



Institut für Internationale Entwicklung, Universität Wien
Department of Development Studies, University of Vienna

ie.WorkingPaper

Dissemination and Communication of the
Transdisciplinary Project "KNOTS"

Lukas Semmler





The ie.WorkingPaper series presents research activities carried out at the Department of Development Studies or in partnership with the Department of Development Studies. The Department of Development Studies understands development research as a transdisciplinary field of knowledge that includes a wide range of epistemological, theoretical and methodological approaches and perspectives. These approaches and perspectives should be compatible with and contribute to decolonial and emancipatory production of knowledge. Although there is a wide range of thematic and regional focuses, our research shares two commonalities: the processes and mechanisms that contribute to the production and reproduction of social inequality on the global, regional, and local level are central to our research; and we strive for a relational understanding of social, political, and economic transformation.

Editorial team: Steffen Beiwinkel, Jana Binder, Antje Daniel, Judith Ehlert, Alexander Hass, Alexandra Heis, Ines Höckner, Lan Huong Le

E-mail: workingpaper.ie@univie.ac.at



Co-funded by the
Erasmus+ Programme
of the European Union



knots

Dissemination and Communication of the Transdisciplinary Project "KNOTS"

Abstract:

The project „KNOTS“ is a three-year scheduled project financed by the European Union. The goal is the establishment of regional and international networks of transdisciplinary research as well as the development of transdisciplinary teaching methods. This paper analyses its internal and external communication and dissemination on the basis of qualitative interviews and observation protocols. It theoretically outlines Transdisciplinarity and organizational communication as well as scientific communication. The interviews and the protocol of a dissemination workshop have shown that the dissemination in the KNOTS project could still be described as work-in-progress, evidently seen in the different understandings of dissemination (mainly) and Transdisciplinarity (partly). There was a general confusion about roles, division of work, responsibilities and the topic of dissemination specifically. There is not a mutual strategy for dissemination, but many different approaches. This counts especially for the time before the dissemination workshop. As one might expect, it resulted in mostly negatively reviewed dissemination activities as expressed by the respondents. An effective internal communication, however, as outlined in the theoretical framework, is key to an effective external communication. Furthermore, there did not seem to be a lot of motivation to come up with sophisticated ideas for dissemination, because, as some interviewees mentioned, they thought of dissemination as a kind of chore assigned by the donor. The workshop may have helped to clarify the roles and expectations for each partner and get a better understanding for dissemination and its importance. It appears that the quality and processes of dissemination of project KNOTS will not change fundamentally for the last period of the project. It poses an example of the challenges and issues transdisciplinary projects face in terms of dissemination activities.

Key words: KNOTS, Transdisciplinarity, Dissemination, Scientific communication, organizational communication.

Author information: Lukas Semmler is a student at the University of Vienna, currently enrolled in the master's programme "Development Studies" and will most likely graduate by the beginning of 2020. His research interest lies in the field of Transdisciplinarity, (scientific) communication and development theories.

Contact: lukas.roller@gmx.at

1. Introduction

The project „KNOTS“ (full title: “Fostering multi-lateral knowledge networks of transdisciplinary studies to tackle global challenges)¹ is a three-year scheduled project financed by the European Union with nearly one million Euro (European Commission 2018a). The goal is the establishment of regional and international networks of transdisciplinary research as well as the development of transdisciplinary teaching methods. The exchange of knowledge between academic and non-academic actors is also an important aspect of the project. Therefore, the participating higher education institutions (HEIs) should hold tutorials, field trips and “summer schools” as well as conferences together. The project follows educational (construction of teaching methodologies), scientific (founding of multi-lateral and transdisciplinary networks) and strategic (strengthening of the internationalization of HEI) goals (Call for Proposal EAC/A04/2015: 31-33). Part of this project is external communication - public relations or “dissemination” activities - as is specified in the “Call for Proposal” (2015: 38). The external communication is meant to bring the activities of the project to a more or less broad public and is also a way of showing the European Union, as the financing institution, on what matters the approved funding is spent.

This work therefore deals with the dissemination - the PR-process of the KNOTS project - and tries to examine the activities through a qualitative research approach and will explore the general processes and activities rather than a specific aspect. The outcome of this research will then be embedded in a broader context of science communication, as the KNOTS project can be used to gain a better understanding of the challenges and issues in science communication, especially in a project that involves partners from a range of different cultural backgrounds. The research process includes a participating observation as well as qualitative interviews with people involved in the dissemination process. It has to be noted that the field of interest concerns the communicators and their products and not how these products affect the recipients. A level of analysis could also be imposed on the dissemination plan in terms of the practical usage of the guidelines and specifications and if they are set in practice by the participating HEIs or the degree to which they are respected and considered by the partners.

The goal of this work is a comprehensive and broad analysis of the dissemination process of the KNOTS project based on interviews with responsible staff, a participating observation of a dissemination workshop held halfway through the project, as well as a discussion of what these outcomes may imply for projects like KNOTS in terms of science communication. The outcomes of this research could potentially be used by executive personnel of the project to further disseminate activities or provide an overview and propose improvements, as well as provide a critical approach towards the dissemination process.

Students of the participating HEIs conduct research about the project embedded in seminars. This work is the result of such a seminar. The author was actively participating in a summer school, a field trip and a dissemination workshop and can therefore not be categorized as an independent non-participating spectator. In terms of a research transparency, this should be cleared at this point.

