and work in English is thus one of the basic requirements for being able to obtain this kind of funding. Usually, this shared language necessary to achieve the aims set within this ‘single market’ is accepted without questioning. For this reason, Sivertsen (2018) argues that “perhaps therefore, the topic of language is not mentioned in any of these policies or in the underlying official documents. The role of language is invisible” (p. 1). However, as also outlined in previous sections, science needs to be multilingual – not least to fulfil its societal responsibilities, which, in the form of notions such as Responsible Research and Innovation (RRI) or citizen science, are also heavily foregrounded in the EU’s framework programmes. Thus, when looking at the role of language in science communication and societal engagement, it becomes clear that the ambitions of funding policies and their actual implementation conflict with each other. Sivertsen (2018) further illustrates this by highlighting the importance of international competition and peer review in the selection process of proposals to receive funding. Such processes are inherently shaped by mainstream evaluation criteria and practices, which incentivise publishing in English and assign less value to multilingual and multimodal communication practices such as those necessary when realising the aims of concepts such as RRI, open science or citizen science. To counteract this inherent contradiction in EU funding policies, Sivertsen (2018) poses the concept of ‘balanced multilingualism’. Balanced multilingualism aims to sensitise researchers and policy makers to the language(s) needed to fulfil all kinds of different communication purposes in different research areas in a holistic manner, without excluding languages or setting priorities. To pave the way towards a more responsible globalisation of research, it also establishes tools for documenting and measuring language use for different purposes in research.

While, from the literature I have outlined in this section, it becomes clear that projectification shapes the way research is able to be carried out, there is a lack of studies on how collaboration within such a setting looks like, as opposed to non-projectified forms of collaboration. I aim to fill this gap by looking

at what projectification does to collaboration and what collaboration in specifically EU-funded projects as a temporally closed space with pre-defined outcomes and achievements can look like.

2.4 Summary

In this chapter, I aimed to lay the base for my research by gathering an overview of previous studies on topics which informed and shaped my research. To this end, I first looked at the topic of language from a linguistic perspective as well as from an STS-informed point of view, outlining the role of language in academia. I then moved on to studies on inter- and transdisciplinary research and collaboration. Lastly, I provided an overview of EU-funded projects as a specific case of inter- and transdisciplinary research, and the implications that such projectification of research may have.

In everyday communication in research settings, the dimensions of language and disciplines are often not clearly separable. For example, Marzano et al. (2006) highlight that language – both in the sense of having to use English as a typically second language, as well as in the sense of disciplinary terminologies – is often cause for misunderstandings and collaborative settings and, in turn, this language as a whole shapes the way in which research is able to be carried out. I thus aim to look at both factors in combination as part of my research in a setting in which both disciplinary and linguistic boundaries are drawn, re-drawn and bridged: that of EU-funded projects.

In the literature I outlined in this chapter, the two dimensions – multilingualism and inter-/transdisciplinarity – were typically studied in separation, or with one assigned significantly more weight than the other (for languages e.g., Curry & Lillis, 2024; Holmes & Rajab, 2022; Lin, 2020; Mol, 2014; for disciplines e.g., Baus, 2010; McGreavy et al., 2022; van Helden, 2022). In my research, I want to look at the communication spaces and dynamics in international, inter-/transdisciplinary research projects by specifically taking both dimensions and their combination into (as much as possible, equal) consideration.

Furthermore, existing studies in great depth explore the collaboration dynamics in inter- and transdisciplinary settings (e.g., Baus, 2010; McGreavy et al., 2022; van Helden, 2022), as well as the frame that projectification creates for such collaborations (e.g., Büttner, 2019; Felt, 2025; Sivertsen, 2018; Tenhunen-Lunkka & Honkanen, 2024). However, I found a lack of studies examining how collaboration dynamics specifically are shaped by such projectification, highlighting not only the setting in which research takes place but also how this setting compared to others (e.g., more long-term collaborations) shapes the dynamics that emerge. This is another gap that I aim to address with my research by picking EU-funded projects as a case of projectified, inter-/transdisciplinary and international research collaboration. Within this case, I will look at how spaces for communication are being created, taking disciplinary and linguistic diversity into account. In the following chapter, I will outline this research interest in more detail.

3. Research questions

In this thesis, I will look at EU-funded projects as a case of collaboration across disciplines and language backgrounds. Speaking different languages and using different disciplinary terminology often goes hand in hand, and, as I aimed to outline in the previous chapter, the two are not easy to clearly separate in communication. For this reason, I decided to combine these two aspects and look at them together. I further want to address the gap in studies on how projectification shapes collaboration dynamics by looking at particularly EU-funded projects. EU-funded research projects provide an interesting case to look at, as they are, as described in the previous chapter, inherently set up as international and inter-/transdisciplinary, and are greatly shaped by institutional frameworks on different levels (EU, national, and local). Within this thesis, I aim to explore how spaces for collaboration are created in such projects, and how linguistic and disciplinary differences are bridged to find a common ground. I thus ask:

RQ: How do researchers collaborate and communicate across disciplinary and linguistic boundaries in the context of EU-funded projects?

As I will outline further in Chapter 5, I will specifically look at social scientists' experiences through interviews with participants working at various research institutes located in Vienna. This approach will enable me to gain a range of insights into how one sub-group of participants in EU-funded projects perceives the collaboration and communication dynamics that can take place within such a setting. To better address the individual aspects within my research interest, this main question can be split up into the following sub-questions:

SQ1: What do collaborative spaces within EU-funded projects look like, and which implications do the conditions at hand have for what communication and collaboration can look like?

Within this first sub-question, I want to explore the unique collaborative space created for each EU-funded project. This will include looking at institutional pre-conditions in terms of disciplinary setup and languages used, and how this inter-/transdisciplinarity and multilingualism is dealt with in practice. I will look at which languages, in the broadest sense of the word, are used to communicate among consortium partners, and what the dynamics between partners from different disciplinary backgrounds look like. I further will collect insights into my interviewees' perceptions of the implications that this setup has for the research collaboration at large. I will also look at further dimensions shaping the spaces for collaboration, such as cultural and social factors, as well as institutional frameworks. The theoretical lenses I will use to guide my research within this sub-question are those of epistemic cultures and epistemic living spaces, as well as that of standardisation, which I further elaborate on in the following chapter.

SQ2: How are the different disciplinary and linguistic backgrounds of partners brought together and bridged to find a common ground?

To further explore the collaboration and communication dynamics in these projects, I specifically wanted to study the creation of spaces and boundaries within and around them. To this end, I will explore which boundaries – both between different disciplines and different language backgrounds – are perceived by the interviewees. I will then look into whether and how they are able to be bridged throughout the course of the project, and which strategies are used to do so, as well as which factors can hinder or entirely impede this process. While I will also look at general strategies and tools used to do this, I will particularly focus on processes of (disciplinary and linguistic) translation between partners from different backgrounds. I will explore these processes on a general project-level before zooming in on two important aspects: the creation of a common vocabulary on one, and the definition of common project aims on the other hand. By diving deeper into these two situations, I aim to identify the significance of them to the overall projects, which problems are encountered, and whether and how those can be addressed. To answer this sub-question, I will mainly use the theoretical lenses of boundary work, boundary objects and trading zones, as outlined in the following chapter.

SQ3: Which conditions can foster successful, cross-boundary collaboration in such research settings?

With this last sub-question, I aim to summarise the findings from the previous two by particularly identifying the conditions under which inter-/transdisciplinary, international projectified collaboration can work best. To this end, I aim to examine both what interviewees perceived as useful and hindering in shaping their collaborative environment to identify an ‘ideal’ collaboration setting, or what is necessary to create one.

4. Theories and sensitising concepts

In this chapter, I will outline the theories and sensitising concepts I use to guide my thesis. With the theoretical lenses of boundary work, boundary objects, and trading zones, I aim to look at the spaces created within inter- and transdisciplinary, international projects, and how boundaries between those are (re-)constructed and/or broken down. The study of standards and power relations will guide me in investigating how different kinds of standardisation, such as in terms of language use, shape collaboration dynamics between different partners. Lastly, the notions of epistemic cultures and epistemic living spaces will enable me to study cultural aspects shaping collaboration as well as the institutional conditions that form the spaces in which knowledge production takes place.

4.1 Boundary work & boundary objects

The notion of boundary work has been conceptualised by Gieryn (1999) as a theory to look at how spaces are being drawn and boundaries between them are set up and transformed. These boundaries are seen as social constructions that can constantly be re-negotiated and re-evaluated. Boundary work has been applied to the study of disciplines and interdisciplinarity to investigate how disciplines are constituted and demarcated from others, as well as the zones in which the boundaries between them are renegotiated and built anew (Baus, 2010; do Mar Pereira, 2019).

Applying boundary work to my study, the theory thus provides a lens for me to look at whether and how existing boundaries are sustained or broken down when working across different disciplines and languages, and what happens to communication practices established within certain boundaries in this process. Boundary work further offers an angle for me to look at whether, within interdisciplinary and multilingual projects, new boundaries for collaborative spaces emerge, based on common understandings created, and learn more about the language created in them. It allows me to stay attentive to whether and how, in the research projects I will look into, boundaries between disciplines are built up, and if they are, how they manifest and which implications they have for the people involved. In addition to the construction of new boundaries, I am also interested in the deconstruction of existing ones in the process of building new collaborative spaces. Furthermore, the theory sensitises me towards boundaries between linguistic backgrounds (e.g., native vs. non-native speakers of English), whether they are being perceived, and if they in any way affect the work that is being conducted.

In line with the notion of *trading zones* by Galison (1999), I am interested in the boundaries between disciplines and languages as the spaces at which new understandings are being negotiated and created. Trading zones, as described in section 2.2.2, have been used by Galison (1999) to describe places of coordination of action and belief. In these zones, groups can collaborate to find consensus for common work. Using analogies from linguistics, the author describes how modes of communication created

within such a trading zone may stabilise into a language designed to mediate between certain groups, typically a language that approaches the other group with less complexity and detail in its communication. Furthermore, practices and epistemic frameworks developed within these trading zones may be taken back into the respective disciplinary cultures. Galison (1999) thereby suggests that by collaborating, disciplines can learn from each other, expand their horizon and cause shifts in attitudes towards collaboration, knowledge production and dissemination.

In accordance with the concept of trading zones, I aim to follow the understanding of 'boundary' as described by Star (2010), "Often, boundary implies something like edge or periphery, as in the boundary of a state or a tumor. Here, however, it is used to mean a shared space, where exactly that sense of here and there are confounded" (pp. 602-603). By viewing these shared spaces at the boundaries of different disciplines as trading zones, I am able to study the distinct languages created in these contexts. Concretely, this means that the combination of these analytical concepts and thus viewing inter- and transdisciplinary working environments as trading zones will allow me to learn more about how concepts are aligned and commonly decided upon, which language(s) are being used to communicate, and how the different disciplinary, institutional and linguistic backgrounds play into this process of forming a common space of understanding. This includes, for example, diving deeper into the creation of definitions within projects, as this can be understood as a negotiation of meaning within a contained 'trading zone', i.e., a specific group of people at a specific time. Furthermore, viewing research projects as trading zones allows me to study the collaboration dynamics at play, e.g., when it comes to disciplinary backgrounds, but also the role of interpersonal communication, and whether and how those flow into the creation of a common language within them.

While the concept of trading zones provides a useful lens for me to look at my case, I also want to acknowledge some of its limitations, as outlined by Fan (2012). The author argues that the economic notion of 'trading' does not adequately address the diversity of scientific contact, which happens in many different contexts and situations that often look greatly different than what one would imagine when thinking of trading. It further does not capture power relations that are often a big aspect of scientific encounters, in my case on several levels such as linguistic, disciplinary, or hierarchical. To address this limitation, I will thus complement this theoretical lens with further ones, as described in the following sections. Fan (2012) also notes that the model of trading zones does not adequately account for changes that happen within the individual communities and their cultures during and after the contact that happens in the trading zones. However, scientific encounters can have more significant, lasting effects on the partners involved – what happened during the collaboration is not simply 'forgotten' or becomes irrelevant once a project, for example, has ended and partners go their separate ways. This limitation is one that I aim to address through the notion of epistemic cultures & epistemic living spaces, which I describe in a following section.

Furthermore, the concept of boundary objects, as developed by Star & Griesemer (1989), can provide additional insights for my study. Star & Griesemer understand boundary objects as objects that are part of several social worlds but are flexible in their specific meaning in each of them. Through this characteristic, they can be tools to communicate or translate interests across different groups, which is where I also see the relevance of this concept to my project. As I am interested in identifying strategies and ways of facilitating mutual understanding across different languages, it can be said that I am looking for boundary objects existing across different disciplines and linguistic backgrounds that can facilitate a common ground. With my project, I thus ask which boundary objects are put in place to enable acts of translation when working collaboratively in inter- and transdisciplinary and multilingual environments. In this context, I am interested in both actual 'objects' and tools, such as, e.g., translation tools, glossaries, or predefined work plans, but also more abstract 'objects' such as a mutual understanding of a concept created for a specific time and space. While I want to use this sensibility to look into existing boundary objects and their role, I also want to make space for reflections on boundary objects that do not yet exist, but might be desired to cross boundaries that have not previously been overcome. This includes looking into what researchers in international, inter-/transdisciplinary projects would view as an ideal workflow of collaboration and communication, but also challenging their imagination and envisioning the 'ideal boundary object' to facilitate such collaborations.

Before closing this section, I want to acknowledge one of the main blind spots of boundary work, which is the dimension of power distribution (Gieryn, 1999). Boundary work as a theory does not provide a proper lens to look at who is in charge of drawing boundaries, which identities and values lie behind them, and which social groups are in-/excluded in this process. As this dimension, however, is one that I place at the core of my work, I aim to adequately consider it during my analysis, also through the additional theories I will outline in the following sections.

In conclusion, the theoretical lens of boundary work will enable me to look at the (re)conceptualisation and (de)construction of boundaries between disciplines and languages in multilingual, inter-/transdisciplinary research contexts. It will sensitise me for the construction and bridging of distinct spaces within research projects and enable me to identify potential boundary objects that enable common work across them.

4.2 Standards & power structures

Standards are usually put into place when there is a need of making things or groups work together (Bowker & Star, 2000). Increasing collaboration, interdisciplinarity and internationality in research thus lead to the need of introduction of standards to enable cooperation between actors of different fields and backgrounds. Standards needed for successful collaboration in research are, for example, a

common language, but also those introduced by the general project framework, such as specific timelines or ways of structuring work.

As argued by Busch (2013) and Bowker & Star (2000), standards shape social order and can be directly linked to power: Those who can read the standard or even define it are at a clear advantage, while the standard actively disadvantages other groups. Furthermore, they are often enforced upon groups by legal bodies. While, looking at language, this may not be the case in informal spaces of research collaboration such as email conversations, institutions such as funding agencies or journals determine, among others, the language and form in which research is to be reported, which in turn affects the research and collaboration process. For example, studies have shown that non-native English speakers face higher barriers when trying to publish a paper in international English-language journals than native speakers do, as shown by, e.g., higher numbers of paper rejections (Hewings, 2006). As the use of English as a lingua franca for academia as well as the decision upon usage of certain disciplinary terminologies or concepts also benefits some groups while excluding others, as argued by, for example, Wolters (2015), looking at standards in EU-funded projects is an important aspect of my research.

Looking at the role of different linguistic backgrounds in research collaboration requires an understanding of power dynamics and hierarchies at play. Scholars from STS and related fields, such as communication studies and linguistics, have drawn attention to the necessity of speaking English as a researcher to succeed and further your career, the inaccessibility of science due to language incompatibilities, and asymmetries faced by non-native English speakers compared to native speakers (Fradkin, 2017; Wolters, 2015). These and more factors greatly impact not only the career of individuals, but also research projects and even scientific disciplines as a whole, which is why I aim to stay sensitised to this topic throughout my project and look at how the use of a lingua franca potentially shapes collaboration dynamics and hierarchies.

In addition to linguistic standards, other institutional standards are at play in the field I look at. This is specifically prevalent in the context of projectification, as outlined in section 2.3.2. Here, standards are applied in relation to the increasing expertisation within project-based research and development, which in turn shape hierarchies and power structures (Büttner, 2019). Furthermore, not just academia as a whole, but specifically EU projects put English in the centre of all activities, and being able to communicate (well) in that language is a central requirement for participating in an EU-funded project (Sivertsen, 2018). These and other instances of institutional standardisation in projects, such as work structures, timelines, and quantifications, are factors which I aim to consider in my analysis of the collaborative spaces created.

In summary, staying sensitised towards different processes of standardisation and their interplay with power dynamics will allow me to, on the one hand, dive deeper into the role of English as a lingua

franca in research projects, and, on the other hand, examine other institutionally determined standards in research projects and how they shape collaboration dynamics.

4.3 Epistemic cultures & epistemic living spaces

Looking at spaces and practices of doing research, Knorr Cetina (2007) defined the notion of epistemic cultures, a concept aiming to shed a light on processes of knowledge creation. ‘Epistemic culture’ “refers to those sets of practices, arrangements and mechanisms bound together by necessity, affinity and historical coincidence which, in a given area of professional expertise, make up how we know what we know” (Knorr Cetina, 2007, p. 363). The concept thus aims to highlight the life worlds and machineries of knowledge production, including underlying infrastructures, social arrangements, instruments and norms. Knorr Cetina (2007) stresses how distinct epistemic cultures shape different disciplines within dimensions such as instruments, temporalities, models of agency, and ways of defining knowledge. The notion of epistemic cultures encourages researchers to not just study the outcomes of knowledge production, but look at it as a practice.

Inter- and transdisciplinary projects are inherently composed of different epistemic cultures, each coming with their own practices, objects, valuations and norms. Communication dynamics emerging in such projects are thus not just shaped by disciplinary languages and jargon, but even more so by the deeply embedded cultural differences in how knowledge is produced and legitimised in different disciplines. Using the concept of epistemic cultures, I am able to more deeply investigate the aspect of inter- and transdisciplinarity in the case of EU projects, and how or why the collaboration is shaped by it. It furthermore enables me to look at how the different epistemic cultures of different partners shape their approach to collaboration and thus the project as a whole, where frictions are created or perceived, and how visible those cultural differences are in practice.

Knorr Cetina (2007) also addresses several limitations of her concept. The first one which I also want to acknowledge for my use of it is that knowledge practices are not as bounded to specific places as the concept may make it out to be – the more distributed, networked and global aspects of knowledge creation should not be overlooked. Furthermore, she highlights that a generalisation across different epistemic cultures is difficult as practices and objects are social, material and symbolic at once. Lastly, I want to address Knorr Cetina’s (2007) acknowledgement of the wider knowledge cultures (e.g., society, norms, politics, institutions) shaping epistemic cultures (which focus on specific knowledge domains). It is thus important to situate an analysis of epistemic cultures within these wider contexts. Especially this last limitation of not forgetting about ‘outside’ factors shaping knowledge production I aim to address with the concept of epistemic living spaces.

Felt & Fochler (2012) described the notion of epistemic living spaces as researchers’ “individual or collective perceptions and narrative re-constructions of the structures, contexts, rationales, actors and

values which mould, guide and delimit their potential actions” (Felt & Fochler, 2012, p. 4). Epistemic living spaces are conceptualised as more fluent than the tightly-bound epistemic cultures, which is why the notion allows for looking more deeply at how they are shaped by policy, societal imaginaries and norms, and other forms of research governing.

Epistemic living spaces define a researcher’s sphere of actions as well as their perception of what is possible within it, incorporating assumptions about knowing, living and working in academia. With the concept, individual and collective experiences can be situated within global systems & systemic changes. Felt & Fochler (2012) outline five dimensions of epistemic living spaces: 1) epistemic (processes of knowledge production, definitions of ‘good research’), 2) spatial/material (physical arrangements in which the work is taking place), 3) temporal (perceptions of the tempo & rhythms of academia and its relation to other time regimes, e.g., institutional evaluations), 4) symbolic (values and modes of ordering), and 5) social (imagined forms of togetherness). These five dimensions provide a framework for looking at the lived experiences of researchers and, along the lines of Knorr Cetina’s (2007) concept of epistemic cultures, for studying knowledge production in its full context.

In my thesis, the concept of epistemic living spaces is especially useful when examining the institutional dimension of the collaborations I am looking at. On the one hand, it allows me to study EU projects as one specific epistemic living space, looking into interviewees’ perceptions of this space and how it creates a particular environment for inter- and transdisciplinary, international research collaboration. On the other hand, it enables me to study the perceptions of the individual epistemic living spaces of partners from different backgrounds, and how those come together to shape a project as a whole.

Connecting the two theories, Felt & Fochler (2012) also highlight the boundary work that researchers engage in when shaping the epistemic living spaces they exist in, either adapting them to their own requirements and expectations, or drawing boundaries to counteract externally imposed, unwanted shifts or changes to their spaces. This specific kind of boundary work within epistemic living spaces is one that I also aim to look for when exploring how the institutions involved shape the epistemic living spaces of researchers in EU projects, and whether or how those are perceived and accepted/rejected. In conclusion, using the theoretical lenses of epistemic cultures and epistemic living spaces, I will be able to more deeply look at the different (disciplinary) cultures present in research projects, and how they interact with each other. They further allow me to look at the spaces created within such projects, what they are shaped by, and how they are shaping collaboration.

4.4 Summary

In concluding this chapter, I want to outline how all those individual theories and concepts will come together in my thesis to guide me in answering my research questions. All three broader theoretical

lenses I outlined in this chapter will contribute to my main research question of how researchers collaborate and communicate across disciplinary and linguistic boundaries in EU-funded projects (*RQ*). When looking at the sub-questions, their respective roles become clearer. Epistemic cultures & epistemic living spaces as well as sensitivities towards processes of standardisation will be particularly important for examining what the collaborative spaces in EU-funded projects look like and how their conditions shape the communication and collaboration that can take place (*SQ1*). They will allow me to gain an overview of the spaces my interviewees work in, what they are shaped by, and how the linguistic, disciplinary and institutional standards at hand affect collaboration dynamics.