¹ Project Number: 574069-EPP-1-2016-1-AT-EPPKA2-CBHE-JP

After this brief introduction, what follows is a literature review to outline the theoretical framework, a description of the methodology, followed by a discussion and analysis of the collected data and a conclusion.

2. Literature Review and Theoretical Framework

This chapter starts with a brief description of “KNOTS” and will then depict Transdisciplinarity (TD) and transdisciplinary research. What follows is an overview of the field of organizational communication, including internal and external communication. The aim is to describe these terms, explain their differences/similarities and put them into context of the KNOTS project. Then it will specify and outline scientific communication including “dissemination” and describe its characteristics and reasons why it might differ from the ideas of “classic” public relations – combined with EU-regulations and guidelines such as “open access”. The aim is to combine theoretical perspectives with TD and the project.

2.1. KNOTS

The transdisciplinary project KNOTS is part of the “Erasmus+”-scheme (European Commission 2018a). The goal is the establishment of regional and international networks of transdisciplinary research as well as the development of transdisciplinary teaching methods, which are supposed to come to action in the participating institutions of higher education afterwards. The exchange of knowledge between academic and non-academic actors also poses an important aspect to the project, as already mentioned earlier. Therefore, the participating HEIs hold tutorials, field trips and so-called “summer schools” as well as conferences. The project follows educational (construction of teaching methodologies), scientific (founding of multi-lateral and transdisciplinary networks) and strategic (strengthening of the internationalization of HEIs) goals as set by the project scheme (see Call for Proposal EAC/A04/2015: 31-33).

2.2. Transdisciplinarity

Nowotny/Scott/Gibbons (2001: 89) place transdisciplinary research in their so-called “Mode-2” way of knowledge production. They argue that “Mode-1” describes the “traditional” scientific knowledge production and characterize it (amongst others) as disciplinary, “objective”, homogenous and elite, whereas “Mode-2” would be transgressive, heterogenic, transcending disciplines and eventually transdisciplinary.

TD “generally rejects the separation and distribution of topics and scholarly approaches into disciplinary ‘silos’” (Bernstein 2015: 7) and “is needed when knowledge about a societally relevant problem field is uncertain” (Pohl/Hirsch Hadorn 2008: 431). Hirsch Hadorn et al. (2008: 27-28) argue that disciplinary boundaries are changing and TD is needed to solve problems in the “life-world”, whereas they see four main commonalities towards definitions of TD: “first the focus on life-world problems; second the transcending and integrating of disciplinary paradigms; third participatory research; and fourth the search for unity of knowledge beyond disciplines” (Hirsch Hadorn et al. 2008: 29).

While interdisciplinarity gets at least two disciplines engaging and interacting with each other,

bringing in the tools from each discipline, TD can be split into two orientations: the first one describes the transcendence of disciplinary boundaries, reconfiguring divisions of disciplinarity; the other aims at bringing economic, political and societal actors (“non-academics”) into the research process itself, where the goal is to solve a certain problem together with these actors (Darbellay 2015: 165-166). These problems, as Blassnigg/Punt state (2013:1), have become more and more complex (i.e. data overflow, demands for inclusion and societal engagement or various models of reality) and therefore need new forms of approach: “Transdisciplinarity extends the scope, methods and perspectives of existing disciplines whilst at the same time respecting and using the existing disciplinary frameworks” (Blassnigg/Punt 2013:2). “KNOTS” seems to operate in the second orientation, as it stresses the importance of the collaboration with non-academic actors (Universität Wien 2019).

This also applies when it comes to dissemination of a transdisciplinary project: According to Kaufmann/Kasztler (2009: 218), the communication with these non-academics (e.g. via articles in newspapers or magazines) is very important in transdisciplinary projects, whereas it is not in disciplinary ones, because TD implies other, ongoing expectations for communication and society. Therefore, it can be assumed that dissemination and communication activities are more complex in transdisciplinary projects, which again shows the relevance for systematic and well-planned communication.

2.3. Organizational Communication

The term “organization” is often used synonymously to “company” or “enterprise” (Rademacher 2009: 100), whereas the better and broader definition would be, as Miebach (2012: 11) describes it, that an organization is a social construct that follows a permanent goal and inherits a formal structure which is supposed to help its members reach said goal. This applies not only to profit-oriented companies, but also to non-profit organizations or, what will be relevant for this work, universities. This work will treat the “KNOTS” project in terms of the applied theories as somewhat of an organization within a complex array of organizations, as it fulfills the above-mentioned description of an organization to some extent, whereas it may not have openly clear hierarchies or a permanent goal, although the project officially ends by fall 2019 – the latter may be the biggest difference to a classical organization, because KNOTS only lasts a certain amount of time. It may also differ from “classical” organizations in the sense that it is not a for-profit business but a scientific project. It could be argued that in terms of KNOTS, the need for effective dissemination with clear roles and determined planning is even more important due to the limited time span of the project, in contrast to regular permanent organizations who can correct flaws and improve their dissemination or communication because they simply have more time available to do so.

Communication within an organization should help to reach its goals more efficiently, and the structure of it plays a major role in the amount of exchange between its members alongside tools and channels. It also creates a culture which influences the means of communication, whereas a high number of individuals from different cultures could create problems or conflicts, as there may be different understandings on certain issues which have to be dealt with (Rogala/Bialowas 2016: 36). These may include values, belief systems or certain rules of communication. As this cultural mix is the case with the KNOTS project, it will be the subject to this work to also examine these

aspects of the communication process. In terms of external communication, according to Szyszka (2009: 135), an organization has to engage with the consequences of the environment and intervene if necessary if it wants to continue existing. He calls this “communication management”.