The notions of boundary work, trading zones and boundary objects will guide me in looking at how the different disciplinary and linguistic backgrounds of partners interplay and are bridged in finding a common ground within EU-funded projects (*SQ2*). Specifically, these concepts will sensitise me for how distinct spaces within research projects are (re/de)constructed and bridged, and how boundaries between disciplines and languages are perceived and dealt with.

Lastly, all of those aspects will come together in addressing the conditions necessary to foster productive collaborative spaces (*SQ3*).

5. Research methods

To tackle my research questions, I conducted qualitative interviews with social science researchers working in international, inter-/transdisciplinary collaboration with STEM partners. I interviewed seven social scientists in total, all working at research institutions based in Vienna. During the interviews, I aimed to gather data on their perceptions of collaboration and communication dynamics in international, inter- or transdisciplinary EU projects. The interviews were then analysed using a thematic coding approach.

I chose the method of interviews since I aimed to get insights into personal experiences and perceptions of my participants. Particularly, they enabled me to have one-on-one talks with researchers, which made it easier for participants to share their insights on more delicate issues and experiences they might not want to share in front of others, especially their colleagues. Through these private spaces, I was told a lot of rather personal anecdotes that researchers might not have been comfortable sharing in a group setting. For this reason, interviews are an established method in similar fields of study, as for example argued by Hwang (2013) in the course of his research on international communication in collaborative science.

I chose to conduct semi-structured interviews as they, like Jensen & Laurie (2016) highlighted, allowed me to best explore a variety of perspectives on my topic. By having a pre-structured questionnaire, I was able to ensure that I collect the relevant data from all participants, while remaining open to interviewees' individual experiences by adapting the questionnaire during the interview if needed. Furthermore, by being able to introduce follow-up questions or other arising topics into the interviews as they went on, I was able to gather much more detailed data, which helped me to better contextualise my results and led me to consider further aspects I had not previously thought about.

Having worked in research and particularly on EU-funded projects for over three years at the point of writing this thesis, I am personally familiar with the general situation and context that my interviewees come from. I therefore would place my study within the area of 'insider research'. As described by Jensen & Laurie (2016) and Bryne (2018), insider research occurs when the researcher is part of the group they are studying, such as through sharing a profession. This situation can have various implications for the research conducted. On one hand, insider research can facilitate access to participants as well as increase trust, as the researcher 'speaks the same language' and understands their context better. This was definitely the case for my research – I noticed interviewees talking more freely once they realised that I knew certain terms and concepts and was familiar with the context of EU-funded projects. This increased trust and ease of communication can potentially allow for more authentic data being collected. On the other hand, insider research also comes with the risks of over-assuming a shared understanding, projecting your own experiences onto participants, and difficulties

in managing anonymity. For these reasons, the authors emphasise the importance of critical reflection of researchers throughout the whole process, examining assumptions, influence and positionality.

5.1 Research subjects

The research context of EU-funded project is one that not just me, but a lot of today's researchers are highly familiar with. Having worked on a number of EU-funded projects over the past years, I have been able to get an understanding of their inner working, which fostered my interest in studying the collaboration and communication dynamics that emerge in these contexts.

With their specific structure and working processes, they pose an intriguing case for my interest in communication dynamics across languages and disciplines, as they are inherently structured in an international and inter-/transdisciplinary manner (Bruce et al., 2004; Graf, 2019). In order to receive funding through the second pillar ("Global Challenges and European Industrial Competitiveness") of the current funding programme Horizon Europe, projects must include partners from at least three different eligible countries and are typically requested to feature various disciplinary or professional backgrounds (European Commission, n.d.). Projects funded within this scheme thus provided a fitting case for me to look at collaboration dynamics in international, inter-/trans-disciplinary environments, as they are inherently structured as such.

To narrow down this vast field and define my sample, I decided to focus on one specific type of collaboration within such projects: I wanted to study EU-funded projects in which social science partners work together with STEM partners in an international setting. Particularly, I focused on the perspectives of the social science partners within this constellation. This choice was based on multiple factors: on the one hand, my disciplinary closeness to people working in social sciences would limit (disciplinary) language barriers between me and my interview partners and thereby enable me to better understand contextual information. Furthermore, I was particularly interested in their point of view because only in recent funding programmes has the integration of social sciences been highlighted as a priority, and they are still often framed as an 'add-on' to the main research conducted in the project (Burch et al., 2023), as outlined in section 2.2.1.1. This can be exemplified when looking at how calls for proposals word the necessity of the integration of social sciences – this is often done in one sentence towards the end of the description, worded "This topic should involve the effective contribution of SSH disciplines" (European Commission, 2023), with no further details on their purpose or how they are supposed to fit into the overall research (Burch et al., 2023). My interest in this particular constellation further stemmed from the fact that, within such projects, groups with vastly different epistemic cultures and working languages come together to work on a common aim, conditions which I assumed would provide very rich insights into my topic of interest.

Even with this categorisation, the aforementioned constitutes a group much larger than could ever be studied in the scope of a master's thesis. For this reason, I decided to also focus on one local context and narrow down my sample to social scientists that currently work in Vienna. This not only enabled me to, again, better understand their cultural context and limit language barriers during the interviews, but also allowed me to interview people in person and ensure that the general working environment is similar across all interviewees, allowing for better generalisation of their insights.

Based on these decisions, my interview partners thus had to meet the following criteria:

- Currently work as a social scientist at an institution based in Vienna
- Involvement in an EU-funded project
- Within that project, collaborate with partners that did not all share their first language (L1)
- Within that project, collaborate with partners from STEM disciplines

With these criteria in mind, I then compiled a list of research institutions in Vienna that had one or several social science departments. This included both universities like the University of Vienna, the Technical University of Vienna, and the University of Natural Resources and Life Sciences, as well as other research institutions such as the Institute of Advanced Studies, the Austrian Academy of Sciences, and several smaller research organisations. To identify suitable projects and interview participants, I looked through their webpages on a department level and created a list of potentially interesting projects.

Once I had filtered out the projects most interesting to me, I identified the team leads within those projects. The reason for contacting only the leading team member was the fact that I needed to ensure that my interview partners were fully involved in the collaborative aspect of the project and not just working in the background. I drafted two email templates for contacting interviewees – one in German, and one in English. If I was able to be certain about them speaking German fluently (e.g., through previous publications), I contacted them in German, otherwise, I decided to stick to English. The email included a brief introduction of myself and my research interest, and then stated who I was looking for and why I thought they were a good fit for my study. After receiving a positive reply, I would go on to scheduling an interview in the format (online or in person) and language (English or German) of their preference. In total, I contacted eleven people, seven of which resulted in interviews being scheduled and conducted, three cases in which interest was there but a suitable interview date could not be found, and one person who did not feel like they could provide the insights I was interested in. Everyone I contacted, however, did acknowledge the importance of my study and, except for one person, was interested in contributing to it.

I thus conducted a total of seven interviews for my thesis. The people I interviewed were working at five different institutions based in Vienna. Out of those, two people worked at social science-related departments at two different universities, and five people worked at three other research institutions.

While I aimed to achieve a balance across these different types of institutions, I found it much easier to recruit interviewees from non-university contexts. The reasons for this might be that, on the one hand, these other institutions often conduct more (large-scale) project-based work to gather external funding, and, on the other hand, usually had a better or more accessible overview of such projects on their website, enabling me to contact more potentially relevant people from their organisation. Thus, I was not able to achieve the balance I had aimed at, but still tried to gather people from both contexts to cover all those perspectives. Lastly, I want to note that I paid attention to not contacting multiple people working on the same project, on the one hand to be able to cover more diverse contexts, but also to better ensure my interviewees' confidentiality and anonymity.

I further aimed at achieving a gender balance within my study. While I did pay attention to this in the contacting process, it was not my main concern, as I wanted to prioritise the other criteria described previously. This resulted in me interviewing four people identifying as male, and three identifying as female.

The following table provides an overview of the interviewees, their linguistic background and the format their interview was conducted in.

Table 1.

Interviewees

Interviewee ¹	Languages (in order of acquisition) ²	Interview format
Alex	German , English	In person
Billie	German , English, Swedish	Online
Jamie	Hungarian, English , German	In person
Marlin	German , English	Online
Noah	German, Bulgarian, Italian, English , French	In person
Sasha	German , English, Spanish, French	Online
Taylor	German , English, Spanish, Italian	In person

I managed to gather interviewees from a diverse range of social science-related backgrounds. Most of my interview participants had pursued an academic education in more than one field, but for confidentiality reasons, I am going to list all of them individually, instead of naming the exact combinations. With this in mind, the following backgrounds were represented among my interviewees:

- Cultural studies and linguistics
- Educational sciences
- Molecular biotechnology
- Spatial planning

¹ The interviewees' names were changed to randomly assigned, gender-neutral pseudonyms.

² The language in which the interview was conducted is marked in bold.

- Political science
- Sociology
- Science and technology studies
- Philosophy

The projects the interviewees were currently working on also included a wide range of topics that all included some kind of social science component working alongside a/ various STEM discipline(s). The project's general areas included migration, health and health technology, water, bioeconomy, (sustainable) energy, agriculture, climate change adaption, bio(-based) materials, circular economy, and housing. Here, it is important to note that most interviewees worked on, and also told me about, several projects at once rather than just one, as I had initially intended. Furthermore, they not only drew on current experiences, but also things that had happened in past projects.

Before starting my official data collection process, I decided to conduct a practice interview with a colleague. This practice interview enabled me to work on the phrasing of my questions, as well as showed me where I might want to add or remove some to get to the content that I was the most interested in. While I did rework my pre-defined interview guideline after this interview, it only changed in slight ways. As the insights I gained from this practice interview were highly relevant and interesting to me, I decided – after consulting with the interviewee – that I would use that data just like those from the 'official' interviews. Thus, it is important to note here that I do have background knowledge on that person and their work that I do not have for the other six interviewees. I aimed to remain reflective of this throughout my analysis and strictly only work with the data I had collected in the interview, and to exclude anything else that I might know about their context. This enabled me to treat their data in the same way as that of the other interviewees that I had no previous connections to. More specifically, this meant to be aware of my own experiences and knowledge of the project and the project partners, as well as experiences they had told me about prior to the interview, which I did not include or reflect in my analysis of their data.

5.2 Data collection

To collect the data I was interested in, I decided to conduct semi-structured interviews (Jensen & Laurie, 2016). This allowed me to ensure a coherent structure across all my interviews and cover the areas I was interested in across all of them, while remaining open to my interviewees' personal contexts and experiences. To this end, before each interview, I looked into the interviewee's background and project(s) they work on, and took note in the interview guideline of what I thought would make the most sense for me to explore further.

Regarding the interview setting, I decided to stay open to the preferences of my interviewees to be able to accommodate their availability best. If possible, the interviews were conducted in person, which

was the case for four of the participants. The other three interviews were conducted (and recorded) online via Zoom, either due to time constraints or the interviewee not being in Vienna at the time of the interview. I furthermore adjusted my interview guideline to the language preferences of my interviewees. This resulted in five interviews conducted in German (in all cases, me and the interviewees shared this language as our L1) and two conducted in English (L2 for me and one interviewee, L4 for one interviewee). I will reflect more on the implications and my experience of this multilingual process in later parts of this section.

The process of interviewing started with walking my interviewees through the informed consent form, which included information on my study, data storage, and anonymisation measures. I then asked them to sign the form once all questions were clarified. I further made sure to create space for my interviewees to ask any other questions that might still be open for them – in most cases, there were no further points to talk about, and we were able to start the recording and the prepared interview questions.

My interview guide was prepared based on my research questions as well as previous literature on the topic and adjacent areas that I had compiled beforehand. To account for multiple linguistic backgrounds of my interviewees, I prepared both a German and an English version, which allowed me to not have to translate questions on the spot and ensured that the questions were always phrased the same, as much as the languages' structures and vocabulary allowed. In phrasing my questions, I aimed to encourage interviewees to think of specific situations rather than answering questions in a more abstract manner, which is why I initially oriented my questionnaire around one specific project. In most cases, this did not work out, as researchers are often involved in several projects at the same time, and/or wanted to also share experiences from past collaborations. Still, the way in which I phrased my questions allowed them to reflect on the issues based on their own experiences, even if those were from multiple projects instead of one.

Based on these considerations, my interview guideline consisted of several key areas. I started with questions on the background of the interviewee to get to know them better, ease them into the interview and gather context information on their research background, their current position, projects they work on, as well as their linguistic background. After these more general questions, I moved on to information about the project(s) they worked on. This included a question on how the project came into being, the form of collaboration, and its linguistic dimension. The next block of the questionnaire consisted of questions regarding the interviewee's experience with collaborating with researchers from different linguistic backgrounds. I asked about how multilingualism is dealt with in the project, whether multilingual collaboration can or should be encouraged, and the implications of multilingualism for the project. I then moved on to questions regarding other collaboration dynamics, including experiences in areas such as defining and translating key concepts of the project, creating a common ground and

definition of overarching aims, dealing with different interpretations across the consortium, handling misunderstandings, differences in modes of communication, and overcoming communication barriers. Finally, I asked whether the interviewee wanted to share any other communication dynamics that we had not previously covered, before moving on to the closing questions of the interview, which asked to what extent the interviewee felt it was easier to collaborate with people who ‘speak the same language’ as them, in the broadest sense. For a more detailed overview, the exact interview guideline can be found in the Annex of this thesis.

Reflecting on my experience during the interviews, I was able to follow the interview guide well for all of them without having to make too many adjustments. Depending on how interviewees approached the topic, questions were sometimes already answered before I could ask them, or were made obsolete by previous answers, in which case I skipped them. Furthermore, whenever interesting aspects came up that I had not previously considered, I made note of them and added them to the questionnaire for future interviews. Out of the seven people I interviewed, only two answered the questions in relation to a single project. The other five interviewees decided to share experiences across several projects they either were working on in parallel, or that had already been concluded. I also noticed great differences in the reflexivity of the interviewees – while some went into in-depth philosophical reflections, others stayed more on the surface. This will be explored further in the analysis section of the thesis.

The interview experience – for me, at least – felt very comfortable, and I got the impression that that was the case for the interviewees, too. It felt less like a formal interview and more like a talk about their experiences, with them always happy to tell me more – potentially also due to the fact that I carried out ‘insider research’. Every interviewee was very open in their answers, with seemingly no big barriers in what they were comfortable sharing with me. This might have been due to the fact that my questions mainly concerned their professional life rather than their personal one. Especially at the in-person interviews, the interviewees and I kept talking and reflecting on the topic after the official interview had ended and the recording had stopped. During these talks, they also expressed interest in getting to know me and my background better, and stressed the importance of my study.

Mainly, interviewees answered my questions based on examples, rather than just giving general statements. This usually looked like this: first, the question was answered with a general statement (e.g., “Absolutely, yes.” (Noah)), followed by giving an example from one of their projects. After that, most answers ended by repeating the statement made at the beginning (“So definitely you had that, yes” (Noah)) – sometimes also slightly modified in its meaning. This allowed me to not only build upon their statements, but also use their reflections and examples to contribute towards my research questions.

Lastly, I also want to reflect on the language dimension of my interviews. Whether the interview was conducted in English or German did not make any difference on my experience. I also did not notice any significant differences in how questions were interpreted in the different languages, or what aspects answers focused on. What I, however, want to highlight is that the fact that English as the lingua franca of science (Sano, 2002) and therefore the main working language of all my interviewees had a significant impact on the language used in the German interviews. As a lot of core terms of project work and EU-funded research projects in particular exist mainly in English (even though there are official translations for a lot of them, they are not regularly used in practice), I noticed that those often remained untranslated in the interviews, which resulted in ‘Denglisch’ sentences. This meant that terms such as ‘proposal’, ‘work package’, or ‘deliverable’ typically remained the way they are usually encountered in my interviewees’ work contexts, instead of being translated to their German counterparts (e.g., “weil da gibt es dieses eine Work Package, wo jetzt nicht nur das Social Impact Assessment stattfindet, sondern es findet auch so eine Life Cycle Analysis statt³” (Billie)). This also had implications for my analysis of those interviews: As all core terms were either already mentioned in English or had clear English translations, I found that the language dimension also did not matter much to me during coding, and facilitated the process of translating direct quotes for the analysis section of this thesis.

The length of the interviews ended up varying between 40 and 60 minutes, with an average time of about 48 minutes. While online interviews were usually on the shorter side of this spectrum, the in-person interviews took slightly longer. Overall, the seven interviews resulted in 340 minutes of material, which after transcription added up to 46,125 words.

For the transcripts, I decided to not include pauses or expressions of feelings such as laughter or tonality, apart from a few individual instances where they felt particularly relevant for the interpretations. I thus decided to only transcribe words and other utterances (e.g., fillers such as ‘uhm’) but no other data, as I noticed during transcription, and already during the interviews, that it would not be relevant for my approach to coding or analysis. Thematic analysis, the approach I used and will describe in the following section, generally does not require the same level of detail in the transcripts that may be needed for other approaches (Braun & Clarke, 2006). An exact verbatim account of all verbal utterances can, and in my case proved to be, sufficient for this approach.

³ Own translation: „Because there is this one work package where not only the social impact assessment takes place, but there is also such a life cycle analysis”

5.3 Data analysis

The main programme I used for the transcription and analysis of the interviews was MAXQDA. I also used the included automatic transcription tool for the first transcription of one interview, and aTrain⁴ for the other ones. After an automatic transcription was performed by these tools, I went over them manually to ensure complete accuracy. The coding of the interviews also took place in MAXQDA.

For analysing the data collected during the interviews, I followed the approach of thematic analysis (Braun & Clarke, 2006). Thematic analysis is a widely-used method of qualitative data analysis that aims to identify, analyse and report patterns (= themes) within a data set. A theme aims to capture an important aspect about the collected data in relation to the research question and represents a pattern of answers or meaning within the dataset. In my case, the themes defined were prevalent topics that interviewees went into repeatedly when telling me about collaboration in their projects, and thus the aspects that they highlighted as important in inter-/transdisciplinary, multilingual collaboration. Themes can be identified inductively or deductively – I decided to use a mix of both in order to stick to my previously defined research question but still remain open to aspects I had not further considered. Thematic analysis consists of several phases that are worked through in a recursive process (Braun & Clarke, 2006). In the first phase, the researcher familiarises themselves with the data – the transcription of interviews can be part of this. During the second phase, initial codes are generated based on the data, which are then grouped into initial themes in the third phase. In the fourth phase, themes are reviewed and refined to accurately reflect the meanings present in the data set as a whole. The fifth phase then consists of defining and naming the themes, before the analysis is conducted and written up in the sixth and last phase.

Based on this approach, my analysis looked as follows: Before diving into the material, I went back to the literature collected for the state of the art and theoretical background, as well as my research questions, and derived a first set of codes from there. This allowed me to take a more focused look at my material, while remaining open to adding new codes as I got more familiar with the interview transcripts. The second step was thus going into the transcripts, having a first look through them and starting a rough coding cycle, during which I applied the pre-defined codes as well as derived new ones from the material. With this approach, I coded one interview transcript after the other, adding new codes whenever interesting aspects came up. I was then able to use these for the next interviews. After finishing the first coding cycle, I sorted all codes I had gathered so far into overarching categories to gain a better overview, before starting the next cycle. To ensure I did not miss any relevant aspects of the first interviews, this second cycle enabled me to use all codes derived from the entire collection of interview transcripts and have a more thorough understanding of them.

⁴ <https://business-analytics.uni-graz.at/de/forschung/atrain/>

Having thoroughly coded all interviews, I had a look at the collected codes. I grouped them together based on similarities in their areas or meaning. After creating these groups of codes, I tried summarising their overarching themes. These themes were then, once again, brought to the respective passages in the interview transcripts to ensure that they still accurately reflect what I tried to capture.

These themes then provided the basis for the structure of my analysis. Each section of the empirical chapter consists of one or several themes in which the passages coded with them are explored.

Having followed this approach, I ended up with 33 codes, grouped into seven themes. The following table provides an overview of the themes, how I defined them, as well as some example codes:

Table 2.

Theme descriptions and example codes

Theme	Definition	Example codes
Perception of collaboration	Interviewees describe the form of collaboration their project follows.	Characterisation of Interdisciplinarity (ID)/Transdisciplinarity (TD) Characterisation of multilingualism
Collaboration in practice	Interviewees describe how multilingual, inter/transdisciplinary collaboration looks like in practice.	Language used to communicate (linguistic/disciplinary) Team dynamics Modes of communication
Implications of the format on collaboration	Interviewees describe how the format of collaboration impacts the dynamics.	Implications of ID/TD Implications of a lingua franca Language & power dynamics
Creation & bridging of boundaries	Interviewees describe boundaries between sub-groups of or around the project, and how they were bridged or deconstructed.	Boundaries between disciplines/languages Translation Strategies enabling communication
Creation of a common ground	Interviewees describe the process of creating a common ground among project partners.	Process of creating definitions Process of defining aims (Solving) problems when defining concepts/aims
Institutional dimensions	Interviewees describe the role of institutional dimensions in shaping collaboration.	Institutionally imposed languages Projectification

		Hierarchies
Social/cultural factors	Interviewees describe the role of social and cultural factors in collaboration.	Cultural dimension Social dimension

The passages I assigned codes to varied in their length, with the shortest being individual sentences (e.g., five to six words), and the longest spanning across one or two whole paragraphs (up to 300 words). The reason why this length varied so much was that I typically placed codes on one answer to one question/topic I was interested in. Sometimes, interviewees switched a lot between different topics or themes within a paragraph, whereas in other instances, a whole paragraph was used to convey one single argument. Overall, I ended up with 462 coded passages (passages that were assigned several codes were counted according to the number of codes assigned to them).

As my interviews were conducted partly in German and partly in English, I also want to briefly reflect on whether this impacted my analysis in any way. Generally, I did not perceive any difference in how I analysed German versus English interviews. My codes and themes were always in English, which did not pose any issues for me applying them to the German-language transcripts. Both my analysis as well as the translation of quotes for the empirical chapter were facilitated by the fact that the work environment interviewees told me about is one that greatly relies on English as a working language. Thus, core concepts and terms all either have a standardised English translation, or, in a lot of cases, interviewees even used the English terms in German-language interviews. When translating quotes from German to English, I tried to preserve the initial structure and wording as much as possible. I thus did not try to create coherent sentences where they were not in the original, and stuck to word-for-word translation as much as possible while aiming to create grammatically correct sentences. My main focus, however, was on preserving the meaning of the passage. I thus also paid special attention to connotations words may have, both in the German original and the English translation.

5.4 Ethical considerations

As my research concerns a topic both related to personal and professional aspects of the participants' lives, following ethical principles to protect the participants was of highest importance to me. This included thoroughly informing participants before starting the interview and stressing that participation is voluntary, and their data can be withdrawn at any time if they wish to do so. Since my research is concerned with their work as a researcher and collaboration with others, the protection of the researchers' identities is of great importance, which is why throughout the whole thesis, protecting my interviewee's anonymity was a priority. Additionally, I made sure not to urge participants to share any details they might not be comfortable sharing with me. In practice, however, this was not as big of

a constraint than I had initially imagined: all interviewees seemed very comfortable in the interview setting, and I did not feel like they had any restraints in sharing their thoughts and experiences. This can be exemplified by the kinds of stories they told me. Apart from sharing general thoughts about communicative spaces created in their projects, they also told me about their individual relationships with partners and collaborators, problems that came up for them in interpersonal situations, and other personal anecdotes. None of the interviewees felt particularly protective of their data. Reflecting on why that might have been the case, I want to come back to the concept of insider research and the implication it might have had on my research. All interviewees were aware of my background in SSH, which made us all part of the same (or a similar) epistemic culture. Furthermore, at least some interviewees also knew about my own experience with EU-funded projects prior to the interview – for some others it came up during the interviews or afterwards. With this in mind, interviewees may have been more comfortable sharing their personal thoughts and experiences, as they felt understood and less ‘questioned’ rather than it being a conversation among ‘equals’. However, I can only speculate on this.

My study is greatly concerned with communication, especially the role of language. As an interview-based study, my research also heavily relied on language in order to be carried out, which means that I aimed to reflect on its role throughout my work as well. Furthermore, I aimed to be as adaptive as possible to different linguistic backgrounds of researchers by giving them the choice of whether to do the interview in English or in German. This allowed them to choose the language they felt like they could express themselves best with.

Despite – and also because of – these possible adaptations, and in the light of my research questions, it is highly important to me to reflect on my practices and consider the role language plays in my own research. I am aware that me being able to conduct interviews only in German or English already puts a bias on who could participate in my study and whose perspectives were heard. I thus want to acknowledge this limitation.

I further want to highlight a limitation of my study stemming from interviews as my chosen method. As interviews depend on self-reporting of voluntary participants, it is important to note that the results of my study need to be interpreted having participation biases and self-reporting biases in mind. Additionally, since an interview takes place during a rather short amount of time, participants might not have been aware of everything that could have been said regarding my research interest, which also limited the results I could get. Nonetheless, their personal insights and thoughts at the time of the interview are highly valuable as they, collectively, give a glimpse into what is most prevalent in their professional day-to-day life.

6. Empirical analysis

During the interview process, I encountered a range of narratives that, while general observations were often similar, fall on a large spectrum of what collaboration can look like in practice. In this chapter, I will mainly work out similarities that emerged in most or all interviews, but also highlight those aspects in which opinions and experiences diverged. I thereby want to shed a light on the variety of ways that inter-/transdisciplinary, international collaboration can look like.

To contextualise the results, I first want to lay out the spectrum on which they are placed. While two interviewees⁵ (Alex, Jamie) only told me about one of their projects, the other five (Billie, Marlin, Noah, Sasha and Taylor) drew from experience from multiple projects they had worked on in the past. In all projects, consortium partners included those from SSH disciplines (the interviewees themselves, as well as sometimes additional ones), STEM partners (mostly from life sciences like biology or chemistry), and, for most of them, practitioners (e.g., public bodies, technology developers, or citizen representatives). The balances between those differed – in some projects, social science partners were in the majority, while in others, STEM partners dominated the consortium. The overall collaboration dynamics were perceived very differently when it comes to their productivity and pleasantness: for most interviewees, collaboration was perceived as predominantly smooth and productive (Billie, Marlin, Noah, Sasha, and Taylor), one interviewee described large hurdles and big barriers in coming to a common ground (Alex), and one even described the collaboration between SSH and STEM partners as non-existent and impossible (Jamie).

With those different situations in mind, I will start my analysis by laying out the interviewees' definitions of their form of collaboration, before diving into what it looked like in practice and exploring how a common ground was created.

6.1 Defining the form of collaboration

While I only contacted people working on projects that are – on paper – defined as inter- or transdisciplinary, as well as set up internationally, I wanted to gather information on how my interviewees personally perceive them. This included looking into whether the projects were perceived as inter- and transdisciplinary, as well as multilingual, and what definition of those concepts this perception was based on. This information provides a base for my further analysis as it gives me a high-level overview of what their collaboration looks like, whether it be in contrast or in line with what the project is officially defined as.

⁵ All interviewees' names have been changed to gender-neutral pseudonyms.

6.1.1 Characterisation of inter- and transdisciplinarity

Every person I interviewed worked on one or several projects that were, either on the project's, the organisation's or the European Commission's webpage defined as inter- and/or transdisciplinary. However, interviewees' views on whether that applied in practice diverged. While the majority of interviewees did describe most or all of their projects as inter- or transdisciplinary, two explicitly said that they are not (yet), even though they were technically set up as such.

The interviewees' definitions of inter- and transdisciplinarity in practice were similar across all of them. 'True interdisciplinarity' was described as the close collaboration of researchers from different fields, creating a common framework and working on common outputs. One interviewee specifically highlighted the integration of social sciences in technical projects as a criterion for interdisciplinarity in the case of their projects, something which is explicitly required by the funding agency, the European Commission. Transdisciplinarity was described as building upon interdisciplinarity – without an interdisciplinary base, transdisciplinary work is not possible. Transdisciplinarity was thus characterised as an extension of interdisciplinary research, which includes practitioners, i.e., people who come from fields other than academia.

Other important criteria of inter- and transdisciplinary research became apparent when looking at those projects that were said to not be that in practice. Three aspects were particularly highlighted here: inter- and transdisciplinary research needs translation (making core concepts, aims and methods understandable to all project partners), collaboration (aligning aims and working together on common objectives) and intentionality (being willing to collaborate and invest efforts into translation and collaboration) – aspects which two interviewees did not see as fulfilled (yet) in projects they worked on (Billie, Jamie). While Jamie viewed their project as entirely not inter- or transdisciplinary due to a lack of intentionality from STEM partners to collaborate with the social scientists that, according to the interviewee, would never be fulfilled, Billie described the current situation in their project as the intent being there, but further steps towards translation and collaboration had not yet been taken:

"We did not yet take the step that would enable us to fully understand each other. So it is multidisciplinary, but has not yet been mutually translated. But the aim is there and the openness too. From all project partners" (Billie, own translation (OT)).

This interviewee thus described this specific project as being multi-, but not yet interdisciplinary, framing multidisciplinary as a first step towards interdisciplinarity, where different disciplines are already involved in one common project, but translation across them has not yet taken place.

The last finding in this area that I want to highlight is the gap between what the European Commission as the funding agency defines as an inter- or transdisciplinary project and what these projects look like in practice. Jamie highlighted how the common work of different disciplines, especially in the case of SSH integration into STEM projects, on paper does not, on its own, make a project interdisciplinary:

“I would think it’s neither inter- nor transdisciplinary, at least not constituted as such. So the majority of the people who are involved in the project are chemists and innovators [...]. As we [the social scientists] are there, probably in the commission, they would call this an interdisciplinary project, but to be very explicit, that would be a lie. So I would rather say there are parallel research processes. One, which is the RIA proper, the Research and Innovation Action proper, which was conceived as such. And then there is a parallel research project that is more social science and observing and sometimes offering, trying to offer some kind of feedback to what’s going on” (Jamie).

6.1.2 Characterisation of multilingualism

Like with inter- and transdisciplinarity, views on whether their projects were multilingual also differed across interviewees. In this category, I not only found a difference in perceptions, but also in definitions of multilingualism. On one hand, two interviewees immediately described their projects as not multilingual due to the fact that a lingua franca, English, is the main language of the project (Sasha, Taylor):

“No. English, so simply the lowest common denominator [...]. From the beginning on, everything is written in English. And everything is only communicated in English” (Taylor, OT).

In those cases, the fact that a lingua franca existed and was used by everyone led the interviewees to rule out the possibility that the projects could be multilingual. This opposed the second viewpoint on multilingualism: as EU-funded projects are required to include participants from at least three countries, they are inherently multilingual and thereby necessitate a lingua franca, rather than one being exclusive of the other (Alex, Jamie, Marlin). This was described as follows:

“So the basic requirement of a European project is that partners come from at least three European countries. And the least I have ever seen was, I don’t know, six, seven different countries. So that means that they are always multilingual teams” (Marlin, OT).

In some cases, the projects were described as partly multilingual. Concretely, this meant that, while a lingua franca was agreed upon for project-level communication, certain aspects of the project were fulfilled in different languages (Alex, Billie, Noah). This included, on one hand, activities on local level such as fieldworks or interviews, as well as, on the other hand, outreach and dissemination activities:

“If we want to have an outreach, we have to translate the results in the language, the national language, because we cannot produce reports in English and assume that every person at the municipality of Vienna or in schools knows English. Well, we hope they know English. But if we want to have a more widespread outreach, we have to also have multilingual outputs” (Noah).

6.1.3 Summary

Summarising this section, I observed similar definitions of inter- and transdisciplinarity across all interviewees. However, even though described as such by the European Commission and in official documentation, not all interviewees perceived their projects as truly inter- or transdisciplinary in practice. Regarding the language dimension, the opposite was the case: while conceptualisations of multilingualism greatly varied between interviewees, the practical setup of the projects in terms of languages was generally the same. This first overview of the projects thus showed me that the practical implementation of one and the same setup can vary. Even if defined as inter- or transdisciplinary, implementing this setup requires intentionality and dedication from all partners. The multitude of linguistic backgrounds is, however, something that plays out similarly across all projects, with English being the agreed upon lingua franca. To explore these differences and similarities further, the following section will dive deeper into the practical implementation of these two dimensions.

6.2 Collaboration in practice

Having looked at the interviewees' perception of the setup of their projects, in this section I aim to learn more about what this looks in practice. I will thus explore the languages spoken in different situations, as well as the dynamics that emerge within such inter-/transdisciplinary, international research teams and how they are perceived by the interviewees as social science partners.

6.2.1 Language dimension

Looking at collaboration dynamics in practice, I first wanted to learn more about the language(s) used to communicate within international projects. Here, all interviewees agreed that a lingua franca is a basic requirement for making collaboration across different languages work – not only for project-internal communication, but also for applying for a grant in the first place. Thus, English is the institutionally pre-defined lingua franca of EU-funded projects. However, English skills can greatly vary between project partners. Interviewees noted that while sometimes the language spoken is not perfect or grammatically correct, some accents are stronger than others, and general skills can differ greatly, this is perfectly normal and acceptable within this work environment. It was repeatedly brought up that 'bad English' is what is usually used to communicate, and the level of English needed to be able to participate in projects is not very high. Several interviewees highlighted that the language that becomes the lingua franca is a form of English that is greatly impacted by the different backgrounds of everyone participating in the project, which can lead to untypical pronunciations becoming the norm. This was highlighted by an interviewee as follows:

"For several years, I worked on a project in the Balkans. And when I noticed for the first time, that I was saying EurOpean instead of EuropEan, I thought, help, that's enough. These peculiarities can really rub off on you" (Taylor, OT).

Furthermore, the language spoken in these projects tends to be influenced by the framework they are set in, leading to the use of certain phrases and ways of speaking that are unique to EU projects.

"It is always a balancing act between that EU policy language and what you want to do within the project. That means that sometimes, you have to bend your language to fit into that EU lingo. That means that EU English is often not good English" (Marlin, OT).

While all interviewees agreed that project-level communication exclusively happens in English, instances of local communication or communication in small groups where different languages are spoken were also repeatedly brought up. Particularly in oral communication, either at stakeholder meetings or meetings with other partners that come from a similar linguistic background, switching to another language variety that people are more familiar with is not uncommon. While this is mostly the case for in-person meetings, online meetings in small groups also sometimes switch between languages. Written communication, however, happens exclusively in English:

"When talking on the phone, we of course talked in German. In the moment that we sent an email, we also wrote to German-speaking partners in English because you never know if you might have to forward the email some day. And then that would be bad. I would say, orally you can use different languages [...]. That helps, and is very nice, also on a personal level. But the project communication [...] happens exclusively in English" (Taylor, OT).

While interviewees noted that oral communication in a second language can be harder due to lacking language skills, written communication can be enhanced with AI tools if needed. Furthermore, interviewees frequently experienced a mixing of languages, as they felt like certain issues can be more easily explained in one language over another.

Summarising the insights I gathered from interviewees, a lingua franca is necessary and unavoidable when working across multiple languages, and a truly multilingual work environment is hard to imagine. While a more inclusive approach would allow multiple languages to be spoken and lower entry barriers into this work environment, it would prove to be hard in practice, as one interviewee noted:

"Well, it's possible, but not easy. We try to do it in conferences, that people should speak their own language. But it's sometimes tough to follow. I understand that it's more inclusive. It's more whatever. Ideologically, I'm very much on the same page. But in practice, I think it's not so easy. So from that point of view, I'm a bit hesitant" (Noah).

However, multilingualism still has its place in collaboration, and only relying on a lingua franca is not always possible. When communicating not within a project, but outward, such as in the dissemination of findings to different target groups, the use of English is often neither useful nor practical. As

stakeholders on local level were often found to not match the level of English necessary to understand the content communicated, a need for translation efforts in dissemination activities arises. For this reason, interviewees agreed that project dissemination and communication need to happen multilingually, which becomes especially important the more locally situated these activities are, as otherwise, it can quickly become impossible to properly reach the required target groups.

The use of a lingua franca in a multilingual environment goes hand in hand with the alignment of disciplinary languages across project partners. Interviewees highlighted this aspect as an essential part of collaboration – one that takes time and effort, but is crucial at a certain point in the project. I will dive deeper into what this process looks like in later sections. Which (mix of) disciplinary language(s) partners settle on within a project can differ based on the dynamic at hand. Interviewees agreed that ‘toning down’ your language and limiting the amount of technical terms used is an essential part of inter- and transdisciplinary collaboration, which also includes lowering the starting point when explaining concepts or issues to partners from different disciplines, both for themselves coming from the social sciences, as well as when receiving explanations from partners from different disciplines. This is particularly relevant not only when communicating with project partners, but also with stakeholders or other external target groups of the project. Two interviewees particularly highlighted that in practice, this is complicated by the fact that the longer you work in a certain field, the more accustomed you become to its disciplinary language, and you no longer notice its specificities anymore:

“Everyone is using their own lingo, their own technical terms, that are deeply anchored within each person, deeply institutionalised. And where you sometimes don’t even properly notice that it isn’t such a common term, and that it might not be understood as well by other people”
(Marlin, OT).

One aspect that was particularly highlighted when it comes to disciplinary languages is the difference between the ‘language’ spoken by social scientists and that of people working in STEM disciplines, particularly life sciences. Specifically the gap created in this setting is one that interviewees found harder to bridge at times. The following section will dive deeper into this and other team dynamics that emerge within inter- and transdisciplinary teams.

6.2.2 Team dynamics

Looking beyond the language dimension, I aimed to get insights into the team dynamics in interviewees’ projects, and how they were personally perceived by them as the social scientists. In general, everyone except two (Alex, Jamie) experienced the dynamics that take place within their EU-funded projects as predominantly positive and productive, and the hierarchies within such projects as rather flat. Several factors influence the exact dynamic. One is the size of the consortium – depending

on how many partners and individual people are working together, dynamics play out differently and different communication cultures emerge. Furthermore, it was highlighted that often, personality has a much larger impact than the fact that partners come from different disciplinary and national backgrounds, a dimension that I will further explore in section 6.6.2. Additionally, whether or not a project was built upon a previous collaboration between partners also impacts team dynamics, especially when it comes to trust, which was described as an important asset for successful and productive collaboration:

“I mean, everyone has their own way of thinking. And everyone uses their own language. And, I mean, it is very typical for such a project that it takes some time at the start to get to know each other, to build trust and to create a common language. I would say that it takes about a year. Then, you got to know each other and know how they think and work. I would not relate it that much to certain jobs or professional backgrounds, but see it more on a human level” (Marlin, OT).

Those two interviewees that did not experience their team dynamics as overly positive did so due to several factors. One that was highlighted was a lack of intentionality – for successful collaboration, partners need to be intentional about and see the value in doing it, which was not the case for Jamie, who described a lack of intent from STEM partners to collaborate with them as the social scientists. Furthermore, one-sided dynamics that included an overrepresentation of STEM disciplines within the consortium were also experienced as less productive or pleasant, as the social scientists often felt like an add-on that was not considered to the extent it should have been (Alex, Jamie):

“Between the disciplines, it was definitely the case that the natural sciences strongly pushed themselves into the foreground and did not manage to convey their issues in a way that the other disciplines were able to understand it” (Alex, OT).

Another factor influencing the dynamics experienced within the team that was highlighted by all interviewees was the mode of communication. On one hand, this included the distinction between written and oral communication: While written communication can foster misunderstandings due to a lack of social dimensions such as tonality or facial expressions, oral communication can be useful to clear those up. However, an overload of meetings can lead to ‘meeting fatigue’, which is why both modes of communication are experienced as important and useful. On the other hand, interviewees highlighted the differences between online and in-person meetings. While in-person meetings are an important part of building trust within teams, building stronger interpersonal relationships and fostering creativity, one interviewee highlighted that, within teams that do not collaborate well, this perceived ‘awkwardness’ gets even stronger when partners meet in person. Online meetings, however, are useful and productive once initial trust and understanding between partners has already been built,

as some aspects of communication such as posture and sometimes also facial expressions are not conveyed as well that way.

6.2.3 Summary

In this section, I explored how languages and team dynamics play out in practice in EU projects. All interviewees agreed that a lingua franca, particularly English, is necessary and unavoidable when working across multiple languages, and that a truly multilingual work environment in which several languages are used equally is hard to imagine. On a disciplinary level, the terminology used gets toned down when communicating within inter-, and particularly transdisciplinary consortia to account for the different knowledges people bring into the project and facilitate mutual understanding. The team dynamics that emerge in such projects can differ greatly from project to project, as they depend on a lot of factors – first and foremost the trust created among partners.

Thus, getting to know who you are working with and creating a common work environment is a process which takes time and is necessary before the ‘actual work’ can commence. Just like in any other social situation, a unique language and way of working is created anew in every project. In the next section, I will explore what this combination of diverse linguistic and disciplinary backgrounds means for the projects’ implementation.

6.3 Implications of the form of collaboration

Having gathered an initial overview of what international, inter- or transdisciplinary research can look like in practice, this section will look further into the implications of these settings on the collaboration dynamics and research that is being conducted. Thus, I will look both into the implications of inter- and transdisciplinarity, as well as the consequences of using a lingua franca, and how such diversity in teams can impact the work that is being conducted.

6.3.1 Implications of a lingua franca

Although viewed as a standard component in large-scale collaboration, all interviewees were highly reflective on the impacts that the use of a lingua franca has on them, the work conducted, and the dynamics at play. A lot of these stem from the fact that, while all partners in such projects are able to speak and understand English to a certain level, the exact skills often vary.

Although all interviewees agreed that this uneven proficiency usually does not greatly affect collaboration at large, they did bring up certain individual instances in which language skills can be related to ex-/inclusion and power. Especially when it comes to conversational power, particularly in online discussions where gestures and body language are conveyed less, interviewees highlighted that

those with less English skills were at a disadvantage, sometimes causing them to withdraw from discussions altogether:

"I think this is a great power tool, when you are able to talk a lot and talk loudly, and repeatedly add your comments, you are able to influence the [talking] time of other people greatly, and that's also a big power play. So, yes, it's definitely the case that when people have an easier time with the language, with English, then they can give their feedback much more easily or express themselves when they are against something. When someone is not that comfortable in the language, they might rather stay quiet in the meeting, think about it, write it per email, and that does play a big role, I think. So also the language skills, how good those are, and it's easier to express yourself in writing than verbally, but if you're very outspoken, you also have more power" (Alex, OT).

This quote highlights that, while language can play a big part in power dynamics within teams, personality is an aspect that also greatly influences them, which I will come back to in section 6.6.2.

Furthermore, as English is typically not the first language of most people participating in the project, instances occur where one word is interpreted in different ways, and people are not aware of the fact that multiple meanings are possible:

"We had that, for example, in [a project], the Israelis said that they were doing [...] a bi-weekly meeting. And I thought that meant it would take place every 14 days. But they said no, no, it is not taking place every 14 days. They defined it differently somehow. And I thought, what, that is not the case. I was completely confused. And then I looked it up and there is actually an option to understand it differently. [...] I was not aware of that at all. And they used it, let's say, I don't know, maybe 5% of people use it that way. And that's how they used it. And that confused me" (Taylor, OT).

Several interviewees also highlighted that the language they use is strongly connected to their way of thinking (Marlin, Noah, Sasha). As such, the use of a lingua franca can either facilitate or complicate their ability to explain certain issues or concepts, depending on the language in which they are most familiar with the topic. For those that are easier explained in their L1, interviewees noticed a loss of nuances when translating concepts into English, as it forces them to simplify their language to convey certain issues:

"When I think in English or when I think in German or when I think in Italian, I think differently. And also when I'm writing. Writing in English was a nice challenge to simplify the way of thinking. And when you read a translation from German into English, it's terrible. You have to think in the other language in order to make it understandable. And Italian is similar to German. You have these dependent sentences with nested stuff. It's very complex. In English, you cannot do it. Sentences have been two lines. It's too much already. While in Italian and German, you have four or five lines,

seven lines of text. And it's too long. So I think it very much influences. And I think you might lose nuances, but you gain in clarity. It's a trade-off. I think if you simplify in a good way, which is very challenging to have a simplified way of communicating complex stuff, I think that's the best option" (Noah).