Implementing an organizational communication strategy is an extraordinarily difficult task as one has to consider a vast range and interest of recipients and adapt the output to a variety of interest groups (Rogala/Bialowas 2016: 37). This certainly applies to KNOTS, as the target groups range from individual students to university lecturers and an interested scientific community in general as well as public institutions such as the European Union. Considering these interest groups and the adaptations necessary, it may be a time-consuming and complex task that requires a professional approach.

2.3.1 Internal communication

According to Rogala/Bialowas (2016: 37), four areas of needs for interaction within an organization can be distinguished: “Between individuals, between an individual and a social sub-system, within a given sub-system and between social sub-systems”. In terms of the KNOTS project, a sub-system might be the team of each participating university, or a certain cultural borders. In the empirical part, these areas of interaction should be analysed using the available data.

There is a range of theoretical approaches towards internal communication. The one that seems to be applicable for this work is one created by Gros and is described by Rogala/Bialowas (2016: 40) as a “main organizational process in which information is exchanged among various participants, and this process binds together the organizational units of the company as well as connecting the company with the environment”. Amongst others, this quote shows how business-focused this area of research is: for example, the term “company” is used synonymously with “organization”. This approach has been chosen because it seems applicable to KNOTS in the sense that many of the people responsible for dissemination have not known each other before the project and therefore may need to establish personal connections to effectively communicate with each other.

According to Rogala/Bialowas (2016: 50) organizational communication “involves the flow of both formal and informal information within a closed, hierarchical structure.” It can be argued that this does not apply to the KNOTS project, as it aims at cooperation at the same level rather than a hierarchical manner. However, it might be possible that there is a certain informal hierarchy, which will be examined later on in this work.

Important to a successful internal communication is a set of objectives, which fulfill four fundamental functions: they form the foundation of the norms to scale the efficiency, provide coordination and planning, create guidelines for the members of the organization so they can see the progress and their part in it, and help lower-level members of the organization to remember the goal. The last point does seem to be applicable to KNOTS as well: because funding is coming from the European Union, the University of Vienna is essentially the main manager of the project and therefore there might be a certain North-South divide in terms of power and access to some information. Additionally, the objectives of internal communication can be divided into three groups: that related to unifying with the organization, motivation and informing (Rogala/Bialowas 2016: 66).

Aspects that might be relevant for the internal communication of KNOTS are what Rogala/Bialowas (2016: 70) describe as possible objectives of internal communication, organizational culture (i.e. common values, norms, ideas or patterns), management in terms of setting the goals and mission, and the political aspect. Combined, these aspects could be vital for the project, as there are various people from various cultures and mind-sets involved which, additionally, have to operate in different political environments.

However, there can be obstacles and barriers that can interfere with internal communication and it is one aim of this work to examine if some of those (or others that arise during data analysis) occur in KNOTS. These are, according to Rogala/Bialowas (2016: 89) “interpersonal barriers relating to the sender and the receiver; barriers resulting from inadequate awareness and communication skills of interlocutors; barriers relating to the quality of information; barriers generated by the physical and social environment; organizational barriers”. If an organization aims at eliminating these barriers, it needs to improve the communication qualities of its members. It could be argued here that the “dissemination workshop” held in Chiang Mai in July 2018, which is part of the empirical examination, was an attempt to remove certain barriers that might have prevented an effective communication of the project – not just internal but also external. The patterns of organizational communication, as described by Rogala/Bialowas (2016: 108) should also be part of the analysis: these include power hierarchies, similarities of cultural patterns and feedback culture, amongst others.

To put these objectives into practice, a communication strategy is needed that includes internal and external communication. It consists of defining target groups, choosing suitable instruments and channels to reach those groups and other stakeholders, and inventing specific messages that aim at different receivers (see Rogala/Bialowas 2016: 154). Project KNOTS has developed a “dissemination plan” at the beginning, and part of this work will be to examine the effectiveness of this plan and its role in the communication process. Now that it has been outlined that the basis for an external communication is an effective internal communication, this section will discuss external communication and public relations.

2.3.2 External communication/”public relations”

A systematic approach towards public relations theory began in the 1970s, and two big approaches can be distinguished: an organizational theoretical one that understands public relations as a communicative function of an organization; and one that focuses on societal theoretical implications and primarily asks for the meaning and function of public relations in the reproduction process of contemporary (aka “modern”) societies (Zerfaß 2010: 47).

While business-oriented approaches see public relations more in a supporting role in marketing, communication science approaches are more diverse, as they describe public relation’s societal function and its role as the communication of an organization, while its central function is to legitimize the organization towards its stakeholders (Röttger 2009: 10). Preusse/Röttger/Schmitt (2013: 121-122) also mention this legitimization role as an essential point in most PR-related literature. This certainly applies to KNOTS, as it is funded by the European Union with nearly one million Euro (European Commission 2018a) and thus from the public and has to justify the

financial support by writing reports to the EU and fulfilling the tasks outlined in the proposal. Because of this, it can be argued at this point that the project has a high interest in this legitimization task.

As this work aims at analysing the communication of project KNOTS, one useful theory to evaluate the effectiveness of public relations is the “excellent theory” developed by James Grunig and others, which followed after they conducted an interdisciplinary study over 15 years in the Anglo-American area, which consists of a literature review and a multi-level empirical analysis. The terms “effectiveness” and “excellence” were key: They first asked how, why and to what extent communication contributes to the successfulness of an organization; they then tried to answer the question of how the communicative function has to be organized and carried out practically to be as effective as possible. The theory covers not just how to control and plan PR programmes, but also the foundations of organizing and steering PR as well as the organizational requirements to do so (Zerfaß 2010: 62-63).