Another observation made by two interviewees was the linking of a lingua franca to their professional life, as opposed to their personal one. As English is the main institutional language in EU projects, interviewees observed a distancing to what is being said, as well as a lack of reflexivity. This includes, for example, the assumption that people would question their critique more if they had to convey it in their first language. Furthermore, the interviewee said that working in a language other than their L1 creates a distance to what is being said, which, in their perception, makes it easier to push tasks away from themselves or detach themselves from their work:

"When you can say something in your second language, it creates a lot more distance. And you distance the work from yourself as a person. This is something that you can separate much clearer, okay, this is the work context and not my personal context anymore" (Alex, OT).

Additionally, impacts of the lingua franca on a social level were observed by several interviewees. Social communication, such as small talk or the formation of interpersonal relationships, was perceived as harder in English than peoples' L1, also due to the feeling that expressing themselves comes less naturally, and getting the tone right in a language that is not their first is harder. Furthermore, several interviewees observed a formation of subgroups according to L1s within projects.

The perception of social communication as harder in English than the interviewees' L1 also led to that person feeling especially drained by conflicts within the consortium:

"I would personally say that it was very draining and unnerving, specifically such conflicts, where I am sure that I did not convey it in English like I would have in German, and it came across wrong in English. I found that very burdensome and it really, yes, it really cost a lot of energy. And it is especially hard that once you have said the words, you can't take them back, and especially in such a stressful situation, it can be much more difficult to express yourself in a foreign language" (Alex, OT).

Summarising this exploration of the impacts of a lingua franca on collaborative research, I refer to one interviewee, who summarised it as follows: while the use of a lingua franca is, of course, challenging for communication, it is also part of the point of working internationally in EU projects. While communication would be much easier if everyone spoke the same language perfectly, this is not possible within such projects. Linguistic diversity is a given, and the fact that a lingua franca has to be agreed upon is neither good nor bad – it is simply how it works, and comes with its own rewards:

"I think that communication would probably be quicker if all of Europe spoke the same language. But that challenge is the whole point. The whole EU programme follows the aim of

getting to know each other, exchanging and understanding. So I think, even if you have to put in the time, what you get in return is of much bigger value. [...] That EU openness” (Billie, OT).

6.3.2 Implications of working in diverse teams

So far, this section mainly went into challenges that emerge in diverse teams. However, while not as prevalent, all interviewees also made a point of stressing that disciplinary and linguistic diversity also brings great benefit to the project as a whole, as well as the people working on it. On an individual level, working on a diverse range of projects with a diverse range of partners facilitates a continuous immersion in new topics outside of their social science background, breaking out of routines and learning about new perspectives. Furthermore, all partners of inter-/transdisciplinary, international projects are able to gain experience in new methodological approaches and get to know about other cultures of knowledge production. This can enable them to have a different view on their own work, not always taking what they know for granted, both in terms of knowledge and methods. On a project level, collaboration of partners with different competences enables a building of trust in the work of others, leading to fruitful collaboration. One interviewee also highlighted the necessity of diversity in today’s research in order to achieve meaningful societal impact:

“Transdisciplinary research aims to contribute to problem solving, or at least to working on those problems, and then I have to say, yes, we need that, and not solely disciplinary research. That one might be very innovative and invent something, yes, that is okay, but even that new invention or that new patent has to be embedded somehow, because it can also have societal implications. And that is why I would dream of only doing that kind of research anymore” (Sasha, OT).

6.3.3 Summary

As I laid out in this section, the use of a lingua franca comes with its implications for a project’s implementation. While generally seen as a given and the standard way of working for people regularly involved in EU projects, it nonetheless creates challenges, mainly stemming from the fact that English is not the first language of most people involved. However, while these challenges might not emerge (to such an extent) if all participants were able to speak their L1, all interviewees also highlighted that this is not a possible work environment in this field. Thus, challenges coming with a lingua franca have become part of their normal way of working. Even more, also looking at the diversity of disciplinary backgrounds coming together, the overall conclusion of interviewees was that such diversity enhances work more than it hinders it, highlighting the value of international, inter-/transdisciplinary research. Nonetheless, the fact that especially the disciplinary language used has been internalised after working in a certain field for a while, in combination with the use of a lingua franca, can lead to communication

barriers, especially at the beginning of a project. Interviewees thus highlighted the need for creating a common vocabulary and synchronising the understanding of the work conducted in the project. The next section will dive into the conceptualisation of such gaps between understandings of different partners, and how such boundaries can be bridged.

6.4 Creating spaces and bridging boundaries

To understand how collaboration is perceived, I looked into whether and how my interviewees, implicitly or explicitly, constructed boundaries between different entities. This included boundaries between disciplines, but also between different linguistic groups. I then explored which strategies were used to bridge or even deconstruct them, and how translation across such boundaries looked like in the different projects.

6.4.1 Drawing boundaries

First, I was interested in whether and how interviewees perceived boundaries between different linguistic groups participating in their projects. Here, the lingua franca of science, English, already eliminates a lot of boundaries, as it offers an easy way out of the individual spaces that would otherwise be created through the use of different languages. The only two situations reported by interviewees in which such separated spaces are created in a project context both rely on a physical setting. On the one hand, within a consortium, physical separation by language particularly happens in social settings, e.g., at dinner after a meeting, where individuals may be more comfortable talking to people in their L1 and thus group together according to that. On the other hand, one interviewee highlighted the boundaries between languages that become visible when conducting stakeholder events in local, naturally multilingual contexts, such as countries with several official languages. In those contexts, one lingua franca, be it English or a different one, may not work for everyone present, thus creating visible boundaries between those able to understand everything, and those that are not.

Next to language-related boundaries, I looked for boundaries drawn between different disciplinary groups within the project and identified the factors based on which they were perceived.

The most common distinction made by interviewees when it comes to disciplines is that between natural and social sciences. The strongest aspect in which this distinction was made visible by interviewees was that of methodology and knowledge creation, not necessarily the content produced:

“It is often the case that natural scientists tend to distance themselves from topics that are typically considered social sciences, which they simply do not consider important. When it comes to things like informed consent or surveys or things like that, they often simply don't

consider them important or perhaps, in their view, not as scientific or not as scientific as their natural sciences when it comes to data and so on” (Alex, OT).

“In my long experience, it is the biggest challenge between social and natural sciences, because there is much translation work to be done. The approaches are sometimes fundamentally different, so in the social sciences, where I work, social sciences tend to be critical, reflective, cautious, not in the sense of being overly cautious, but in the sense of not making statements too quickly, not always quantifying everything, and also to work with critical theories, at least in my case, which are epistemologically more in the realm of social constructivism, and then I might work with a natural scientist who is a positivist, who is perhaps conducting some kind of habitat survey, counting and classifying insects, and building that bridge is a big challenge, but I've been used to it for many years now and consider it extremely beneficial” (Sasha, OT).

The other explicit distinction that interviewees brought up was that of academia versus practitioners in transdisciplinary work. Here, too, the distinction was mainly based on methodology and workflows, but also on language and technical terms that may not be as easily understandable to practitioners and require translation.

Apart from these specific distinctions, all interviewees perceived boundaries between different disciplinary groups in different ways. Factors that led to these boundaries included different epistemic cultures and different competence languages, i.e., different ways of doing things that needed to be aligned, as well as different technical languages that were not always compatible. Furthermore, interviewees highlighted different disciplinary traditions that became apparent when collaborating interdisciplinarily. Lastly, distinctions were highlighted based on concepts having different definitions in different disciplines, and the need of alignment of those, something that I will dive into more deeply in section 6.5.

In talking about those perceived boundaries, all interviewees highlighted the difficulties that can emerge when having to work and collaborate across them. Here, I also want to highlight that those interviewees that reported on generally bad or unproductive collaboration dynamics within their projects also drew greater boundaries – particularly between them as social scientists and partners from life sciences – and described them as harder or even impossible to cross, while those interviewees that generally perceived collaboration in their projects as productive and smooth did highlight some boundaries, but also remarked that those were able to be crossed or deconstructed rather easily over the course of the project. In the next section, I will dive into strategies that were helpful in doing so.

6.4.2 Enabling cross-boundary communication

Having explored the boundaries perceived in international, inter-/transdisciplinary projects, this section will now compile strategies and tools that interviewees have experienced as useful in working across them.

All interviewees emphasised the importance of regular meetings, online as well as physical, to enable smooth communication and collaboration among partners. Particularly an in-person kick-off meeting at the beginning of the project was highlighted as an important part of ensuring good collaboration. Here, a particular emphasis was put on social gatherings alongside project meetings, such as coffee breaks, dinners or fun activities:

“We should never underestimate the importance of having a coffee together, sit side by side at the dinner, and solving the problem just like that” (Noah).

Both at such in-person meetings as well as when resolving conflicts or working on common tasks throughout the project, interviewees mentioned the importance of working in small groups in order to align perspectives and create productive outcomes, before taking them to the larger consortium.

When tackling conflicts or resolving misunderstandings, the role of a project manager, work package lead or task lead becomes particularly important. Within this role fall tasks such as time management, defining concrete tasks for partners, and ensuring that the work is on track. Such a role needs pre-defined resources and commitments:

“So, for me, a tool would be this interdisciplinary and transdisciplinary manager, which is what I am in most cases when I am in charge of a project, and that is also my job, and it has to be considered with dedicated resources, so that is the person who does this work, who does not do everything, but brings these things together, or at least tries to bring them together. This is not just project management, like we are coordinating that we have to write a deliverable, but they always have to make sure that - yesterday in a stakeholder workshop, I compared myself to the role of a kindergarten teacher, who is always looking for the individual sheep or children, which is a bit top-down now, but keeps them on track, yes, so that, yes, otherwise we can't go on an outing as a kindergarten” (Sasha, OT).

Within such a role, interviewees outlined several strategies they find useful when aligning perspectives or partners. These include the creation of written definitions for key project terms, as well as the use of visualisations, synonyms, examples and comparisons when explaining terms and tasks across disciplines:

“Comparisons were definitely very important. For me it was also important to somewhat understand both perspectives and then also explain, okay, I understand why that is important to you” (Alex, OT).

Next to all these strategies that interviewees highlighted as useful, there was an overall agreement that the most important aspect in enabling communication in projects is time. Aligning different types of backgrounds, different expectations and different tasks takes time and is a process that cannot be rushed – something which I will get back to in section 6.5.

Apart from strategies, I also asked my interviewees whether any specific tools are or would be helpful in enabling cross-disciplinary, multilingual collaboration. While roughly half of the interview participants said that they could not think of a tool that would solve the issues they experience, the only desired technical solution mentioned by the other half was AI-enabled simultaneous translation:

“Sometimes I feel like simultaneous translation would be nice. When you can simply say something into a microphone or even if there was an automatic translation tool on Zoom, you simply say it in German, and it translates it to another language. And I think it would be good if there was a small delay while the translation is running, because that would enable you to think about what was said again and whether it is getting across right, when you hear the translation, and you can intervene in time and have some time to think. I would like such a tool, also at in-person meetings, if there was simultaneous translation” (Alex, OT).

However, within the same breath as mentioning it as a potentially useful tool, several interviewees also pointed out which new challenges simultaneous translation could create. On an individual level, this included a lack of progress in learning a language when not being forced to use it. One interviewee also mentioned that, while potentially being useful to people who do not speak English as well, it would drive them personally crazy to hear people talk in their mother tongue while simultaneously receiving a translated version through headphones. On a more general level, another reason named for tools not being useful is that, especially in the case of AI tools, they cannot replicate the social dimensions of collaboration, which are an inherent part of the whole picture:

“I currently have no demand where I could say, that would be an ideal tool, because I am not missing anything and because I think that a whole lot happens on a relationship level, and for that I cannot imagine any tool” (Taylor, OT).

Whether it be through certain strategies or with the use of technical tools, the overall intent to cross disciplinary and linguistic boundaries was described as desirable by all interviewees, following the aim of creating a space within the project where people can productively collaborate, while also learning with and from each other. Building such a space takes time, intent and trust, but, according to the interviewees, is one of the most valuable outcomes of such projects.

6.4.3 Translating across boundaries

A big part of bridging boundaries that was only touched upon in the previous section is that of translation, a major aspect which I thus dedicate this separate section to.

Interviewees agreed that translation is a necessary and important aspect in multilingual projects. As was explored in the previous section, Artificial Intelligence could be a useful tool in aiding this process, but is not quite there yet, as it is not always able to convey meanings precisely enough:

“Often, automatic translation was not an option, as the meaning was lost. Often, the meaning in German was different. It sounded really strange. Sometimes, subjects or pronouns or really important words were left out, that the AI system did not translate properly, and did not get across with the right tonality” (Alex, OT).

Thus, people usually default to translation by colleagues whenever needed. Two specific examples were mentioned here: on one hand, interviewees experienced younger colleagues translating for more senior staff whose English skills was not as good. On the other hand, in transdisciplinary projects, one interviewee pointed out that when English skills among local practitioners were lacking, the research partners from the area translated between them and the rest of the team.

When translating key concepts of one’s academic work, language is only one part of the challenge. Interviewees pointed out the difficulties that come with translating technical terms from English to German in particular, which was perceived as especially difficult for terms unique to EU projects. While such terms may have an official translation, conveying the exact meaning and idea behind a concept is still hard and a translation often does not sound quite right. Thus – something I also observed within the language used in the interviews themselves – terms are sometimes simply left in the language they have been acquired in, even when talking in a different one:

“With [partners who know German], we often talk using classic ‘Denglish’, where you simply use the technical terms in English to not have to make an effort, so to say. Because it is simpler and comes more naturally” (Marlin, OT).

An additional challenge with the translation of concepts in such projects comes from the interdisciplinary backgrounds of partners. Interviewees shared how, depending on someone’s disciplinary background, they may have entirely different conceptions of one and the same term, a fact that you sometimes only become aware of when issues arise because of it. Lastly, when working in fields outside of their usual social science realm, one interviewee shared that familiarity with a concept – particularly those of life sciences – does not necessarily equal a correct understanding of everything behind it:

“The example I mentioned before about the climate change and air quality, that for us was quite, well, it was a briefing we had to get from the hard sciences. And of course, in the social sciences, you might say they are rather equivalent in the sense that, yes, they both pertain environmental issues, they are functionally equivalent, so to say, in terms of implications, normativity behind the decisions, policies, et cetera. But from a scientific point of view, very different, of course. So, we needed a translation from that point. What does it mean exactly?”

But this was because the project had a high degree of technicalities as a content [...]. So, the more technical it is, I think, the more translation it requires” (Noah).

Translation of concepts is thus a process that can face a variety of challenges and needs epistemic work, intent and dedication – this was particularly observable in the interviews with people who perceived their collaboration as rather challenging. In both these cases, interviewees also specifically reported a lack of intent and dedication to translate between disciplines and understand the perspectives of partners (Alex, Jamie).

When working interdisciplinarily, not only do concepts need to be aligned, but also methodologically, partners need to understand each other and know how to collaborate. Such translation of different methodological approaches has also been described as challenging by interviewees. This included, on the one hand, a translation between the meaningfulness, aims and reliability of quantitative versus qualitative approaches, but also between approaches used in natural versus social sciences.

6.4.4 Summary

In this section, I looked into boundaries that interviewees perceived or constructed in the context of their projects. While boundaries did emerge over the course of the interviews, more so between disciplines than languages, those within consortia were typically not portrayed as particularly strong. Additionally, boundaries were also drawn around the project as a whole space, rather than separating it into smaller ones. This creation of one common space was constructed as the desirable output within a collaborative project, where initial boundaries need to be overcome before proper collaboration can commence. A collaboration across boundaries thus typically involves their deconstruction rather than a communication between different spaces, which is being done by, e.g., agreeing on one common language that everyone is ideally equally comfortable with. When such deconstruction of boundaries is not possible, translation is one strategy used for cross-boundary communication. One part of creating a productive space for collaboration is agreeing on a common vocabulary as well as common aims, which the next section will dive into.

6.5 Defining a common ground

As the previous section already introduced, the creation of a common ground is a crucial part of a successful collaboration between partners from different backgrounds. This includes the creation of a common vocabulary, as well as a clear definition of the project's aims.

6.5.1 Creating a common vocabulary

All interviewees highlighted that agreeing on core definitions is a key part of any international, inter-/transdisciplinary research project. Ideally, this agreement should happen at the very start of the

project, if not already during the proposal stage. For projects in which this was not the case, interviewees reported big hurdles, conflicts and unclarities that took a lot of time and resources to overcome later in the project.

When concepts are already defined in a project's proposal, this happens, as interviewees highlighted, usually not with inputs from all partners:

"It is often the case that you develop these concepts in the project proposal, where there is usually a lead partner who also has a lead in this. I have rarely seen this happen in a very collaborative manner. No, I haven't actually experienced it. Sometimes you could contribute more or less, but usually the lead partner is really the organisation that says, I'll write this thing down and I need input from you here and input from you there, and otherwise we can discuss what we want to do, but basically someone writes it down and then you usually already have concepts" (Taylor, OT).

Here, the importance of continuing collaboration and follow-up projects was also brought up: If partners have worked together previously, proposals typically get more coherent as partners are more actively involved in the process.

While this first definition of both concepts and aims already exists in proposals, due to their restricted length as well as time constraints and difficulties in long-term planning it is usual for things to remain unclear and for the final project to deviate from the proposal to a certain extent. This vagueness inherent to proposals has been predominantly described as helpful and beneficial by interviewees, as it provides the necessary space for adjustments that inevitable arise during the project. Only one interviewee specifically highlighted the vagueness of their proposal as a direct weak point of the project, as the EC interpreted it differently than the consortium, which led to both project-internal conflicts as well as such between the project and the Commission.

Due to this vagueness, a definition of concepts is always a necessary first step in a new project, even if a first draft already exists within the proposal. As with the proposal, it is normal that not all partners are involved equally in this process. Usually, the person or organisation responsible for the task or work package in which definitions are required takes over the lead for this process and guides it from smaller discussions to an agreement on project level:

"I think there already is a general understanding in the proposal, otherwise it would not really work then. If done well, it is done at the beginning of the project, a discussion of the core concepts and saying, we understand it like this in the project. And often, not everyone contributes equally to such a concept. There is a work package, where a concept needs to be implemented, and then there is the project coordinator, the task lead and the work package lead, and whoever is responsible then says, we want to do it like that, and then there are partners that contribute. They should agree, so if one of them says, I see that completely

differently, then there is a need to talk, but if they agree, they present it to the others [...]. It all needs resources, so if I then start opening a can of worms and discussing things, it drains the personal costs and you need to be able to afford that, let's say, some things you just take as they are. Or you contribute in time and say, maybe we could twist it a bit and also include this with this definition" (Taylor, OT).

As mentioned in this quote, defining concepts not only takes time, but also the financial resources associated with it. Thus, whether and how much time is dedicated to such a process is something that is determined by various factors and is often decided on a case basis.

When creating a common vocabulary, interviewees reported this as being a largely discipline-driven process, in which the language spoken by project partners – excluding disciplinary languages here – did not matter for the most part. As disciplinary knowledge and background are typically the greatest determinant for who contributes to definitions to what extent, the involvement of practitioners, as opposed to academic partners, greatly varied in interviewees' experiences. While in some projects, they did not feel responsible and withdrew from such discussions completely, other interviewees reported a great and constant exchange with such partners, and sometimes even external stakeholders, throughout the process:

"The definition additionally came from workshops where residents from the region were involved, who validated and feedbacked it [...]. That was actually a definition created by three different disciplines and a practice partner, as we called it" (Billie, OT).

Various strategies were used to create and consolidate a common vocabulary. The one perceived as the most productive among interviewees were (small group) discussions among partners, particularly at in-person meetings. To enable this process, several interviewees talked about a compilation of existing definitions from literature to get an idea of possible paths, and agreeing on a project-internal working definition based on those – typically a compromise. As a crucial aspect of this process, one interviewee mentioned the importance of curiosity and willingness to learn:

"I mean, there are always technical terms you have to learn for each field, and then it depends on whether or not you already know them. But even there I think, the most important thing is to ask questions and seeing that you understand the answers. Even if you have to ask again and again until you get it. I think, it is an important part of EU projects, to not get tired of asking questions" (Billie, OT).

Despite these typically successful strategies, interviewees reported on a range of hurdles that can occur along this process. As an inter-/transdisciplinary project brings together partners from different fields and with different sub-aims and tasks during the project, expectations and needs for one and the same definition can differ greatly. This can make the process of finding one overarching definition for a

concept that works for everyone quite hard – for example, an interviewee talked about the need for a clear definition of a concept that will work both in academic research as well as the development of a technical solution, which they experienced as an almost impossible process, especially as compromising on such a definition is not always possible. Along the same lines, another interviewee talked about the issue of bridging the gap between an academically precise definition and one that is understandable and conceivable by partners outside of that specific field:

“I think there were quite some misunderstandings in the beginning, because we as social scientists immediately found definitions of what [a natural science concept] means. For us, it was much easier to define it for our purpose, while it was much more difficult to define it, as there is a much bigger range of what it can mean when you actually come from [the field]. Because there, [the concept] is not a uniform term” (Alex, OT).

Furthermore, the different institutionalised disciplinary languages of partners can complicate this process. This already starts when it comes to expressing the need for a definition and requirements it needs to fulfil. One interviewee reported their experience with partners having difficulties expressing discontent with a definition, and ensuring that everyone understands why one definition might not work for someone working in a different context. Additionally, one and the same term can be used in vastly different ways by different disciplines, as this interviewee explained:

“Some words can mean different things in different fields. Everyone uses their lingo, their technical terms, that are deeply internalised in every person, deeply institutionalised. Sometimes, you are not really aware of the fact that it is not such a common term, and that it potentially is not understood as well by others. And that overlaps with the fact that it happens in a foreign language for most people. That is a big barrier. That is why this process takes quite long” (Marlin, OT).

As illustrated by this quote, during the process of creating definitions, the overlap of diverse disciplinary and language backgrounds of partners becomes particularly visible and obstructive. Several interviewees experienced difficulties arising from different meanings of a definition in different languages, where even direct translations convey different meanings, e.g., in terms of the scope of a concept.

To tackle such hurdles as or before they arrive, interviewees again stressed the importance of regular meetings to discuss unclarities, with face-to-face meetings being particularly crucial. This became particularly apparent during the pandemic, when travelling for meetings was not possible anymore:

“And one of the projects I was mentioned, the one [...] which started just before the pandemic, that project had a lot of problems, and why? Because of communication, because we had to move everything online, and by moving everything online we were not able to solve these small communication issues. When we started to meet again after the pandemic, almost the last six

months of the project, things started to work much better. So the face-to-face meetings were really very important for this purpose” (Noah).

Producing a written glossary as the product of such discussions about definitions was found to be useful. Furthermore, interviewees stressed the need of explicitly defining what does or does not fall under the definition created for the project.

As with all forms of collaboration, flexibility and compromising are key to finding a solution to issues in large-scale projects. This includes an understanding among all partners that any definition created for project work does not have to, and often cannot, be a conclusive definition for all of the field to work with, but only has to work for the purpose it was created for. Within such flexibility and the ability to compromise lies its own value, as this interviewee described:

“So, from that point of view, it's not always easy, and it requires some degree of flexibility of the scholars involved. Because you have to say, ah, yes, my disciplinary perspective is this, but I understand that your understanding is very different, etc. What are the common elements? Why is it different for you or for me? Can we find a common ground? So, it's a dialogue. But the value added of this is that it challenges you also within your discipline. So, you cannot take it for granted because it's different. So, you become more aware of what you took for granted if they ask questions that you take for granted” (Noah).

Such flexibility is not just relevant in creating a common vocabulary, but also when defining the project's aims, which I will describe in the next section.

6.5.2 Defining the project's aims

Not only do core concepts need to be defined within a project, but the alignment of aims between partners is also an essential part of setting the scene for smooth collaboration. As with key definitions, aims are not built from zero when starting a project. Interviewees described the process as a re-definition and clarification of those aims defined within the proposal and grant preparation stage in the Description of Action (DoA). While, during this stage, the project's core aims need to be listed and the path towards their achievement outlined, the document only allows for a certain level of detail due to page limits. Furthermore, as projects typically span over several years, long-term planning cannot always be precise enough. Thus, project aims are likely to be interpreted differently by partners, also according to different interests and expertise, which is why an agreement on aims and processes is a necessary step, even when the project has already started:

“I mean, there are specific aims, there are specific processes that are clearly defined, but for a three to four year long project, with one year of planning before, so four, five years, you can't define when which steps will make sense, that does not work. That means you can paint the big

picture, but the individual parts need to be filled later. There is a bit of free space, and that is necessary” (Billie, OT).

The first phase of a project is thus often characterised by a re-definition of aims from the DoA, sometimes also aiming for an enhancement of meaning and achieving actual, on-the-ground impact, instead of simply “ticking boxes” (Taylor, OT) when an aim that has been defined on paper has been achieved.

All interviewees thus agreed that ultimately, the aims that are worked on will be in line with, but not exactly equal to, those defined in the DoA. One interviewee talked about their experience with a project they coordinated. Within the project, some things played out differently than imaged when writing the proposal – they learned more about regional contexts, understood what was important, and what might not be as necessary as initially imagined. This shift in priorities was described as a normal process and one in which the vagueness and lack of detail included in a proposal came in handy, as it allowed them to re-interpret the project to a certain extent in order to adapt it to experiences in the field.

How these aims are interpreted and actions towards them are implemented also depends on the resources allocated to the respective work, as this interviewee described:

“I think there can be a differing understanding, depending on how the project is perceived by the individual organisations, if it is an important one or not, if for them it is a big or rather small project. It also depends on whether the topic is central to you or you just happened to join in and now just have it running on the side. And also on an individual level, can they really commit to it or do they have too many other responsibilities and not much time for it and put it on the back burner. Those are also things that might change throughout the project” (Taylor, OT).

When going through this process of aligning aims among partners and agreeing on a common goal and its scope, communication is key. As with the creation of definitions, dedicated workshop sessions at the project’s kick-off were perceived as especially useful by interviewees, as were continuous feedback loops between partners throughout the project. However, like definitions, aims also often have to be a compromise between the desires of different partners, which can be determined by hierarchies and who has the power and language to speak up:

“But sometimes it's also about who prevails, right? I see this in EU projects too. People want to push through their theoretical perspective or conceptual framework because they have more experience with it or believe it to be better or more appropriate for the empirical case. So sometimes it's also about power, yes, but otherwise it's still something where you say, okay, what fits better from your perspective, and then we try to let the more reasonable arguments count in the spirit of a Habermasian discourse” (Sasha, OT).

In extreme cases, there may even not be a common aim at all when alignment between social and life sciences is not possible – agreeing on this may also be part of the process. As Jamie described, their project ran in two separate streams with two separate objectives, with themselves as the social scientists conducting their work completely independently of the other partners:

“I had no intention of influencing this project because I knew it was impossible. I look at this as a fantastic opportunity [...]. And so, I have my research project. They have their research project. They'll [do their work]. I don't care” (Jamie).

As outlined, planning a full project several years in advance, as it is standard in EU-funded projects, comes with a certain level of uncertainty and flexibility regarding specific aims and actions. Thus, issues regarding partners' expectations and commitments have been mentioned by several interviewees. This can include a lack of compatibility between different parts of a project that only becomes clear during its implementation. For example, one interviewee highlighted problems emerging when aligning work between (social sciences) partners working qualitatively and those (typically life science partners) working quantitatively. Here, different expectations of representativeness of the project's research needed to be discussed and aligned – while the qualitative partners did not aim for representativeness of results, but rather wanted to conduct in-depth case studies, the aims of those working quantitatively were not initially aligned with this approach, which posed a hurdle during the implementation that needed to be overcome.

Another issue highlighted by interviewees was one that did not just stem from the consortium itself, but also included the European Commission as the funding agency. Here, interviewees reported difficulties in aligning their research interests and aims with the outcomes desired by the commission. One interviewee specifically talked about a great misunderstanding during this alignment:

“Even from the EU, from the funding authority, I felt like, [clarity] was greatly missing. Even there, there was a huge misunderstanding when it came to what was asked for in the call text and what we understood when reading the call. There were even misunderstandings regarding how they interpreted our proposal. And those were all things that would have been needed to be defined in writing, and maybe also addressed during the review meeting, the first one, so everyone is on the same page here” (Alex, OT).

Lastly, while most interviewees did not view the lingua franca as an influencing component during the process of aligning aims, one person did mention that to them, clear communication about the sub-aims of the project and objectives of partners would have been easier had they been able to do it in their L1. Having to use English to communicate, they felt like they were missing the right terms and phrasing to clearly explain unclarities to partners, which to them posed an additional hurdle in aligning aims and expectations.

When it comes to resolving such misunderstandings and enabling clear communication about a project's aims, interviewees highlighted several strategies used to facilitate this process. Firstly, the matter of responsibility was brought up. According to Taylor, whether or not you initiate a discussion on a project's aims can depend on your position within the project:

"Well, I think that if you bring it up, it depends a bit on what role you have in the project. If I'm the coordinator, then it's something I can bring up anyway. If I'm a work package leader, I can definitely do that within the scope of my work package. If I recognise it at the project level, then I think that as a work package leader, I have the standing to say, hey, I see this and it concerns me somehow and we should talk about what's happening there, because it's a potential risk [...]. Yes, I definitely think that things need to be addressed, but it depends on how big the issue is and whether I am the third project employee of a partner and I notice it, then I can perhaps pass it on, but then it gets lost somewhere in the system. It depends a bit on the collaboration culture, how open they are to such things, how large the consortium is. If I have a consortium with 41 partners, it's different than if I have eight" (Taylor, OT).

As also highlighted within this quote, not only is resolving issues a matter of position, but also the collaboration culture within the project's consortium. Ideally, as interviewees highlighted, such culture is already cultivated during the proposal writing phase, already facilitating the creation of a coherent and implementable project. Along the same line, building a proposal upon a previous collaboration can facilitate quick and effective communication about issues:

"Sometimes there were some cases which were difficult, when the partners do not know each other before, that's a very important element. That's why these follow-up projects are important because you know how people work, you know how people tick, [...] and so everything becomes much easier, you know how, if people are reliable, and things like that" (Noah).

Strategies facilitating the process of aligning aims are similar to those used when defining a project's core concepts. Here, too, interviewees brought up the importance of regular face-to-face meetings, especially at the project's start. Furthermore, discussions in small groups were perceived as useful, as were the use of examples, particularly visual ones, to clearer communicate aims to partners from different fields.

If no agreement can be found, one interviewee mentioned strictly resorting to what was mentioned in the consortium agreement as a last resort:

"Sometimes if you don't share a vision, you have to become procedural. The consortium agreement says article 6 that things have to be done this way, okay, and then you solve it. The

consortium agreement is the very basis to solve all problems from that point of view, formalized, but in rare cases we use that” (Noah).

Overall, however, despite such hurdles and difficulties in resolving them, interviewees agreed that misunderstandings and disagreements may hinder the project in one way, but can also enhance it in another. While the process of aligning aims and agreeing on processes takes time and resources and may slow work down at first, it can foster more creative solutions and, ultimately, lead to greater impact of a project’s outcomes.

6.5.3 Summary

Summarising this section, the creation of a common ground is a necessary process in all inter- and transdisciplinary projects, but one that does need time, dedication and resources – both when it comes to defining overall aims, as well as core concepts of the project. Ideally, this process is started early on and can often build upon a first common ground created in the proposal, thus not starting entirely from zero. The later such a process happens, the bigger the hurdles become that are created due to a missing mutual understanding. To create a common ground, a variety of strategies are used. Particularly small group discussions, ideally in person, are perceived as the most useful and productive. The process of aligning aims and concepts is mainly a disciplinary one – while language differences do play their role, they are usually not as prevalent in these specific activities.

In exploring this process, interviewees also highlighted a range of other aspects at play. In the following section, I will lay out the role of institutional factors as well as the cultural and social dimension of cross-disciplinary and -language collaboration.

6.6 Other factors at play

As disciplinary and linguistic aspects do not reflect the full picture of EU project collaboration, this section will explore two further dimensions that have repeatedly been brought up by interviewees as relevant factors in the creation of a common ground. This includes, on the one hand, the role of institutions – academia and the European Commission – in shaping collaboration, as well as, on the other hand, social and cultural factors. In the interview process, it became clear that particularly those two dimensions are often inseparable from the larger interplay of disciplines and languages, which is why I am dedicating this final part of the analysis to them.

6.6.1 Institutional dimensions

Within the interviews, the role of institutional dimensions repeatedly came up. Here, the role of the European Commission as well as the required project format were mentioned as important factors in shaping collaboration and communication dynamics.

On a language level, the form of collaboration already imposes the need for a lingua franca onto any project. As one of the basic requirements for funding within Horizon Europe projects, partners from at least three different countries need to be part of the consortium. This typically already creates the need for a lingua franca among participants. Furthermore, English is the standard language used in communication with EC representatives, as well as the language used for proposals, contracts, reports and deliverables. Thus, not using English as the lingua franca in EU-funded projects is, institutionally, not a possibility:

“And then the question is, what do you do about the deliverables? In general, you have to create them in a way that someone in the Commission can read them. Technically, you can use any language, any European language, to communicate with the Commission, and they have translation services. But I am not sure, you would have to check the contracts for that. So, exactly. I am not familiar enough with the standard paragraphs to know whether that would even be a possibility according to standard contracts” (Taylor, OT).

To this end, interviewees highlighted that organisations typically only employ people for EU-funded projects whose English skills can hold up with these requirements:

“I have never experienced that much of a lack [of English skills], because I think, it is too, how should I say that, too risky for the organisation to put someone onto the project who does not speak English well enough” (Taylor, OT).

In addition to the European Commission as a major institution influencing the language used in projects, academia as a whole shapes the language of research. Interviewees mentioned that the need to publish in English in order to become successful in academia creates a space in which anyone working in research knows English well enough to participate in international projects. This point was further underlined by Noah, who highlighted that while English skills are commonly high in academia, this is not always the case for transdisciplinary partners coming from the public sector, where the institutional language is usually the one spoken in their local context:

“Usually, these partners are a bit less proficient in languages, in particular people working for administrations, public administrations. But, of course, the fact that they were participating they picked the people who knew the languages, otherwise they could not participate in the project. So, in those cases it plays a particular relevant role more than within the scientific community because within the scientific community it's settled that we need a lingua franca which allows us the communication. While for public administration, public actors, this is not so obvious even though it's increasingly relevant but not yet so established, in particular in the older generation” (Noah).

Further elaborating on the language spoken in EU projects, several interviewees highlighted specificities within English as their lingua franca. They explained that there is a certain type of English

common in such projects that is not always 'standard' or 'good' English. Characteristics of this 'EU English', as described by the interviewees, include atypical pronunciation of words that increasingly get picked up by participants over time, as well as certain phrases that are unique to a specific project or EU reporting as a whole:

"When conveying certain ideas, I realise that when translating from English to German, where we have these, let's say, this EU speak, these phrases. Or even within a certain project, where an understanding gets created and you try to convey that to the outside. That really is challenging" (Taylor, OT).

Furthermore, 'EU English' may use definitions that differ from those used in a general context, but become implicitly agreed upon within projects as a work environment. Overall, interviewees agreed that, while the English common in EU projects is often not technically 'correct' English, people increasingly, often unconsciously, adapt to it and take up its characteristics as they work in such projects.

On a more general level, projectification as such impacts what collaboration looks like in practice. Immediately when describing the disciplinary makeup of their projects, several interviewees highlighted the institutional requirements it was based upon. Here, particularly the EC's request for the participation of Social Sciences and Humanities (SSH) in STEM-related topics came up repeatedly, such as with Jamie:

"I've been approached because within the call there was a requirement for a social science partner. And because, as you know, and this is your topic also, in several of the big innovation calls or technology calls, as it is the intention of the commission to somehow integrate social sciences and humanities into STEM. This was one of such calls" (Jamie).

As with the form of collaboration, the setup of inter-/transdisciplinary research as a project defines a much wider range of aspects, all of which have been mentioned by interviewees to impact collaboration dynamics. This includes the temporal and financial resources partners are able to dedicate to the project, the scope of the work that can be carried out, as well as the hierarchies that emerge in discussions – e.g., who initiates or leads them, or who has the final say in making a decision. Furthermore, calls for proposals often already imply the need for certain kinds of partners. One interviewee highlighted that while, during the proposal phase, the leading organisation does have freedom in choosing which partners to take aboard, some specific ones are that important to the success of the proposal or final project that they are included in the consortium, even if collaboration is already perceived to not work well during the proposal phase. While they are typically, first and foremost, selected based on expertise or accreditations, several interviewees noted the importance of using the proposal preparation phase to gauge team members' personalities and styles of working.

While, if severe issues are experienced, partners can still be exchanged during this time, interviewees also brought up the fact that, regularly, those people working on proposals are not always those representing the project once it gets funded. Still, especially when acting as the coordinator, the proposal phase should already be used to foster a good working culture and create a harmonious consortium:

“It all starts with the compilation of the consortium [...]. You look, where are those that are good and important and somehow the forerunners, and know their field. That’s one thing. And then you also have the individual contact persons for the organisations, and those have to be reliable. If already during the proposal phase they are not reliable, because they do not participate in meetings, they do not send the things, they don’t listen to what you tell them. Then I have a problem with that, and once I actually said, okay, I don’t want to work with them, because with that person, it cannot work if they are already acting this way” (Taylor, OT).

In line with the need of picking the right partners, almost all interviewees brought up the importance of continuing collaboration across projects:

“That’s why these follow-up projects are important because you know how people work, you know how people tick, [...] and so everything becomes much easier, you know how, if reliable people are, and things like that” (Noah).

With all these requirements, interviewees noted unclarities in the communication from the European Commission, leading to issues and misunderstandings within the consortium as the project is carried out. This can include an unclear communication of aims and actions to be taken, as well as underdefined concepts, both of which leading to different interpretations among partners throughout the course of the project:

“And then there are those concepts coming from the policy corner. It is often incredibly hard to translate those to our scientific realities. This, for example, includes the concept of Nature-Based Solutions, which is being pushed by the European Commission, especially in the climate change adaption area, where there is no generally accepted definition. It is a term coming from strategy documents, and within the projects, you have to think about what it means exactly. And it is actually being interpreted very differently. Like one partner tells you, this is my Nature-Based Solution. And you are questioning whether it was actually meant that way” (Marlin, OT).

Lastly, one interviewee described the language used within EU communication as highly influenced by STEM disciplines, and greatly impacting the work that social scientists are able to carry out within interdisciplinary collaborations:

“There are people sitting in the rooms of the commission designing these calls. The calls are defined in STEM language. The calls are defined with a STEM epistemology and ontology in mind, with an output that is bringing... [...] [These projects] have a goal in mind. They are

techno-optimists, technofix, broadly speaking, technofix approaches. So, there is no room for reflexivity. There is no room for opening. There is no room for questioning, which is the bread and butter of a social scientist” (Jamie).

One particular institutional aspect brought up by interviewees, both in relation to the EC as a funding agency as well as academic spaces in general, was that of hierarchies. While mostly perceived as rather flat in EU projects, hierarchies were repeatedly mentioned as a relevant factor in defining dynamics that emerge during discussions. On an intra-partner level, this includes the silencing of more junior researchers among senior personnel, be it due to them not wanting or being able to contribute to a discussion, or an active exclusion of their opinion and experiences. On an inter-partner level, interviewees mentioned that typically, discussions related to concepts or aims are initiated by those partners ‘in charge’, be it a task lead, a work package lead, or the project coordinator. Those are then typically responsible for raising the issue, leading the discussion and resolving open points.

“In the Horizon [projects], it is of course the project management, so the partner institution that is in charge of the project management, that certainly has the most power, but then, if I am a work package leader, for example, I also have a certain amount of power, I must say. Yes, so things are structured that way, they also have responsibility and can also dictate certain things if it becomes controversial, for example, if a decision needs to be made and no consensus can be reached” (Sasha, OT).

This dynamic mainly becomes problematic when the lead partners themselves are cause for concerns within the consortium. Taylor talked about their experience with a project coordinator with whom collaboration and communication did not work at all:

“That was the coordinator. It did not work at all, you communicated into a black hole and suddenly, accusations came up, what you did not do. And then you say, hello, do you even read your emails? I escalated it up a step and said, this does not work, and my superior, who had the benefit of being well-connected to them and was able to communicate it at a level that would not have been the case for every project and every coordinator. So this was surely a special case, but then he said very clearly, this is how it is. And then, after some time, they actually replaced that person, because they also saw it, and we were not the only partners with issues there” (Taylor, OT).

Due to their continuing influence on collaboration dynamics, interviewees also brought up the importance of breaking existing hierarchies or not letting them emerge in the first place:

“I do think that you also have to break up hierarchies. So we have, so to say, established researchers, senior research, but also younger researchers, we have researchers with permanent contracts and people with precarious employments, we have researchers with care

responsibilities towards children or older people, and those that do not have those, and those are very, very different life worlds that come together in a project, and it is important to see, that all are well and able to articulate themselves accordingly” (Sasha, OT).

Particularly when it comes to hierarchies and power dynamics, personality and cultural upbringing can be relevant determinators as highlighted by interviewees. The next section will look into these and other related factors in more detail.

6.6.2 Cultural and social dimensions

Next to institutional dimensions, the second big additional area brought up by interviewees as having a significant impact on collaboration was that of cultural and social factors. This sub-section will thus dive into culture, personality, and other social aspects that interviewees brought up repeatedly when it comes to a project’s collaboration culture.

When it comes to the vast array of cultures present in an international research project, several interviewees noted that these cultural backgrounds, and their combination, can lead to different collaboration dynamics, impacting, e.g., behaviours, work ethics, or attitudes towards the project. Noah, for example, noted how sharing a culture positively impacts communication, while cultural differences can hinder it. Interviewees also brought up specific examples of how collaboration was impacted by different cultures, as illustrated by the following two quotes:

“I remember a project we did on the Balkans, where I also noticed differences between the individual former Yugoslavian countries [...]. The Croatians and the Serbs were completely different, attitude-wise, than for example people in Macedonia. They had such a fatalistic attitude, even though I wondered for a while whether it was due to the personality of the individuals or their socialisation, that somewhere in Macedonia, I don't know, the conditions were such that at some point we just shrugged our shoulders and said, yes, I don't know, or is it because of the individual conditions of their working environment? They came from ministries, but I don't think that was the reason, because in the other countries we also had people from ministries and it was somehow, I found it very interesting” (Taylor, OT).

“British people in projects are different than Finnish people in projects. Very different. They think different, they think different, they act different, they do stuff very differently. [...] With one exception, all UK partners were difficult to deal with. Oh, systematically. And some of them I knew. But suddenly, in a project, they become a problem. So I don't know if it's the system which makes them like that” (Noah).

Apart from such general differences attributed to different cultures and work environments, one interviewee also brought up ideological or political orientations as a key factor in collaborating with others. A more homogenous political orientation, in their experience, creates a better working

environment. They also would not want to collaborate with people with vastly different ideological principles, because:

"I only work on those research projects where I can say, okay, those are about things that interest me personally, and which I can personally endorse" (Sasha, OT).

Moving on to a more individual level, all interviewees agreed that personality plays a big role in collaboration. Specific factors and attributes named in this regard are abilities to listen, attentiveness, feelings of power and arrogance, as well as abilities to accept opinions and expertise different from the own one. Overall, as this interviewee put it, everyone agreed that:

"Some colleagues are easier to work with, like with people. We are people, so whatever we do, some are nicer and some are more difficult to interact with, some are more assertive, others are more accommodating, some are obsessed by power, others are more interactive and problem solving, oriented. So whatever they do, they will replicate their attitudes" (Noah).