Effective public relations can therefore, according to Grunig/Grunig/Dozier (2006: 33), be divided in four major categories: The first one describes an empowerment of public relations functions within organizations, meaning that it has to become a powerful unit in the management of an organization. The second is about the role of public relations-staff. Grunig/Grunig/Dozier (2006: 36) argue that communicators take the role of manager, technician, senior adviser and media relations and an excellent public relations department is headed by a manager and not a technician, the latter doing day-to-day tasks. According to them, this is a vital aspect, going hand-in-hand with both men and women have equal chances of getting into this management position. The third category, as again outlined by Grunig/Grunig/Dozier (2006: 38), states “the theoretical principal that organizations must have an integrated communication function.” They continue by arguing that an excellent public relations function integrates all public relations programs into a single department” or provides cooperation if more departments are involved. The fourth and last category describes the models of public relations and argues that the best for an effective communication process is a two-way symmetrical model, which “produces better long-term relationships with publics than do the other models of public relations” (Grunig/Grunig 2008: 337). It is based on the premise that members of the organization have an active role in decision-making and are thus empowered.

These characteristics by Grunig and colleagues will be used for the empirical analysis of this work when applicable because they provide action-oriented tools resulting from a somewhat sophisticated empirical long-term study to measure the effectiveness (in the sense they describe it) of public relations, therefore it seems meaningful to evaluate the communication practice of KNOTS with these categories, although it may be possible that a lack of data might prevent an in-depth investigation. Another issue might be that since the study by Grunig and colleagues was conducted in the Anglo-American area, some of their results could not be applied in societies that have a different political or cultural setting. As these differences might be present in the project, the analysis has to be conducted carefully in these manners and adapted to the data if necessary.

2.3.3 Scientific communication and "dissemination"

The European Commission separates between communication and dissemination: In its social media guide for "Horizon 2020", which is a research funding program with a budget of about 80 billion Euro (European Commission 2018b), communication is described as covering the whole project, starting at the beginning, informing and engaging with society, and aimed at multiple audiences. Dissemination, otherwise, happens only at the end of a research project when the results are available, is aimed at special audiences such as people who use the results for their work, and just enables the use and take-up of the results (European Commission 2018c). The importance of dissemination and the exploitation of research results is, moreover, stressed in the guide for the Erasmus+ programme by the European Union. The guide says "dissemination and exploitation of results are crucial areas of the Erasmus+ project lifecycle" (European Commission 2017: 7) and can only be successful if extensive preparation and planning is done beforehand. They also point out that it is important to always refer back to the European Union as the funder to "justify the European added value". However, dissemination, as outlined by the EU in the guide for Horizon 2020, is, as this paragraph will show, not the best option for an effective science communication. Since KNOTS started with their communication activities from the start, it can be assumed that they moved beyond simple "dissemination" as described above and tried to implement a broader and more complex communication work. "Dissemination" is therefore understood as a part of scientific communication.

According to Weitze/Heckl (2016: 25), the scientific world is moving to a more open approach toward other parts of society and would increasingly come out of the so-called "ivory tower". Pfenning (2012: 342) shares a likewise viewpoint and states that a sophisticated and elaborated science communication is still standing at the beginning but is very inter- and transdisciplinary oriented. Universities and research institutions have increased their PR and external communications personnel (Rödter 2017: 66). Generally speaking, as Peters (2012: 332) points out, the expectations of scientific communication are: the recruitment of new, young scientists, an increase in the acceptance of science and technology, the legitimization of public funding of universities and research, and the realization of a positive and rationalized impact towards society and politics. He, moreover, argues that if one mentions differences between scientists and society or parts of it and combines them with the idea that a lack of acceptance of science would lead to a dark future, it happens out of the thinking that only science and technology can guarantee international economic competitiveness, thus operating within and with a certain capitalistic logic. However, this discussion will not be held here since it would require a few additional pages and is also not the main topic.

Weitze/Heckl (2016: 48) argue that a "broad public" is often named as the target group of science communication. However, this term is unspecific, as there are diverse publics that could be characterized and/or differentiated (e.g. political, cultural, national, etc). In the case of KNOTS, these publics can be seen as the target groups, which are, according to the Dissemination and Exploitation Plan (KNOTS 2017: 3), the participating HEIs and the involved programs, their academic staff and young academics, PhD candidates (from the participating HEIs) and non-academic actors that are concerned with the discussed topics. This might be different from the

public relations work that a usual profit-oriented company does. Because scientific work can be very complex and hard to read, it has to be adapted to the different target groups, or “publics”. A fellow senior researcher probably has to be addressed differently than a student or a non-academic actor.

Dernbach/Kleinert/Münder (2012: 3) differ between three levels of scientific communication: the macro, meso and micro-levels. The macro-level communicates aspects of the whole scientific systems to publics. The meso-level is where certain political or economic processes are distributed. And the micro-level describes the work of the single scientist that researches topics, sets up projects and later communicates the results of the project.

Knowingly or unknowingly, KNOTS staff responsible for external communication, mainly scientists or academic staff, follow a trend, which is, according to Weitze/Heckl (2016: 139), that the scientists themselves do this task. Since they are not professionals in the field of public relations, it could be argued that this might come across with difficulties, problems or challenges. This will also be a perspective used in the empirical part of this work because, as outlined in the previous chapter, it is important for an effective communication that the people involved know what they are doing. The dissemination workshop mentioned earlier could be a hint that there might be challenges that had to, or have been, addressed.