Furthermore, age and experience, intertwined with one's willingness to speak up for themselves and be confident in their abilities, were brought up as impacting communication dynamics within a consortium.

To work with, and not against, all these intertwined factors, creating a feeling of trust and transparency within a consortium is crucial for a productive collaboration. In this regard, interviewees repeatedly highlighted the importance of regular in-person meetings:

"Online meetings are good for discussing things, also if the trust is already there, and face-to-face contact is incredibly important for building trust and getting to know each other and creating a common understanding and being creative. And those things have to come together somehow. But that is why, still, face-to-face meetings are incredibly important, especially to get to know each other and create trust" (Marlin, OT).

This point was illustrated by several interviewees with examples. Specifically for projects that started or were mainly carried out during the COVID-19 pandemic, interviewees noticed a significant lack in trust and increase in frictions and conflicts between partners, which were often able to be resolved easily once partners were able to meet in person again. Here, particularly, the connection between social/interpersonal issues between partners and frictions in the work within the project becomes clear.

These dimensions are further intertwined with the two aspects this thesis focuses on: languages and disciplines. Both of those were highlighted by interviewees as connected to social aspects of collaboration. Looking at language first, one interviewee emphasised that the fact that they had to work and communicate in English as their second language made it significantly harder for them to resolve interpersonal conflicts. They perceived the use of a lingua franca in the consortium as a cause

for repeated interpersonal issues due to nuances not being able to be conveyed as clearly, which in turn led to less productive and exhausting collaboration.

On a disciplinary level, some interviewees perceived a difference in connecting to people from their own field, the social sciences, versus a different one, while others did not. Those that did agreed that establishing a good relationship with partners is easier when they come from the same or a related discipline, this being even more important than speaking the same language:

“There, I think, that the discipline has even more of an impact than the language itself, I would say. Because if you have similarities in your discipline, it is much easier, even when both people are talking in a foreign language, to find common words and talk. [...] Provided that the individuals all speak English at approximately the same level, the disciplinary background is almost more important than the linguistic one” (Alex, OT).

While that is the case, this connection between disciplines and interpersonal relationships was only ever framed in a positive light. While sharing disciplinary similarities can help foster interpersonal connections, not sharing a disciplinary background was not mentioned as negatively impacting social relationships – as opposed to the language dimension. This can be seen in the following quote:

“Of course it is easier when you sit next to someone with a similar background, because you easily understand everything. But it is also so exciting to hear about other areas. So I wouldn’t see the disadvantage there. I mean, I do ask many questions. And hope for understandable explanations. And in most cases, you get them, when you ask well and often” (Billie, OT).

6.6.3 Summary

Both the importance of institutional factors as well as the role of culture, personality and interpersonal relationships have been highlighted by interviewees as important in shaping collaboration. Looking at institutions such as academia and the European Commission, it becomes clear that they shape the very makeup of every project and thus relate, to some extent, to everything about the collaboration within them. This includes the languages spoken, the diversity of disciplines, as well as access to EU projects in the first place – thus shaping who is able to participate in such collaborations. Furthermore, the projectification of research leads to the need for a new setup of collaboration within each project – something that long-term collaboration would make much easier and save time and resources that could be dedicated otherwise.

Next to institutions, cultural and social factors are also deeply intertwined with linguistic and disciplinary ones when it comes to creating a collaborative environment. When talking about languages and disciplines as determinators in the creation of a common ground, outliers to patterns due to personality were repeatedly highlighted. Thus, ultimately, the personality of individuals working on a project is a relevant factor in creating a unique collaborative environment in each project. Furthermore,

interviewees highlighted the role of interpersonal relationships in working across disciplinary and linguistic boundaries. I thus want to remain aware that, while the results I outlined in the previous sections may be true for my interviewees and their experiences, both their personalities as well as those of their partners played into it, which is why linearity and causality, as well as generalisation, cannot be assumed, which is important in interpreting the results.

6.7 Summary – the path towards mutual understanding

In concluding this empirical analysis, I want to build upon the argument that pervades the entire chapter: the collaborative spaces created in projects, the unity within a consortium, the culture in which a common ground is able to form is one of the core outcomes of every project. As such, it needs to be created anew with every new consortium and requires a significant amount of time and resources before the ‘actual’ work can commence. The process of establishing such a space involves the creation, bridging and deconstruction of a variety of boundaries, such as those between organisations, disciplines, linguistic groups, or the project as a whole. Ultimately, there is no one blueprint of this process – it can look different in every team. I did however find commonalities that appeared in all interviews, which I will now provide an overview of.

With this analysis, I aimed to get an understanding of the creation of a common ground across different disciplinary and linguistic backgrounds. When it comes to the language dimension, all projects are spaces in which multiple linguistic backgrounds come together and thus, naturally, multiple languages are always present to some extent. To work across these, English is the universally agreed upon lingua franca – working otherwise is hardly imaginable. Languages other than English are only used for smaller instances, personal discussions or local outreach activities. The differing English skills of partners do pose hurdles within the project implementation and can lead to misunderstandings or power dynamics within the consortium, but are not perceived as greatly impactful, and even less so when talking in person. Due to the different linguistic backgrounds of participants, the English spoken within projects is a unique one that comes with its own phrases, words and pronunciations that are particular to individual projects, or the EU project landscape as a whole. Overall, interviewees perceived the disciplinary diversity as more prevalent during communication than the linguistic one, as everyone who has gained access to the field has to and is able to adapt to English as the lingua franca. While linguistic differences do play a role, they often only do so in the background and are not as noticeable.

The diversity of disciplines in EU projects stems from the EC’s requirement for increasingly inter- and transdisciplinary research. Overall, interviewees agreed that collaborating with partners from different disciplines and fields outside of the social sciences enriches their work as well as its impact, and is thus valuable and important to foster. To achieve a productive inter-/transdisciplinary work environment is however a process that needs time and resources dedicated to aligning concepts and aims between

project partners. Bridging different methodologies, concepts and understandings thus needs to be accounted for when planning the timeline of a project, but is certainly possible and fruitful. As part of this process, the language formed within the project becomes a mix of disciplinary, linguistic and personal influences – on a disciplinary level, this does include a toning down of jargons, compromising on methods and aims, and finding a common ground to work upon.

Next to disciplines and languages, a scale of other aspects of collaboration was highlighted. First and foremost, this included the importance of trust within a consortium as a foundation to any form of collaborative action, as well as factors such as dedication and intent, personality, institutional dimensions, and culture.

The creation of a common ground across all these areas is a crucial output of any international, inter-/transdisciplinary project. In the next section, I will discuss the results of my empirical analysis along previous research and the theoretical background, and lay out its implications.

7. Discussion

In this chapter, I will discuss my findings in relation to my research question and defined sub-questions (see Chapter 3) by embedding them into existing literature and frameworks. I will use the theoretical lens of epistemic living spaces (Felt & Fochler, 2012) to describe the collaborative spaces research projects take place in, and the conditions by which they are shaped. I will then, using the notion of boundary work (Gieryn, 1999), look at demarcations between disciplines and languages within these spaces, and how those boundaries are crossed or re-constructed to find a common ground to work on. Lastly, I will provide an overview of those conditions that I have found to be facilitators of successful, well-working collaborative spaces within international, inter-/transdisciplinary research projects.

7.1 The ‘making of’ spaces for collaboration

In this section, I will outline and contextualise my findings regarding *SQ1*, which asked what collaborative spaces in EU-funded projects look like, and which implications their conditions have for communication and collaboration within them. I thus looked at how interviewees describe the spaces they work in, and to what extent projectification shapes these spaces. To gain a concise overview of these spaces for collaboration, in this section I will outline and embed the results of my analysis along the five dimensions of epistemic living spaces, as described by Felt & Fochler (2012): epistemic, spatial/material, temporal, symbolic, and social.

7.1.1 Epistemic – Processes of knowledge production

The first dimension I will explore is the epistemic dimension, looking at the processes of knowledge production in the spaces my interviewees work in. Within my research, this mainly concerns the disciplinary and linguistic setup that frames how knowledge is able to be produced within EU-funded projects. While, in general, I observed that these exact setups can differ greatly from project to project and have to be established and (re-)negotiated with each new collaborative environment, there are certain common factors and influences that I would like to highlight.

In all but two of the seven settings I looked at, inter- and transdisciplinary knowledge production was perceived as predominantly smooth and team dynamics as positive and productive, in the sense that there was ‘true’ collaboration happening between the different partners. In both cases where less pleasant dynamics were perceived, this was, at least partly, attributed to the treating of social sciences as an ‘add-on’ to the project by STEM partners, who were in the majority. Like Burch et al. (2023), who also discussed such experiences, I found that in these cases, the social science partners felt largely disregarded when it comes to achieving a common aim within the project, which led to less productive knowledge production processes. While this is an important finding of my study, I again want to highlight that out of seven interviewees working within similar settings, only two of them perceived

this (at least partial) exclusion of social sciences from the greater project, whereas in the majority of cases, the social science integration worked rather well.

Next, I want to look at the language dimension of knowledge production. In terms of disciplinary languages, like van Helden (2022), I also found clear distinctions between the language of social sciences and that of STEM disciplines, which at times felt hard to bridge. Van Helden (2022) explains this distinction with differences in methodology, terms and values, as well as differing speech patterns. My interviewees similarly highlighted the need to ‘tone down’ disciplinary terminologies to adapt to different knowledge backgrounds of partners, which is in line with what van Helden (2022) describes as the need to ‘sacrifice’ certain aspects of discipline-specific knowledge production, as well as the importance of taking the time to explain terms and concepts.

On a more general level, all interviewees agreed that a lingua franca is necessary to enable knowledge production in international research collaborations, and that this lingua franca is English. Like Holmes & Rajab (2022), I thus found English as rarely contested in this setting – while interviewees also agreed that English skills are never equal among partners, they did not see this as a significant disadvantage to the project or individual participants. Only in smaller group or local settings, and typically only orally, did interviewees report on local languages being used during project work, similarly to what Curry & Lillis (2024) found. In contrast to the authors, who argue that all collaboration is inherently multilingual, most interviewees did not perceive it as such due to the prevalence of English as the lingua franca. When being asked about how collaboration may work multilingually, they mostly found it rather hard to imagine. What is however agreed upon, both in literature (e.g., Amano et al., 2016) as well as among the interviewees, is that English is often not useful for the dissemination of findings, which needs to happen in local languages to best reach the targeted audiences.

Lastly, I want to briefly explore some of the standards put in place for knowledge production in international, inter-/transdisciplinary projects. As previously discussed and highlighted by Burch et al. (2023), with an overrepresentation of STEM disciplines in a project, STEM language, methodology and research set up may be viewed as the standard, while social sciences are treated as a barely necessary add-on, creating an uncomfortable environment for social scientists who may feel like they are not able to act up to their full potential. While I did observe this ‘STEM standard’ in two cases, it was not prevalent in the other five, meaning that while it can be present, it does not have to necessarily exist simply due to an overrepresentation of STEM partners within a consortium. Furthermore, the most obvious and prevalent standard in these projects is that of English as the working language. While the entry level is reported as ‘not that high’ by the interviewees, English skills are still a necessity to be able to participate, and interviewees did link language skills to power, particularly conversational power and speaking time. Interviewees further linked the use of a lingua franca to a loss in nuances, to simplification of language, and a distance to what is being said, which goes hand-in-hand with Curry &

Lillis' (2024) linking of the language used to identity. While the lingua franca is thus rarely contested, it still does affect the way knowledge is being produced along several lines.

7.1.2 Spatial/material – Arrangement of spaces for collaboration

I will now discuss the spatial and material dimensions of my interviewees' epistemic living spaces, i.e., how the spaces for collaboration are (physically) arranged. As most of their collaboration takes place online, the spaces are often rather digital than physical, which interviewees highlighted to be challenging in certain aspects, emphasising the importance of regularly meeting in person.

Thus, in terms of physical working arrangements, interviewees drew differences between online and in-person collaboration, highlighting the importance of in-person meetings to build trust, establish interpersonal relationships, and foster creativity, especially at the beginning of a project. Once this initial trust has been built, online collaboration can be productive and pleasant. Like Tenhunen-Lunkka & Honkanen (2024), all interviewees stressed trust and mutual understanding as key aspects of a successful project, something which, to a certain extent, requires physical co-presence.

Next to this immediate 'physical' setup of these projects, I also want to briefly explore their spatial dimension at large – their 'European-ness'. As interviewees also brought up when talking about the language dimension of their projects, the framework programme Horizon Europe requires them to include partners from at least three different countries, making them inherently international (European Research Executive Agency, n.d.). This international setup also impacts the kind of English spoken among partners – it adapts to the different linguistic backgrounds of partners, forming a unique 'language' for each project. Furthermore, interviewees perceived the 'European-ness' of their projects as a generally positive thing – while the given linguistic and cultural diversity comes with its challenges, it is also very rewarding and offers unique opportunities for getting to know people from a variety of backgrounds, exchanging practices, and learning from each other. Thus, the international arrangement of these projects is what makes them what they are, and, at least according to some interviewees, makes the additional efforts necessary more than worth it.

7.1.3 Temporal – Rhythms and time in projectified collaborative settings

In this section, I will explore the temporal dimension, i.e., how interviewees perceive the time and rhythm of their work and its relation to other time regimes, such as those imposed on them by institutions (Felt & Fochler, 2012).

The time in which EU-funded projects take place is inherently shaped and pre-defined by the funding scheme. As described by interviewees as well as authors such as Felt (2025), collaboration takes place in time-restricted (usually to a couple of years), pre-planned spaces, where there is often little to no place for deviations from the initial plan. With that in mind, I want to especially highlight that time for

building trust and enabling mutual understanding was stressed as a key factor for ensuring successful collaboration. Thus, while institutionally restricted, time is one of the key assets for building spaces for collaboration. Dedicated time is needed to align (disciplinary) languages between partners, get to know each other, build trust, and establish a common understanding of key terms and concepts. Interviewees as well as authors such as Marzano et al. (2006) and Cheruvelil et al. (2014) thus agreed that inter- and transdisciplinary research requires significantly more time than disciplinary work, but that the payback makes the time invested worth it. However, whether and to what extent time and resources can be invested into creating a common environment as well as the general (temporal) resources available to each partner for working on the project are entirely defined by the project framework, with little to no deviations possible.

As highlighted by Marzano et al. (2006), institutional frameworks shape the time invested into building working relationships and spaces for collaboration – the authors, however, also found funding bodies perceived as largely unwilling to pay for this time that is necessary before the ‘actual’ work can commence. While my interviewees did not share this particular perception, they did highlight the struggles that come from the necessity of planning the entire timeline of the project in advance as part of the proposal and Grant Agreement. This process was described by interviewees as often happening under stress and without the proper involvement of all partners, thus creating temporal constraints within the project due to specific actions not being able to be accounted for in advance. This restriction created by the setup of EU-projects has also been acknowledged by Felt (2025) and Büttner (2019), who highlight the challenges in planning an entire project ahead, as well as the fact that calls already restrict who is able to apply for and receive EU funding in the first place. Büttner (2019) writes about how, due to its specificities, the project timeline and work plan are often prepared by either external specialists or a few selected partners with experience in planning projects and writing grant applications. One interviewee mentioned this approach as a cause for the need to revise aims and exact tasks later in the project, once proper input from all partners can be collected.

Lastly, due to the additional (temporal) resources needed to build spaces for collaboration, interviewees stressed the importance of continuing collaboration in follow-up projects, enabling breaking out of this time-restricted framework to build more lasting relationships, which makes collaboration significantly easier and saves time and resources in the long run.

7.1.4 Symbolic – Power structures & ordering spaces for collaboration

For exploring the symbolic dimension of EU-funded research projects, I aim to describe different ways of ordering their collaborative spaces, which I will do by outlining which hierarchies were perceived by interviewees and how power is distributed among partners. In starting this chapter, it is important to mention that, in most cases – from the perspective of my interviewees as senior researchers –

hierarchies in their projects were described as mostly flat, with a generally equal recognition of all partners and the expertise and value they add to it. This, however, does not mean that no hierarchies and power structures are at play at all. As an (on several levels) institutionally governed space, various factors shape how researchers are able to work together within EU projects.

The first one I find important to discuss here is the use of English as a lingua franca. While interviewees mostly agreed that the skill level of partners does not greatly influence their collaboration, advantages coming with a stronger grasp of the language did come up, particularly in terms of taking up space in oral discussions. This observation can be connected to the bigger picture of English as a key asset for success in academia, which Law & Mol (2020) described as “publish in English or perish” (p. 266). With English having been linked to status, value, prestige and recognition in academia (Eisemon & Rabik, 1978), those with greater skills in the language will always have an advantage in the field over others, and collaborative research projects are no exception. This advantage is also visible when looking at the dynamic between partners from academia and practitioners in transdisciplinary projects. Some interviewees described observing a lack of English skills in practice partners, especially those working in local contexts, where English language skills are not as much a precondition for the job as in academia. This language gap between partners can not only impact the collaboration between academia and practice, but also knowledge transfer at large. As described by Amano et al. (2016), the predominant use of English in academia has the potential to hinder local uptake of knowledge in sectors affected by research due to a lack of English skills among people working in those contexts.

Another dynamic shaping power structures in the collaborative settings I looked at is that between social sciences and STEM disciplines. While, in most cases, no strong power dynamic was perceived between those disciplines by my interviewees, in two cases the projects seemed to be greatly shaped by it. The overrepresentation of STEM over social sciences, which already starts in calls for proposals from the side of the European Commission and is then mirrored in the composition of consortia and creation of project aims, was perceived as negatively affecting dynamics within the project by making the two interviewees, as social scientists, feel devalued and their expertise as not adequately respected. This connects to a larger problem discussed by Burch et al. (2023), who call for a change in the system which puts STEM over social sciences in inter-/transdisciplinary projects, and who propose a range of measures to ensure a proper inclusion and use of the value of social sciences in STEM-heavy projects (see section 2.2.1.1).

Power dynamics are also greatly shaped by the institutional framework the projects take place in, i.e., the funding framework programme of the European Commission. Firstly, financial resources allocated to partners, as per the Grant Agreement, can shape power dynamics in projects by enabling some partners to invest more time and effort into a project than others, giving them the resources to take up more space within a consortium. Furthermore, one interviewee described an advantage that comes

with having been part of the core group developing the project proposal, where participating partners are able to already contribute their views, methodologies and concepts over others. Furthermore, the proposal and subsequent Grant Agreement define who oversees which tasks, thus distributing power and governance to partners appointed as coordinators, work package leads or task leads. This distribution of power is inherent to and unavoidable in projects but can become problematic when those in charge are cause for concern or problems, as reported by one interviewee. I want to connect all of this to Büttner (2019), who described the creation of new hierarchies in project spaces due to an unequal distribution of expertise in writing a successful project proposal. My research showed that those hierarchies then, to some extent, persist in the project by inherently allocating more power to those in charge of creating the proposal.

The last power dynamic I observed is also one of academia at large, which is the silencing of junior researchers among senior personnel. Concerning this and all the other above-mentioned power structures, interviewees stressed the importance of breaking up existing hierarchies within project spaces and approaching each other as equal and equally valuable to the project at large.

7.1.5 Social – Bonding as a team

As the last part of this section, I want to look at the social dimension of the collaborative spaces created in EU-funded projects. Here, perceptions of interviewees of the interpersonal relationships and feelings of ‘together-ness’ created within projects differed greatly and depended on a range of factors such as available time, (disciplinary) composition of partners, and simply the individuals within a project.

As described in section 7.1.3 and highlighted by authors such as Marzano et al. (2006), creating a strong team takes time and is made significantly easier if partners have collaborated before on previous projects. Next to time, several other factors were described by interviewees as shaping the social relationships established within their projects. The use of English as a lingua franca was described as negatively impacting social interactions and relationships. Here, some interviewees find it harder to navigate social interactions in English and feel like expressing themselves in that language comes less naturally to them, which can cause subgroups to form among speakers of the same L1, among whom the feeling of togetherness is stronger. Different disciplinary backgrounds were, in contrast, not perceived as significantly impacting social relationships within projects.

In literature, several strategies are mentioned as useful for creating a strong team within international, inter-/transdisciplinary settings. These include, among others, regular (in-person) meetings and workshops, social gatherings, teamwork exercises, and field trips (Cheruvelil et al., 2017; Marzano et al, 2006). Similar strategies also came up among interviewees, with regularly meeting in person being by far the most significant and crucial one.

7.1.6 Summary

In this section, I looked at the collaborative spaces created in EU-funded projects along the five dimensions of epistemic living spaces as described by Felt & Fochler (2012). I described their epistemic, spatial/material, temporal, symbolic, and social dimensions and how those can shape collaboration. In bringing all those different aspects of a project and the space it takes place in together, it is important for me to highlight that they merely constitute a spectrum within which I observed collaboration to be located in, not an overall truth. Creating a space for collaboration is something that needs to take place anew for each new funded project and a process which can vary greatly in its length. The process is shaped by a variety of (institutional) conditions, invested resources, and power structures. Each space for collaboration is a unique outcome of its own project and greatly shapes the work that can take place within it, as I will outline in the following sections.

7.2 Finding a common ground across boundaries

In this section, I will discuss and contextualise my findings in connection to *SQ2*, in which I asked how the different disciplinary and linguistic backgrounds of partners are brought together and bridged to find a common ground for a project. To answer this sub-question, I will use the theoretical framework of boundary work (Gieryn, 1999) to look at the demarcations that researchers draw between disciplines and languages, and how those perceived boundaries are broken up in collaborative spaces. I will further look at strategies and practices used to bridge these boundaries, and use the concept of trading zones (Galison, 1999) to describe how a common ground is formed and a common space for collaboration can be created.

7.2.1 Disciplinary and linguistic boundary work

The theory of boundary work (Gieryn, 1999) has been conceptualised as a framework for looking at the social construction and transformation of boundaries between spaces, a process which is not necessarily linear and is greatly shaped by the actors involved. Using this lens, I thus looked at my findings from the interviews to learn more about the demarcations between disciplines and languages perceived by interviewees, and whether or how they change throughout the duration of a project or differ between interviewees.

How spaces for collaborations and boundaries within and around them are perceived by researchers involved in a project, and the extent to which those boundaries between partners are deconstructed as part of a collaboration, is greatly shaped by the conditions defining the project. This I aimed to outline by using the framework of epistemic living spaces (Felt & Fochler, 2012) in the previous sections. Epistemic living spaces thus directly impact the way boundary work can be done.

This becomes apparent, for example, when looking for language-related boundaries perceived by interviewees. As English is the institutionally pre-defined and largely agreed upon lingua franca of academia, interviewees hardly perceived any language boundaries. The common use of English usually eliminates the possibility for them to emerge in the first place. The only setting in which interviewees reported on the creation of distinct spaces according to languages is a physical one – only when meeting in person might people switch to using a language other than English when talking to partners who share their first language, and subgroups may form accordingly. This, however, was not reported as a very common or impactful occurrence, which makes this (lack of) language boundaries go in line with the finding by Curry & Lillis (2024), who describe English as the generally accepted and useful lingua franca. Even though multilingualism may be desired in certain situations, having a lingua franca helps to form a common working environment without creating distinctions between partners from different language backgrounds.

While this means that the different language backgrounds of partners are not strongly contributing to the formation of boundaries within spaces for collaboration, the contrary is true when looking at the role of disciplinary backgrounds. Here, multiple demarcations were made. First, some interviewees perceived great boundaries between partners coming from natural versus social sciences. In two cases specifically, what was experienced by the interviewees was what Burch et al. (2023) describe as the treating of social science partners as an institutionally required add-on to the ‘core project’ situated in the natural sciences, which leads to social science partners being disregarded or devalued completely. In those cases, interviewees described strong boundaries between methodology and processes of knowledge creation, and what is seen as scientific work. This extreme, however, was not the case for all instances where a demarcation between natural and social science partners was felt. In some cases, interviewees reported on barriers being present at the beginning of the project, but overcome throughout its duration, which I will explore more in the next sections.

The second significant disciplinary – or, in this case, rather ‘professional’ – boundary was the one perceived between partners coming from academia and practitioners in transdisciplinary projects. Here, boundaries were constructed based on differences in methodology, workflows, as well as language and technical terms. In contrast to the boundary between natural and social sciences, however, this one was typically found easier to cross or even deconstruct, among others through the work of translators. Like described by Wang et al. (2019), translators play a particularly important role in transdisciplinary projects, where they can act as a bridge between different knowledges and professions. This I will also discuss in more detail in the following section.

Next to those two specific boundaries, more general distinctions were made by interviewees between different epistemic cultures and different disciplinary languages of partners. As described by Knorr Cetina (2007), different epistemic cultures each come with their own set of practices, objects,

valuations, and norms. Naturally, those differences shape the creation of spaces for collaboration and how communication can be enabled within them. In general, however – apart from the specific case discussed above – those differences were perceived as possible to bridge within the span of a project, and this process was described by interviewees as enriching to the collaboration at large. What exactly this bridging of boundaries can look like is what I will discuss in the following section.

7.2.2 Bridging boundaries

Having discussed the most prevalent boundaries that interviewees described, I now want to explore the strategies they found helpful in crossing them. Before doing that, I want to highlight my observation that in those cases where interviewees perceived generally unproductive/unpleasant dynamics between partners, they also drew greater boundaries between themselves and, in both cases, the ‘technical/STEM partners’, and described them as more solid and harder or even impossible to cross. In the other cases, where the overall collaboration seemed to be pleasant and smooth, boundaries were observed too, as described previously, but they were found to be easier to cross or deconstruct. In this section, I want to highlight the most popular strategies for doing so and discuss why they may have been helpful.

Firstly, a range of communication practices were described as useful in bridging disciplinary as well as linguistic boundaries between partners. Here, the most important enabler of successful communication and collaboration were regular meetings, which interviewees described as highly useful in establishing a common base for communication, including a building of trust, breaking down barriers and boundaries from the very start to hinder their emergence at later points during the project. For cases in which existing boundaries, e.g., between disciplinary approaches of partners or communication barriers, needed to be crossed, strategies such as collaboration in smaller working groups, the creation of written definitions, and trying out different explanations tailored to different professional backgrounds of partners were found to be helpful. This was the case because, as opposed to solving issues on a large-scale, project level, those strategies focus on meeting partners where they are at and approaching communication on an individual scale, rather than aiming at the deconstruction of boundaries at large. Similar practices were also found in literature, e.g., by Marzano et al. (2006), Love et al. (2021), and Tenhunen-Lunkka & Honkanen (2024), who, like interviewees, emphasised the importance of time and patience in this endeavour.

Time and patience are also of particular relevance for translation, something not only needed for crossing linguistic, but also disciplinary boundaries. While linguistic translation is usually made obsolete by the use of a lingua franca, in some cases translation through colleagues with a better grasp of the English language is necessary. A much greater, and often unanticipated, part of translation in inter- and especially transdisciplinary projects is that between different terminology and ways of expression

typical for different professions or disciplines. Like described by Wang et al. (2019), interviewees also highlighted this additional skill demand for participants in such projects. Next to creating a common vocabulary and defining key project terms across disciplines, translation also needs to take place between different methodologies of partners, particularly between those of partners from the natural versus the social sciences. Interviewees found that a lack of intent and dedication to these translation efforts can negatively impact collaboration to a point where partners would rather work individually on their own subgoals than to collaborate towards a common goal. However, I want to highlight that, in such cases, this lack of intent to translate does not only come from the individuals participating in it, but is, as criticised by, Burch et al. (2023), often already written into calls for proposals, which can, in certain cases, shift the focus from rewarding purposeful collaboration between partners from different backgrounds to treating social sciences partners as merely an add-on to the core project.

In closing this section, I want to highlight that, while the successful bridging or even deconstruction of boundaries takes time and conscious effort, the outcome of this process was what my research highlights as one of the major outputs of a project – the creation of a collaborative space in which all project participants can work together on a common goal.

7.2.3 Forming common spaces for collaboration

I have now discussed the boundaries perceived by interviewees within their projects, as well as strategies used to bridge or even deconstruct them. In this section, I want to go one step further and focus on the last part of my second sub-question – how boundaries are shifted to form a space for a common ground, i.e., a trading zone as defined by Galison (1999).

Galison (1999) defined trading zones as local zones created to enable communication and translation between groups from different backgrounds. In my use of the concept, these trading zones are the spaces which researchers build to work across their disciplinary and linguistic differences on a common aim and communicate effectively. Finding a common ground, i.e., defining a project's aims and key terms and concepts, is a process which requires significant time, dedication and resources in order to be carried out successfully. Interviewees highlighted the importance of it starting as early as possible, potentially even during the proposal phase, as the later it happens, the more hurdles are created and the harder it becomes to even form this common space at all. Strategies used to define common aims and concepts are largely similar to the ones I covered in the previous section, with small group discussions and in person meetings found to be of great importance to avoid misunderstandings and communicate most effectively, similar to the findings of Tenhunen-Lunkka & Honkanen (2024). Interviewees described the process of creating a common ground as a mainly disciplinary one – language differences were not perceived very prevalently throughout it. This I find particularly interesting in the light of Lin's (2020) and Mol's (2014, 2020) arguments, who highlight the unstableness

of concepts not just across, but even within individual languages. The fact that language did not seem to play a big role in the definition of concepts in the cases I looked at may be connected to how established the use of English as a lingua franca is in the field, to the point where core concepts are even used in English when talking in other languages. Therefore, I would conclude that the language differences seem largely irrelevant in defining key terms and concepts as different languages are not typically thought of to be included in this process, as usually everyone is most familiar with the English term for the concepts. While small instances of misunderstandings due to different language backgrounds were described by interviewees, they were only viewed as minor and did not hinder the process at large.

As highlighted previously, forming a trading zone, i.e., a common space for a collaboration, takes time and effort. This becomes ever more apparent in projectified settings, where the common space for collaboration has to be built from scratch every time a new project starts. Interviewees thus emphasised the importance of follow-up projects, where significantly less efforts have to be re-invested in defining a common ground before the actual work can commence. Thus, an important impact of projectification on research collaboration that I did not find to be sufficiently highlighted in previous literature is the constant deconstruction of collaborative spaces each time a project ends, and the thereby emerging need to continuously re-construct and re-build them from scratch.

7.2.4 Summary

In this section, I aimed to discuss how the different disciplinary and linguistic backgrounds of partners in international, inter-/transdisciplinary research projects are brought together and bridged to find a common ground (SQ2).

A variety of perceived boundaries, particularly between disciplines and professions, such as social sciences and STEM, academia and practice, or generally differences in epistemic cultures, shape the collaboration within projects. In order to overcome or bridge them enough to find a common ground to work on, all partners need to be willing and able to invest efforts into doing so – if that is not the case, interviewees perceived collaboration as significantly less fruitful or smooth. I outlined different communication and translation strategies that can be useful to bridge or deconstruct disciplinary and linguistic boundaries, but what I found to be most important of all is time. As an institutionally restricted resource in research projects, time to build trust and relationships among partners is at the core of creating a working collaboration culture in which everyone feels valued and different backgrounds work together instead of against each other. In the next section, I will provide a summary and discussion of those conditions that contribute to such a culture.

7.3 Fostering successful collaboration

In this section, I aim to compile conditions that, according to my research, can foster successful international, inter-/transdisciplinary collaboration (SQ3). While, looking at existing literature, I did find certain aspects such as a commitment to translate across disciplines, professions and languages (Marzano et al., 2006; Wang et al., 2019), the creation of interpersonal relationships and the building of trust (Cheruvilil et al., 2014; Marzano et al., 2006), or respectful bridging of disciplinary differences (Burch et al., 2023; van Helden, 2022), I want to go beyond those individual factors by using this section to create a concise overview on what my interviewees require from themselves or others in order to successfully collaborate with partners from diverse backgrounds on a common aim. I will further use the concept of boundary objects (Star & Griesemer, 1989) to identify tools that may be useful when communicating or translating across different groups.

I have clustered factors and conditions mentioned by interviewees for facilitating collaboration into two categories – approaches of individual partners to the project and its members on one hand, and general project conditions or activities on the other one. The following table provides an overview of these factors and conditions, which I will then describe in further detail.

Table 3.

Factors and conditions facilitating collaboration

Approaches of project partners	General project conditions and activities
• Intentionality about and acknowledgement of value of collaboration • Interest in learning from others • Willingness to compromise on disciplinary particularities • Trust in others • Investing time to build relationships • Willingness to break up existing hierarchies • Homogenous political orientation	• Regular (oral) communication • Regular in-person meetings including social gatherings • Dedicated resources for project management • (Financial) resources to take the time to align concepts and aims • (Temporal) resources for building a collaboration culture • Follow-up projects • Clear communication about aims, actions and concepts from the European Commission

I will start with describing the former by outlining what interviewees reported on being necessary from all collaborators in order to foster a well-working collaborative environment. In such an environment, all participating partners should be intentional about the collaboration and see the value in working with others on a common aim, as well as be interested in learning from other cultures of knowledge production. To communicate and collaborate successfully, project participants should be willing to compromise on disciplinary particularities (e.g., toning down disciplinary language, compromise on methodologies, taking time to explain concepts from scratch) to create an atmosphere where all

disciplines and backgrounds as well as their contributions are respected and valued equally. My interviewees, as social scientists, emphasised this particularly in the context of being valued within STEM-heavy projects and environments – not just by other partners, but also from the side of the European Commission. Another important aspect of successful collaboration is trust in others and being able to take the time to build that trust. Partners should be willing to break up existing hierarchies – also, e.g., in terms of language skills – within and across institutions and work collaboratively on one level. Lastly, one interviewee mentioned a homogenous political orientation within a project as important for aligning societal aims and impacts.

On a project level, regular (oral) communication between partners is of high importance, as are regular in-person meetings, during which social gatherings and activities should take place alongside working sessions. In terms of resources dedicated to the project, a committed project manager who can manage and align partners and solve any arising issues is an important asset. Furthermore, interviewees highlighted the importance of (financial) resources dedicated to aligning concepts and aims at the beginning of the project, a phase which needs to be accounted for in the work plan. In line with this, time was again one of the core factors, especially time for building a trusting, transparent collaboration culture. To this end, follow-up projects are especially important for building longer-lasting relationships that facilitate collaboration. Lastly, from the side of the European Commission, interviewees highlighted the need for clear communication about aims, actions and concepts, both before as well as during the implementation of a project.

In addition to these conditions, I also asked whether any boundary objects are used to foster collaboration in these settings. Boundary objects, as defined by Star & Griesemer (1989), are objects that are part of several social worlds but flexible enough to adopt different specific meanings within them. They can thus be tools to communicate across boundaries between different groups. In addition to more abstract ‘tools’ like a dedicated project manager, one boundary object I was able to identify is the project framework in general, specifically the Description of Action (DoA), where the exact actions of the project have to be outlined before its implementation. While having different value for different partners and typically being open enough to be interpreted in different ways for specific actions, the DoA is a fixed document that stays stable throughout the whole project and has been reported by interviewees as useful in aligning concepts and aims, particularly when partners cannot come to a conclusion otherwise.

In closing this section, it is important for me to highlight that what I was able to cover within my research is only one part of what makes up a collaborative environment. While the factors and conditions I outlined in this section are an important aspect of fostering a well-working collaborative space, there is a range of other areas such as larger institutional frameworks, personality, cultural differences, and more, which were outside of the scope of my research.

7.4 Communication and collaboration in EU-funded projects

In this chapter, I outlined the findings of my research along my three sub-questions, discussing the different dimensions of spaces for collaboration, boundaries and how they are bridged to find a common ground, and which conditions can foster successful collaboration in EU-funded projects.

In my main research question for this thesis, I asked how researchers collaborate and communicate across disciplinary and linguistic boundaries in EU-funded projects (see Chapter 3). In my literature research (Chapter 2), I found various aspects contributing to the creation of collaborative spaces in these settings, such as the use of English as a lingua franca (Curry & Lillis, 2024; Fradkin, 2017; Luczaj et al., 2021) alongside the multilingual realities of international research collaboration (Curry & Lillis, 2024; Holmes & Rajab, 2022; Sivertsen, 2018), processes of translation (Lin, 2020; Mol, 2014; Mol, 2020), the alignment of methodologies and concepts across disciplines (Burch et al., 2023; Karrasch et al., 2020; van Helden, 2022), social aspects of collaboration (Love et al., 2021; Marzano et al., 2006), and the European Commission's funding programme as the institutional framework in which collaboration takes place (Bruce et al., 2004; Büttner, 2019; Felt, 2025; Tenhunen-Lunkka & Honkanen, 2024). With all these dimensions having been explored in different cases and through different lenses, in my research I aimed to capture them all within the larger picture of collaboration in seven individual settings to explore their interplay and contribution to communication and collaboration across linguistic and disciplinary boundaries.

My thesis thus looked at various dimensions shaping communication and collaboration. In terms of language(s) used to communicate, English is, as in all of academia, the generally agreed upon lingua franca, though multilingualism still greatly shapes certain aspects of the projects and how they can be carried out – neither the exclusive use of English nor a completely multilingual implementation of research projects can be imagined. Next to different language backgrounds, disciplinary differences are also omnipresent and inherently shape inter- and transdisciplinary projects. In most cases, I found a will and ability to overcome those differences to work for a common goal, a process and outcome which was said to be enriching to both the individuals working on the project as well as to the societal relevance of its outcomes. I found a range of strategies used to enable communication across disciplinary and linguistic boundaries, including but not limited to regular (in-person) meetings, toning down on disciplinary jargon, and discussions in small groups. Overall, however, the most important enabler of successful collaboration is time to build a common ground. Like all other mentioned aspects, time is shaped by the institutional framework surrounding the whole project – the European Commission. From language(s) used over the combination of disciplines to the resources available to partners, the project's framework creates the realm in which project partners are able to act and create a collaborative space. Due to projectification, these spaces typically have to be built from scratch for each collaboration. If done well, this is a time- and resource-consuming process which results in the

space being an outcome for itself – one that all partners, ideally, contribute to, but that is nonetheless never completely free of hierarchies or inequalities.

8. Conclusions

In this thesis, I explored collaboration and communication dynamics in international, inter- and transdisciplinary research environments. To close this thesis, in this chapter I will position my results in a broader societal context and discuss possibilities for further related research.

8.1 Societal relevance

As described by Büttner (2019), projectification is increasingly becoming the ‘new normal’ in academia and greatly shapes the working realities of researchers globally. With this increasing projectification, new standards, norms and values are introduced. One of such standards concerns particularly social science researchers, who experience an increasing inclusion of their expertise and knowledge in STEM-focused projects as per requirements from funding authorities (Burch et al., 2023). These developments of inter- and transdisciplinary research becoming increasingly relevant result in a need for researchers to learn to work across disciplinary boundaries and to overcome language barriers that stem from a rising internationality of research collaboration. In my study, I aimed to reflect and dissect those emerging realities from the perspective of social science researchers involved in STEM projects and show what such cross-boundary collaboration can look like.

The currently running framework programme of the European Commission, Horizon Europe, in which most of the projects I looked at in my thesis are situated, is scheduled to close by the end of 2027 (European Commission, n.d.). As of January 2028, the tenth framework programme will take its place. With this programme being currently under development at the time of writing this thesis (Österreichische Forschungsförderungsgesellschaft, n.d.), looking at the different dimensions of implementing projects funded under such framework programmes is ever more important. In light of the results of my thesis, I argue that in evaluating the success of research projects for policy making, simply focusing on output and impact is not sufficient, as they often say little about the process of getting there. It is this process that I found to be highly diverse in nature and greatly shaped by various institutional influences, which is why I argue that insights into these processes of collaboration are of great relevance in developing future framework programmes.

One of the two aspects my research was centred around is that of language. Looking at the interplay of the diversity of language backgrounds in project partners with the institutionally common use of English as a lingua franca, I found that both multilingualism and English are, to their own extent, necessary components of an international research project. While English has taken over large realms of academia (Sano, 2002) and my results also underlined the necessity of this lingua franca, multilingualism nevertheless has its place in research and development projects, particularly for local activities or dissemination of results.

My research further showed the importance of time in creating cultures for collaboration. Against the priorities of project-based research, which supports short-term collaboration and requires results to be achieved within pre-defined timeframes, I aimed to highlight the necessary processes of crossing and deconstructing disciplinary and linguistic boundaries in order to achieve these results, as well as the time required to do so. Particularly for the integration of social sciences in STEM-dominated projects pushed by the European Commission (Burch et al., 2023), intent and a recognition of value from all participating parties are of high importance. In my thesis, I aimed to show the additional resources that are necessary, apart from those directly invested into the development of results, in order to achieve a fruitful collaboration. If those are able to be invested, I found that researchers see great value in their collaborative work and investing these additional efforts for a greater societal impact. Thus, I want to argue that the time- and resource-consuming processes that are inherently part of the “project world” (Büttner, 2019, p. 169) cannot be neglected even when presented as a small aspect next to the research and development outputs of such projects. The time and resources needed for creating spaces for collaboration need to be accounted for in institutional frameworks, and thus in the resources and funds allocated to partners, as only when boundaries within these spaces can be crossed or deconstructed can the overall project be as fruitful as possible.

8.2 Limitations and further research

In closing this thesis, I would like to address how my work fits into the larger research field and which opportunities for further studies it leaves open.

I first want to address my positionality towards the field I conducted my research on. In Chapter 5, I characterised my study as insider research (Bryne, 2018; Jensen & Laurie, 2016) as, through my professional and academic background, I view myself as part of the group I studied. I thus interviewed people whose experiences I could, at least in part, relate to, and whose epistemic cultures and epistemic living spaces I was familiar with. While I made a conscious effort to not let my analysis and discussion be framed through the lens of my own background, I am aware of the fact that my focus, approach and research questions, as well as my interest in this topic in the first place, have been shaped by it. On the one hand, doing insider research enabled me to approach this thesis in the way that I did and have insightful discussions with my interviewees. On the other hand, this opens up opportunities for approaching collaboration cultures from other points of view – both in the sense of looking at the sample I decided on from a different perspective, as well as using my or a similar approach to look at the wide range of other groups included in international, inter- and transdisciplinary projects, such as speakers of different languages or partners from different professions.

Widening or changing the focus of my thesis, looking at different geographical contexts may be of interest. By limiting my sample to researchers working in Vienna, I mainly interviewed native speakers

of German or other Central European languages. The experiences I observed in my study may differ from those in other context, be it due to different native languages (e.g., English native speakers, countries with generally less English skills than Austria), but also different levels of 'EU expertise' (Büttner, 2019) within these contexts. It is thus important to note that while my research looked into collaboration in international contexts, the perspective I used is a highly geographically contained one. I further want to address a methodological limitation of my research. By using interviews as my chosen method, I fully relied on self-reporting data for my analysis. Conducting (auto-)ethnographic research on collaboration dynamics in EU-funded projects may provide interesting additions and complements to my findings.

Lastly, as I outlined in the previous section, not only are projects themselves highly time-bound, but so are the framework programmes they are located within. The European Commission is currently implementing its ninth framework programme, Horizon Europe, with the tenth scheduled to be kicked off in January 2028 (Österreichische Forschungsförderungsgesellschaft, n.d.). With changing framework programmes come changing conditions for projects receiving funding. It may thus be of interest to conduct studies similar to mine on projects within future framework programmes and explore whether and how conditions for and the implementation of collaborative research have changed.