An important aspect that is probably relevant for KNOTS is the knowledge about science amongst the publics or target groups. They have to know how a scientific production of knowledge works and get a look behind the curtains, because it would otherwise result in scepticism and maybe even falsely thought of as the production of “truth” (Weitze/Heckl 2016: 170-171). This is especially important for the project, as it works with non-academic actors in the research process itself as well as these groups as targets for communication. Therefore, a strong interest in transparency and insight has to be the basis for all involved in the project. However, because of the fact that the main targets of KNOTS are related to academia, this is probably not the most important point.

New channels for a dialogue between science and publics have emerged in the last decades with the rise of the world wide web – e.g. social networks or blogs that can provide direct feedback channels with interested areas of the public or target groups (see Weitze/ Heckl 2016: 190-191). For example, the KNOTS project operates a Facebook-Page (KNOTS 2018) posting regular updates during the summer school in July 2018; and participating HEIs produce blog-posts about project activities (e.g. Chulalongkorn University 2018). The empirical part of this work will examine the channels used by the project members. In this context, dialogue and participation, as described by Weitze/ Heckl (2016: 212-213) becomes important: KNOTS already does this partially as they let students attend summer schools or seminars that attach them to the ideas of the project and provide an intercultural and interdisciplinary exchange between students, lecturers and interested individuals on its topics, thus probably gaining important information and other forms of input from outsiders.

Winter (2012: 29) also stresses that dialogue is vital and has to be strengthened in the field of scientific communication, as progress here is being made but has to be increased vastly. With the rise of new media, scientists can directly communicate with their audience and do not necessarily need news media outlets who act as gatekeepers and therefore can choose not to publish what a scientist would think is important for publics or, even worse, shorten and/or misinterpret research

results. A cheap and easy option would therefore be social media. Winter complains that many scientists still think in an outdated sender-receiver model, whereas dialogue is the path for the future. KNOTS might be a role-model here, as it formally incorporates non-academics into some of its processes. The empirical examination will explore the ways, in which the project engages in dialogue and/or participation with its target groups.

Gantenberg (2018: 58-59) argues about a new phase of science that aims at a bigger incorporation of societies and which focuses its research on topics that are specifically relevant for big parts of society. This increases the public relevance and provides a certain transparency (Gantenberg 2018: 58-59). This is closely related to TD, as will be later shown, and may be important for the KNOTS project.

This participation of non-academics is outlined by Fähnrich (2017: 170-171) as so-called “citizen science”, which are events where citizens engage in dialogue with scientist, evaluate outcomes and even participate in the production of knowledge. That is closely related to KNOTS, as TD, as we will see later, is characterized by an active participation of non-academics and the goal is to find solutions for problems together with academics in mutual research. Therefore, it can be stated that communication is a determined and necessary part of transdisciplinary research and must be seen as equally important as other characteristics by scientists that engage in this kind of research. This engagement of non-academics can be seen as a way of communication and lead to an enhanced interest in science. The ambitious intention can, however, be slowed down due to scientific routines and hierarchies as well as a certain knowledge gap between scientists and non-scientists. These challenges could be tackled with a long-term orientation of projects, increased transparency, increased factual interaction and special training for the actors involved. Obviously, this has to be done carefully, respectfully and is a time-consuming process if it wants to be successful. However, as Fähnrich (2017: 172) points out, more participation does not necessarily lead to more acceptance of scientific topics and thus should not be overrated when it comes to new relationships between science and publics.

A possible approach towards the evaluation of online science-communication activities is outlined by Dernbach/Schreiber (2012: 365), who cite several possible criteria: timeliness, objectivity, originality, relevancy, transparency, understandability, reliability and completeness. Where it makes sense, some of these will be used in aspect of the online activities by the KNOTS project.

As Rödder (2017: 66) notes, an important issue of the successfulness of scientific communication concerns the topics: While some might easily attract attention, others, such as theoretical or methodological questions, do not. This could be a serious challenge for KNOTS, as it is engaging with TD aspects and methods and could thus face a fate of unattractiveness (from a communicational point of view, of course). Rhomberg (2017: 412) therefore suggests that scientists should have an interest in learning strategic and effective communication. This is also stressed by Könneker (2017: 467), who argues that researches need training and education in these aspects because political and scientific organizations would demand more understandable communication – they should know about the complexity of actors, interests, channels etc. and would therefore need professional training.

The internal communication in science (known as “scholarly communication”) has not yet been extensively researched, as Lüthje (2017: 110) points out; she notes that the focus lies on the external

communication. This scholarly communication can be split into formal and informal: while formal means publications, such as writing articles or books, the informal (basically the unwritten) part is based on unwritten rules that are negotiated and incorporated by academics throughout their professional biographies but highly relevant to build ideas and socially engage with other scientists (see Lüthje 2017: 111-112).

A relatively new form of scientific communication is so-called “open access”, which means that research results can be publicly accessed online by everybody who is interested in them. According to Rhomberg (2017: 409), it is already beginning to fundamentally change the nature of scientific communication. KNOTS is part of this, as Erasmus+ requires its projects to make their results open access and thus easily retrievable and accessible: “In particular, Erasmus+ beneficiaries are committed to make any educational resources and tools which are produced in the context of projects supported by the Programme [...] freely available for the public under an open license” (European Commission 2017: 8).

What should also be mentioned is the so-called “Third-Mission-Strategy” imposed by the University of Vienna (Universität Wien 2018a), which has – according to the University – two main objectives: “The targeted use of scientific findings to cope with the broad variety of societal challenges” and “the transfer of technology and innovation by cooperation with the economy” [translated by the author]. The second part is not really important for KNOTS, whereas the first one probably is. The University of Vienna divides this “Third-Mission-Strategy” into three categories: social and societal engagement, knowledge transfer as well as transfer of technology and innovation (Universität Wien 2018b). The KNOTS project is placed in the first category under the heading “EU-Capacity Building Project in Higher Education“. There is also a link titled “Beschreibung” (meaning “description”) which leads to a three-page document, where the project is summarized. It also contains the internet address, but there is no Hyperlink that would lead to it (Universität Wien 2018c).

Since most of the literature engages with science communication in a disciplinary or interdisciplinary way, separating between natural sciences and sciences of arts, the next chapter will describe TD and its possible specialties in terms of scientific communication and will discuss this in relation to the KNOTS project.

3. Methodology

The methodology to answer the research question derives from qualitative social sciences, whose programmatical character can, according to Lamnek (2010: 19), be described with the terms openness, research as communication, a processual character of research and subject, reflectivity of subject and analysis, explication and flexibility. According to Flick (2017: 26), the most important characteristics are the suitability of methods and theory concerning the subject, the analysis and consideration of various perspectives as well as the reflection by the researcher when it comes to research as part of scientific findings.

This methodological approach has been selected because of the open nature of this research and the given uncertainty before gathering empirical data, as this research tries to look at the broad picture

of the dissemination of KNOTS and not just a certain single feature of it. The data used for the empirical analysis has been collected via interviews and a participating observation. Therefore, the methods used will be interviews and participatory observation.

In terms of research ethics, as described by Flick (2009: 41-42), it is important to have consent by the research subjects and inform them about your overall research interest. In the case of this work, this includes the participants of the “dissemination” workshop as well as interview partners. Moreover, confidentiality and anonymity play a major role, especially when it comes to the interviews. For example, if an interviewee frames a certain issue negatively, it should not be clear who that comes from, since the people involved in dissemination in the KNOTS project know each other and anonymous criticism that can be traced back to a person may cause conflicts. Therefore, to guarantee that the interviewees will speak openly, this has to be made clear before the interview.

3.1. Interview

Qualitative interviews are, according to Lamnek (2010: 301) increasingly popular among researchers of various fields, one reason is, he argues, that content analysis and interpretation of texts is dominant among qualitative sciences and therefore there is a vast number of techniques already available. Qualitative interviews are, according to the same author, unbiased-authentic, intersubjectively comprehensible, and can be reproduced at will. These are advantages a participatory observation does not have (Lamnek 2010: 301). However, a possible reproduction at will may be not easy to accomplish, as the surrounding conditions of an interview or other factors might influence follow-up interviews. Every interview is a social encounter and requires a minimum of trust on both sides. The interviewee must be sure that whatever they say will not be used against them in any way (Reichert 2016: 188-189).

With reference to a diagram by Lamnek (2010: 303), the five interviews conducted for this paper can be characterized as qualitative, as they were non-standardized, verbal, soft/neutral, open, and face-to-face. Moreover, the interviews were analytical (Lamnek 2010: 305), meaning that they aim at examining a specific social issue. The interviews have been conducted openly and partly-standardized, and took between 15 and 25 minutes. This type of interview is moreover characterized by open questions, inviting the interviewee to answer in a broad manner, meaning that they can choose their answers and frames freely in a given context. This means that the starting question is somewhat of a request to talk freely about a topic. The interviewer then proceeds to build the interview upon the answers or has similar open questions for back-up in case the interviewee runs out of ideas or stops talking (Lamnek 2010: 310). As Dannecker/Vossemer (2014: 159) describe, this type of interview is characterized by open questions and a flexible nature, resulting in a possible dynamic interview. The interviews turned out to be just slightly dynamic, as there have been just a few meanderings to the questions prepared before the interview.

Two interviews for this research paper have been conducted during a dissemination workshop on 15 and 16 July, one during the summer school in Chiang Mai on 17 July and one after the field trips on July, 29 – they lasted between 15 and 23 minutes. These dates have not been systematically chosen; the interviews took place when there was a suitable opportunity to do so. The initial aim was to interview one partner from each participating HEI, but this was dismissed soon because it seemed

that one person from each origin country was within research resources. Therefore, one participant from each origin country involved was interviewed, which resulted in interviews with one person each from Austria, Germany, Czech Republic, Thailand and Vietnam. It probably would have been better to interview one person from each HEI, as there are two from Thailand and three from Vietnam, but only one person from each of those countries were interviewed.

Three interviews were conducted during breaks in the dissemination seminars and were therefore time-limited – there should have been a setting chosen where there was more time available. The first interview, for example, was interrupted by the seminar lecturer and had to be continued in the next break. This was rooted in a desire of the author to get interviews done fast, in order to be able to focus on the consecutive summer school. This desire turned out not to be in vain, as the rest of the interviews were conducted after the workshop due to further time constraints. Thus, two people were interviewed with the additional knowledge from the workshop, which may have had effects on certain answers, perspectives or knowledge issues, as compared to the three interviews conducted during the workshop. It is also uncertain, if and to what possible extent the personal relationship between author and interviewees might have had an impact on certain answers, as the author was part of the dissemination workshop and was on a first name basis with all respondents. It is also possible that the author was influenced in one way or another by the surroundings, which also may have had an impact on the research. Getting assurance of this is, however, practically impossible and can therefore only be kept in mind. It nonetheless poses as a vital learning effect for future research as these experiences are probably part of all field research – and it points out the importance of planning. Moreover, language difficulties by some interviewees posed a challenge for the empirical analysis, as many parts were not understandable for the author and could therefore not be used for analysis.