References

- Amano, T., González-Varo, J. P., & Sutherland, W. J. (2016). Languages Are Still a Major Barrier to Global Science. *PLOS Biology*, 14(12). <https://doi.org/10.1371/journal.pbio.2000933>
- Baus, D. (2010). Cultural Exchange in a Heterogeneous Research Field: Approaching Scientific Culture with Anthropological Thought. *Spontaneous Generations: A Journal for the History and Philosophy of Science*, 3(1). <https://doi.org/10.4245/sponge.v3i1.6574>
- Bowker, G. C., & Star, S. L. (2000). Invisible Mediators of Action: Classification and the Ubiquity of Standards. *Mind, Culture and Activity*, 7(1–2), 147–163. <https://doi.org/10.1080/10749039.2000.9677652>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bruce, A., Lyall, C., Tait, J., & Williams, R. (2004). Interdisciplinary integration in Europe: The case of the Fifth Framework programme. *Futures: The Journal of Policy, Planning and Futures Studies*, 36(4), 457–470. <https://doi.org/10.1016/j.futures.2003.10.003>
- Bryne, B. (2018). Qualitative Interviewing. In C. Seale (Ed.), *Researching Society and Culture* (4th ed., pp. 217–235). SAGE.
- Burch, K., Guthman, J., Gugganig, M., Bronson, K., Comi, M., Legun, K., Biltekoff, C., Broad, G., Brock, S., Freidberg, S., Baur, P., & Mincyte, D. (2023). Social science – STEM collaborations in agriculture, food and beyond: An STSFAN manifesto. *Agriculture and Human Values*, 40(3), 939–949. <https://doi.org/10.1007/s10460-023-10438-2>
- Busch, L. (2013). *Standards: Recipes for Reality*. MIT Press.
- Büttner, S. M. (2019). The European Dimension of Projectification: Implications of the Project Approach in EU Funding Policy. In D. Hodgson, M. Fred, S. Bailey, & P. Hall (Eds.), *The Projectification of the Public Sector* (pp. 169–188). Routledge.
- Cheruvilil, K. S., Soranno, P. A., Weathers, K. C., Hanson, P. C., Goring, S. J., Filstrup, C. T., & Read, E. K. (2014). Creating and maintaining high-performing collaborative research teams: The importance of diversity and interpersonal skills. *Frontiers in Ecology and the Environment*, 12(1), 31–38. <https://doi.org/10.1890/130001>
- Crystal, D. (2006). *How Language Works*. Penguin Books.
- Curry, M. J., & Lillis, T. (2024). Multilingualism in academic writing for publication: Putting English in its place. *Language Teaching*, 57(1), 87–100. <https://doi.org/10.1017/S0261444822000040>
- do Mar Pereira, M. (2019). Boundary-work that Does Not Work: Social Inequalities and the Non-performativity of Scientific Boundary-work. *Science, Technology, & Human Values*, 44(2), 338–365. <https://doi.org/10.1177/0162243918795043>

- Eisemon, T. O., & Rabkin, Y. M. (1978). Science in a Bilingual Society: The Case of Two Engineering Schools in Quebec. *Social Studies of Science*, 8(2), 245–256.
- European Commission. (2023). *Cultured meat and cultured seafood – state of play and future prospects in the EU*. EU Funding & Tenders Portal. <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl6-2023-farm2fork-01-13>
- European Commission. (n.d.). *Horizon Europe*. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en
- European Research Executive Agency. (n.d.). *Horizon Europe – Who should apply*. https://rea.ec.europa.eu/horizon-europe-who-should-apply_en
- Fan, F. (2012). The Global Turn in the History of Science. *East Asian Science, Technology and Society*, 6(2), 249–258. <https://doi.org/10.1215/18752160-1626191>
- Felt, U. (2014). Within, Across and Beyond: Reconsidering the Role of Social Sciences and Humanities in Europe. *Science as Culture*, 23(3), 384–396. <https://doi.org/10.1080/09505431.2014.926146>
- Felt, U. (2025). *Academic Times: Contesting the Chronopolitics of Research*. Springer Nature. <https://directory.doabooks.org/handle/20.500.12854/159401>
- Felt, U., & Fochler, M. (2012). Re-ordering Epistemic Living Spaces: On the Tacit Governance Effects of the Public Communication of Science. In S. Rödder, M. Franzen, & P. Weingart (Eds.), *The Sciences' Media Connection –Public Communication and its Repercussions* (pp. 133–154). Springer, Dordrecht. https://doi.org/10.1007/978-94-007-2085-5_7
- Fradkin, C. (2017). Scientific Publication for Nonnative English Speakers: A Retrospective of a Workshop in Brazil. *Science Communication*, 39(3), 395–403. <https://doi.org/10.1177/1075547017710244>
- Galison, P. (1999). Trading Zone. Coordinating Action and Belief. In M. Biagioli (Ed.), *The Science Studies Reader* (pp. 137–160). Routledge.
- Gibbs Jr., K. D., Han, A., & Lun, J. (2019). Demographic Diversity in Teams: The Challenges, Benefits, and Management Strategies. In K. L. Hall, A.L. Vogel, & R. T. Croyle (Eds.), *Strategies for Team Science Success: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers* (pp. 197-205). Springer International Publishing AG.
- Gieryn, T. F. (1999). *Cultural boundaries of science: Credibility on the line*. University of Chicago Press.
- Graf, J. (2019). Bringing Concepts Together: Interdisciplinarity, Transdisciplinarity, and SSH Integration. *Journal for Research and Technology Policy Evaluation*, 48, 33-36. <https://doi.org/10.22163/fteval.2019.364>
- Griesemer, J. (2016). Sharing Spaces, Crossing Boundaries. In G. Bowker, S. Timmermans, A. Clarke, & E. Balka (Eds.), *Boundary Objects and Beyond: Working with Leigh Star* (pp. 177-191). MIT Press.

- Hall, S. (with Evans, J., & Nixon, S.). (2013). *Representation* (Second edition). Sage.
- Hewings, M. (2006). English Language Standards in Academic Articles: Attitudes of Peer Reviewers. *Revista canaria de estudios ingleses*, 53, 47-62.
- Hillersdal, L., Jespersen, A. P., Oxlund, B., & Bruun, B. (2020). Affect and Effect in Interdisciplinary Research Collaboration. *Science & Technology Studies*, 33(2), 66–82. <https://doi.org/10.23987/sts.63305>
- Holmes, P., & Rajab, T. (2022). An ethic for researching multilingually in transnational, multilingual, multidisciplinary research teams. In P. Holmes & J. Corbett (Eds.), *Critical Intercultural Pedagogy for Difficult Times* (pp. 228–249). Routledge.
- Hwang, K. (2013). Effects of the Language Barrier on Processes and Performance of International Scientific Collaboration, Collaborators' Participation, Organizational Integrity, and Interorganizational Relationships. *Science Communication*, 35(1), 3–31. <https://doi.org/10.1177/1075547012437442>
- Jasanoff, S. (2004). *States of Knowledge: The Co-Production of Science and the Social Order*. Routledge.
- Jensen, E.A., & Laurie, C. (2016). *Doing real research. A practical guide to social research*. Sage.
- Karrasch, L., Grothmann, T., Michel, T. A., Wesselow, M., Wolter, H., Unger, A., Wegner, A., Giebels, D., & Siebenhüner, B. (2022). Integrating knowledge within and between knowledge types in transdisciplinary sustainability research: Seven case studies and an indicator framework. *Environmental Science & Policy*, 131, 14–25. <https://doi.org/10.1016/j.envsci.2022.01.014>
- Knorr Cetina, K. (2007). Culture in global knowledge societies: Knowledge cultures and epistemic cultures. *Interdisciplinary Science Reviews*, 32(4), 361–375. <https://doi.org/10.1179/030801807X163571>
- Law, J., & Mol, A. (2020). Words to think with: An introduction. *The Sociological Review*, 68(2), 263–282. <https://doi.org/10.1177/0038026120905452>
- Lin, W. (2020). War and balance: Following shi and rebalancing militant English-language knowing apparatuses. *The Sociological Review*, 68(2), 341–355. <https://doi.org/10.1177/0038026120905475>
- Love, H. B., Cross, J. E., Fosdick, B., Crooks, K. R., Van de Woude, S., & Fisher, E. R. (2021). Interpersonal relationships drive successful team science: An exemplary case-based study. *Humanities and Social Sciences Communications*, 8(1), 106. <https://doi.org/10.1057/s41599-021-00789-8>
- Luczaj, K., Leonowicz-Bukala, I., & Kurek-Ochmanska, O. (2022). English as a lingua franca? The limits of everyday English-language communication in Polish academia. *English for Specific Purposes*, 66, 3–16. <https://doi.org/10.1016/j.esp.2021.11.002>

- Marzano, M., Carss, D. N., & Bell, S. (2006). Working to Make Interdisciplinarity Work: Investing in Communication and Interpersonal Relationships. *Journal of Agricultural Economics*, 57(2), 185–197. <https://doi.org/10.1111/j.1477-9552.2006.00046.x>
- McGreavy, B., Haynal, K., Smith-Mayo, J., Reilly-Moman, J., Kinnison, M. T., Ranco, D., & Leslie, H. M. (2022). How Does Strategic Communication Shape Transdisciplinary Collaboration? A Focus on Definitions, Audience, Expertise, and Ethical Praxis. *Frontiers in Communication*, 7. <https://doi.org/10.3389/fcomm.2022.831727>
- Mol, A. (2014). Language Trails: ‘Lekker’ and Its Pleasures. *Theory, Culture & Society*, 31(2–3), 93–119. <https://doi.org/10.1177/0263276413499190>
- Mol, A. (2020). Not quite clean: Trailing schoon and its resonances. *The Sociological Review*, 68(2), 385–400. <https://doi.org/10.1177/0038026120905489>
- Monteiro, M., & Keating, E. (2009). Managing Misunderstandings: The Role of Language in Interdisciplinary Scientific Collaboration. *Science Communication*, 31(1), 6–28. <https://doi.org/10.1177/1075547008330922>
- Nowotny, H., Scott, P., & Gibbons, M. (2003). ‘Mode 2’ Revisited: The New Production of Knowledge. *Minerva*, 41, 179–194.
- Österreichische Forschungsförderungsgesellschaft. (n.d.). *Vorbereitung des nächsten EU-Rahmenprogrammes / FFG*. <https://www.ffg.at/Europa/FP10>
- Sano, H. (2002). The world’s lingua franca of science. *English Today*, 18(4), 45–49. <https://doi.org/10.1017/S0266078402004078>
- Sivertsen, Gunnar. (2018). Balanced Multilingualism in Science. *Research Evaluation*, 88–102.
- Star, S. L., & Griesemer, J. R. (1989). Institutional Ecology, ‘Translations’ and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907–39. *Social Studies of Science*, 19(3), 387–420. <https://doi.org/10.1177/030631289019003001>
- Star, S. L. (2010). This is Not a Boundary Object: Reflections on the Origin of a Concept. *Science, Technology, & Human Values*, 35(5), 601–617. <https://doi.org/10.1177/0162243910377624>
- van Helden, D. P. (2022). Let’s Talk About It: The Importance of Communication and Translation in Interdisciplinary Cooperation. *Forum Kritische Archäologie*, 11, 80–92. <https://doi.org/10.17169/refubium-37030>
- Tenhunen-Lunkka, A., & Honkanen, R. (2024). Project coordination success factors in European Union-funded research, development and innovation projects under the Horizon 2020 and Horizon Europe programmes. *Journal of Innovation and Entrepreneurship*, 13(1), 7. <https://doi.org/10.1186/s13731-024-00363-x>

- Vienni-Baptista, B. (2024). Cultural studies of collaborative science and technology. In F. Darbellay (Ed.), *Elgar Encyclopedia of Interdisciplinarity and Transdisciplinarity* (pp. 139-143). Edward Elgar Publishing.
- Vienni-Baptista, B., Fletcher, I., Lyall, C., & Pohl, C. (2022). Embracing heterogeneity: Why plural understandings strengthen interdisciplinarity and transdisciplinarity. *Science and Public Policy*, 49(6), 865–877. <https://doi.org/10.1093/scipol/scac034>
- Vienni-Baptista, B., & Pohl, C. E. (2023). Exploring Interdisciplinarity and Transdisciplinarity as Knowledge Regimes: A Heuristic Tool for Disentangling Understandings in Academia and Policy. *Science, Technology, & Human Values*, 1-40. <https://doi.org/10.1177/01622439231216789>
- Wang, J., Aenis, T., & Siew, T. F. (2019). Communication processes in intercultural transdisciplinary research: Framework from a group perspective. *Sustainability Science*, 14(6), 1673–1684. <https://doi.org/10.1007/s11625-019-00661-4>
- Wolters, G. (2015). Globalized Parochialism: Consequences of English as Lingua Franca in Philosophy of Science. *International Studies in the Philosophy of Science*, 29(2), 189–200. <https://doi.org/10.1080/02698595.2015.1119420>

Annex

Interview Guide (English)

Introduction

Background information about the person & their research

- Describe/introduce yourself as a person in 1-2 sentences.
- Introduce yourself as a researcher (academic background & trajectory, current position).
- What is your linguistic background?
- Introduce the project(s) you work on briefly.
- How would you summarise the work you do in the project(s) in a couple sentences?
- How did the project(s) come into being (set up from zero, built upon previous project/collaboration,...)?
- What is your own understanding of its form of collaboration, and why (would you describe it as multilingual, would you describe it as multi/inter/transdisciplinary)?

Main part

Experiences with researchers from different linguistic backgrounds

- Which languages are represented in the project?
- How is multilingualism dealt with? E.g., are there specific languages for specific sub-groups/areas, is there one language everyone uses all the time,...?
 - Does this differ depending on the mode of communication (e.g., f2f meetings, online meetings, emails)?
- (How) Did this change over the course of the project?
- In your opinion/experience, is it (in general) necessary to settle on one dedicated language for this type of work, or is multilingual collaboration something that can/should be encouraged? Why? Can you think of some example situation?
- Has language ever played a role in whether and how you can convey certain concepts to others?
- Can you think of any situations in which multilingualism was a barrier or an enabler – something that would have looked different if all involved people spoke the same language?

Inter-/transdisciplinary collaboration

- How are the different disciplines/areas involved represented in your project?
 - Which roles do they take on, if any?
- What are some key concepts of your project?

- Was there ever a situation where people had different interpretations of the same concept (if yes, please tell me about it)?
- Can you walk me through the process of defining them?
- At which point in the project were they defined?
- Why was it necessary for them to be defined?
- Where were definitions taken from, was there a “leading” discipline and if yes, why/based on what?
- How were concepts “translated”? (Both between languages and disciplines)
- Did the linguistic background of involved people play a role in this process?
- Who was heard? What was the dynamic in this process like?
- What was the role of the practitioners (as opposed to academia) in this process of defining?
- Were there any issues in the process of creating definitions and a common ground?
 - Was there ever a situation where people had different interpretations of the aim of the project?
 - How were such misunderstandings dealt with?
 - What was helpful in overcoming barriers, both in terms of definitions, and in terms of languages?
 - What were your experiences with different strategies of enabling communication (refer to what they mentioned before)?
 - Do you feel like these barriers/misunderstanding significantly hindered your work, or did they maybe even contribute to it positively?
 - If you could come up with an ideal tool to solve such barriers in defining a common ground, what would it be? It doesn’t have to be realistic.
 - What could realistically have been done differently from the start of the project to make overcoming such barriers easier/avoid it completely?
- Are there any other specific dynamics within your team when it comes to communication that you would like to share?
 - Does the communication dynamic shift with different modes of communication (e.g., meetings, f2f, emails)?
- To what extent is it easier to collaborate with people who ‘speak the same language’ (both in linguistic and disciplinary terms); is one of the two more important in certain situations? Please share some examples of personal experiences. Compare social situations (e.g., conference dinners, coffee chats) with professional ones.

- Do you notice differences in communication when working with people from the same (Linguistic and/or disciplinary) context, versus a different one?

Closing

- Any further observations you want to share?

Interview Guide (German)

Einleitung

Hintergrundinformationen über die Person & ihre Forschung

- Stellen Sie sich in 1-2 Sätzen vor.
- Stellen Sie sich als Wissenschaftler*in vor (akademischer Hintergrund & Werdegang, derzeitige Position).
- Was sind Ihre sprachlichen Hintergründe, welche Sprachen sprechen Sie und wie gut?
- Stellen Sie kurz die Projekte vor, an denen sie arbeiten.
- Wie würden Sie die Arbeit, die Sie in diesen Projekten übernehmen, in ein paar Sätzen beschreiben?
- Wie sind die Projekte entstanden (von null aus aufgebaut, auf vorherigem Projekt/vorheriger Kollaboration aufgebaut...)?
- Wie würden Sie die Art der Zusammenarbeit in den Projekten beschreiben, und warum – würden Sie es als multilingual beschreiben, würden Sie es als multi/inter/transdisziplinär beschreiben?

Hauptteil

Erfahrungen mit Forscher*innen mit verschiedenen sprachlichen Hintergründen

- Welche Sprachen sind in Ihrem Projekt repräsentiert?
- Wie wird mit Multilingualismus umgegangen? Gibt es z.B. spezifische Sprachen für spezifische Untergruppen/Bereiche, wird eine Sprache durchgehend von allen genutzt...?
 - Unterscheidet sich das je nach Kommunikationsmodus/kanal (z.B., Face to face Meetings, online Meetings, Emails)?
- (Wie) hat sich das im Laufe des Projekts entwickelt?
- Ihrer Meinung nach, ist es (generell) notwendig, sich auf eine Sprache für diese Art von Zusammenarbeit zu einigen, oder ist multilinguale Zusammenarbeit etwas, das gefördert werden soll/kann? Wieso? Können Sie eine Beispielsituation nennen?
- Hat Sprache je eine Rolle für Sie gespielt, wenn es darum geht, ob und wie sie bestimmte Konzepte an andere übermitteln können?
- Fallen Ihnen Situationen ein, in denen Multilingualismus eine Barriere oder eine Erleichterung war – etwas, das anders ausgesehen hätte, wenn alle involvierten Personen dieselbe Sprache gesprochen hätten?

Inter-/transdisziplinäre Zusammenarbeit

- Wie sind die verschiedenen Disziplinen, die in dem Projekt involviert sind, in diesem repräsentiert?
 - Welche Rollen nehmen sie jeweils ein?
- Was sind die wesentlichen (inhaltlichen) Konzepte Ihres Projekts?
 - Gab es je eine Situation, in der Personen verschiedene Interpretationen desselben Konzepts hatten (falls ja, erzählen Sie mir davon)?
 - Können Sie mir den Prozess erklären, in dem diese Konzepte definiert wurden?
 - An welchem Punkt im Projekt wurden sie definiert?
 - Warum war es notwendig, sie zu definieren?
 - Woher wurden die Definitionen genommen – gab es eine „leitende“ Disziplin und wenn ja, wieso/basierend worauf?
 - (Wie) wurden die Konzepte „übersetzt“ (sowohl zwischen Sprachen als auch Disziplinen)?
 - Hat der sprachliche Hintergrund der involvierten Personen in diesem Prozess eine Rolle gespielt?
 - Wer wurde gehört? Wie sah die Dynamik in diesem Prozess aus?
 - Was war die Rolle der Praktiker (im Gegensatz zu Wissenschaftler*innen) in diesem Prozess des Definierens?
- Gab es Probleme im Prozess des Definierens und des Findens einer gemeinsamen Basis?
 - Gab es je eine Situation, in der Personen verschiedene Interpretationen des Projektziels hatten?
 - Wie wurde mit solche Missverständnissen umgegangen?
 - Was war hilfreich im Überwinden von Barrieren, sowohl wenn es um Definitionen, als auch um Sprachen ging?
 - Was waren Ihre persönlichen Erfahrungen mit verschiedenen Strategien, um die Kommunikation zu erleichtern (was bei vorherigen Fragen erwähnt wurde)?
 - Haben Sie das Gefühl, dass diese Barrieren/Missverständnisse Ihre Arbeit stark eingeschränkt/gehindert haben, oder haben sie vielleicht sogar positiv zu dieser beigetragen?
 - Wenn Sie sich ein ideales Tool zum Überkommen solcher Hindernisse in der Definition einer gemeinsamen Basis ausdenken könnten, was wäre es? Es muss nicht realistisch sein.
 - Was hätte realistisch gesehen vom Projektstart an anders gemacht werden können, um solche Hindernisse leichter zu lösen oder sie vielleicht sogar komplett zu vermeiden?

- Gibt es noch weitere Dynamiken in Ihrem Team, wenn es um Kommunikation geht, die Sie gerne teilen möchten?
 - Ist die Kommunikationsdynamik je nach Kanal unterschiedlich (z.B. Meetings, F2F, Emails)?
- Inwieweit ist es leichter, mit Personen zusammenzuarbeiten, die ‚dieselbe Sprache sprechen‘ (sowohl sprachlich als auch disziplinär)? Ist eines von beiden in bestimmten Situationen wichtiger als das andere? Bitte teilen Sie Beispiele aus Ihrer Erfahrung. Vergleichen Sie soziale Situationen (z.B. Konferenz-Dinners, Kaffeepausen) mit professionellen.
 - Bemerken Sie Unterschiede in der Kommunikation, wenn Sie mit Personen aus demselben (sprachlichen/disziplinären) Kontext zusammenarbeiten, im Vergleich zu verschiedenen?

Abschluss

- Gibt es noch weitere Beobachtungen, die Sie mit mir teilen möchten?

AI Usage Table

AI Tool	Work Phase	Prompts/How was the AI used?	Reasons for Usage	Comment and Reflection on the Results
DeepL	Translation of interview quotes	For some interview quotes, I used DeepL to create an initial translation from German to English.	I was uncertain about how to best translate certain words or phrases.	The output was usually helpful. I went over each translation afterwards and adapted it to best reflect the German original.
aTrain & MAXQDA Transcription	Interview transcriptions	I used these tools to create an automatic transcription of my interview recordings, which I then refined manually.	I wanted to save time during the transcription process.	The tools created a rough transcription, which worked better in some cases than others. I had to thoroughly refine the provided transcriptions afterwards to ensure they were accurate.

This table was put together by the STS TAs based on the “Documentation Table” developed by the Writing Center of UniGraz (available [here](#)).