3.2. Participatory Observation

According to Brüsemeister (2000: 83) various forms of observations can be distinguished: participatory and non-participatory, hidden and open, systematic and un-systematic. During the dissemination workshop in Chiang Mai, the observation was participatory, open and probably un-systematic. During the summer school, it was probably hidden because not all participants knew about the research project. In participatory terms, there can be various forms, ranging from total participator to total observer (Brüsemeister 2000: 84). He mentions that usually researchers apply a mixture of these approaches and vary them situationally. An important aspect Brüsemeister (2000: 86-87) stresses, is the fact that a (self-)reflection of the consequences of the participation of the researcher has to be done, since the acts of the scientist could affect the other participants and vice versa. Lüders (2004: 386) indicates the dilemma of being a distant observer that follows scientific standards and acting socially and culturally appropriate in the role as participant. Therefore, a (self-)reflection will be part of the empirical analysis.

Most importantly, a detailed protocol, consisting of notes, impressions and methodological and theoretical considerations, guarantees a meaningful and distant analysis after the observation. Experiences that are not written in the protocol cannot be used scientifically. It provides the basis for intersubjective comparativeness. Reichertz (2016: 213-214) argues that a researcher should see

themselves as some form of camera, that films what is happening from a distance and then takes it all home for analysis.

In terms of analysis, a researcher is confronted with her or his own subjectivity and material they gathered by her- or himself, thus not only is the observation of other participants relevant but the researcher's behaviour should also be analysed. (Self-)reflectivity can relieve these problems and dilemmas, and therefore impose an important part of the empirical analysis. Of course, these methodological problems can never be fully overcome (Reichertz 2016: 215).

The dissemination workshop took place on July 15 and 16 in Chiang Mai, where a person from each partner HEI, responsible for dissemination, participated. The author also (partly) participated in the workshop and wrote a protocol. Participation and reporting posed a challenge but delivered valuable insights to the dissemination team and processes. However, as the observation protocol fluctuates in terms of details, it would have been reasonable to get more familiar with the method of participatory observation beforehand, which would doubtless have increased the quality of the protocol.

3.3. Content Analysis

A content analysis systematically examines written data. There are various approaches and the differentiation between quantitative and qualitative is mostly tough, as they usually, according to Deutschmann (2014: 95) incorporate aspects and approaches of each other. However, quantitative approaches have been dominant for a long time and criticized for being positivistic and hypothesis-following. Qualitative content analysis-approaches were then established, as they aim more towards the finding of latent structures of meaning (Deutschmann 2014: 95-96). Key is a systematic organization and structuring of data and a transparency concerning the rules and processes that have been engaged – this should guarantee an intersubjective comprehension (Deutschmann 2014: 97).

A central approach should be the development of categories derived from the data, meaning an inductive way of analysis. A mixture of deductive and inductive analysis, as the theoretical framework will most likely inspire or deliver a certain extent of categories, is also possible. A text is carefully scanned while looked for suitable categories. For example, as Deutschmann (2014: 101) writes, a category can come from a key term or sentence. It is possible that a number of categories can be put together, subsumed or summarized.

A vital part that has to be done before building categories, is, according to Mayring (2015: 55), a self-reflection of the person, who has gathered the data and the circumstances under which it was produced: This includes the author, their emotional and cognitive behavioral background, the target group (on which the material has been gathered), the situation where the data was collected and the sociocultural background of the scientist. The steps for an effective content analysis are outlined by Mayring (2015: 62) and will serve as basic reference to the empirical analysis of this work.

A crucial step for the analysis is the interpretation of the gathered data: For this work, a structuring approach, as outlined by Mayring (2015: 67), seems to be suitable, as the goal here is to filter certain aspects of the material or to evaluate the material based on (pre-made) structuring criteria. As already mentioned, a mixture of both types seems to be applicable for this work. Part of the

empirical analysis is moreover a constant process of (self-)reflection, which, as outlined above, is vital for good qualitative research.

4. Empirical Analysis

This relatively small case study is based on interviews and a participatory observation and does not include an analysis of the high number of Facebook posts, a number of articles or presentations. The analysis of each of them would have been very resource-intensive and therefore it was not done as planned in the beginning of this research. It would be fruitful to conduct a new series of interviews when the project is finished, with similar but more detailed questions, to provide a comparison between the dissemination activities and organizational aspects between pre- and post-workshop, and see if it had an actual impact. This, however, is far beyond the resources and demands of this work. This work can therefore provide a basis for future and more in-depth analysis of the dissemination by the KNOTS project or provide a basis for the research on the dissemination of similar transdisciplinary projects. Following this, another interesting aspect, which was also beyond the present research interest for this work, would be the comparison between KNOTS and other transdisciplinary projects in terms of dissemination: How does KNOTS disseminate, and how does Project X or Y disseminate? Which dissemination strategies work well and how are dissemination-related aspects understood and implemented in different projects?

The empirical analysis resulted in three main categories with three to four sub-categories, which will be described in the following section. However, as these multi-dimensional categories seem to have many interlinkages, they will be synthesized and then re-connected with the theoretical assumptions. What follows is a short depiction of the dissemination activities of the project until Mid-February, 2019. For reasons of anonymity, the interviewees will be described as “European” and “Asian” because there may be differences in perception due to possible relations of power or understandings of certain issues.

4.1. Categories

4.1.1 Surrounding Conditions

This category describes the surrounding conditions of dissemination in the KNOTS project, including EU-policy (e.g. guidelines), the respective universities and institutes, KNOTS itself and time. The latter may be present in most of the categories, however, and is therefore hard to assign a certain category and is thus implemented in the respective categories when suitable.

EU-Policy

One interviewee from a European country explained that certain criteria have to be fulfilled, otherwise the European Commission will not accept it as dissemination; and there has not been enough time in the project to discuss this properly. The same interviewee also mentioned a certain top-down attitude held by the European Commission: e.g. the European universities would bring the expertise to the partners in Asia. From the interviewee’s point of view, the latter would have more

knowledge on the relevant topics, such as TD. Another interviewee, also from Europe, said that in the beginning of the project, the general understanding of the need to disseminate was to do it simply because the EU demands it – dissemination was a “mechanic” process. Moreover, he explained, his university told them to do dissemination because of the demands by the European Commission. This means that the project partners did not think of dissemination as a valuable part of the project, but as a necessity for the European Commission who provides funding. However, the second interviewee mentioned that a midterm report assigned the project an “excellent dissemination”, and he finds this “interesting”. He suggested changing this attitude and highlighting the advantages of dissemination for the respective universities, institutes and for oneself. During the dissemination workshop, the participants outlined the issue of EU regulation and guidelines and suggested that everyone involved in dissemination has to know these formal criteria.

The answers depict what challenges and problems TD projects can face when there is an institutional financier like the EU in the background who demands a certain output from the project members as a requirement for funding. There is also nearly no space for negotiating these outputs (e.g. if one considers certain tasks as unnecessary or has other objections), as projects only get funding if they commit to fulfilling all tasks required. This indicates a power hierarchy that leaves little space for scientists; and de-facto obliges them to fulfill any requirements given to them by an institution.

Universities and Institutes

The conditions in the respective universities and institutes also affect the dissemination process and activities, as the interviews have shown. One European interviewee said that his institute is bad at dissemination and that he has little experience in dissemination. He therefore wishes for more support or training from departments of his university that are responsible for dissemination. Another European interviewee thought that their university is glad to be in the project and their institute director is happy about it, “but it’s not that someone comes to us and says ‘this is such a great thing’”. An Asian interviewee wished to have more support from her university concerning the dissemination process. She said she has to persuade the university director, make the project more appealing and highlight the benefits for the university to get support and better funding. Another interviewee from Asia said that the executives at her institute do not understand what TD means, which makes it hard to properly explain the project and why it might be important. The language barrier also imposes a challenge at her university, as most of the KNOTS content is written in English.

It seems that there are executives in some universities that have problems with the concept of TD and may not understand the purpose of the project, which may be an additional barrier for effective dissemination of KNOTS. However, more detailed data is needed to analyse this aspect properly.

Again, these answers show the importance of institutional backing in projects like KNOTS, as little or no support could pose an obstacle in the success of projects, or could at least be a reason for time delays or affect the motivation of people involved. Moreover, as the interviews depict, the need for experienced or professional communicators (which could be found at PR departments of

universities) regarding science communication is universal, as all interviewees mentioned that their lack of skills regarding dissemination, combined with little institutional backing, was a hindrance.

KNOTS

The conditions in the context of KNOTS itself consist of interlinked categories, such as organization, coordination, planning, internal communication and division of work. A European interviewee mentioned that there has been no real plan in the beginning of the project and that they did not outline who does what, which resulted in a lack of coordination as no dissemination schedule was formed or discussed: everyone relied on each other to know what to do. Both he and another European respondent see time as important here, as there was not enough available to properly discuss these issues. This became evident during the dissemination workshop, as a number of participants from both continents did not know, halfway into the project, the roles they were supposed to play or what kind of work they ought to do. An Asian respondent said that at the beginning of the project, she thought that her university would not be expected to do dissemination, but that they would just be coordinating other activities. Another Asian interviewee also mentioned that there was not enough time. The partners did not know each other at the beginning, so it was more important to get to know each other than to discuss dissemination in detail. This led to a lack of internal communication, which another European and an Asian interviewee confirmed by stating that they were not really connected to each other and it was not clear who was supposed to disseminate what. This correlates with the division of work, as the same interviewee said that it is not clear who does dissemination. A respondent from Asia furthermore said that some partners are more involved in dissemination than others and that one could not force anybody to do more. Another interviewee from Asia said that there is not really a collaborative dissemination happening, meaning that each partner only does dissemination in their respective universities. This may indicate a need for better cooperation and clearance in regards to division of work. This lack of cooperation or coordination was exemplified during the summer school, when a group of students published live-videos on Facebook without asking beforehand for permission. This led to a short discussion and caused some turbulence because some participants did not want their oral contribution publicly displayed because there were sensible political issues discussed, which could become problematic. Many participants voiced concerns about openness in this regard.

There was some kind of dissemination plan, which was written by a person from the University of Vienna. This plan, however, was, according to an interviewee from Europe, more a kind of documentation of a variety of activities than a clear dissemination plan. The interviewee's sole contribution to this plan was agreeing on certain dates for activities like the summer school. He said that this plan has not been very useful and that it played a very small role in his activities. An interviewee from Asia stated that there are not many activities in the plan, that they are behind the timeline and that the plan is not very specific; it also did not play a role in her dissemination activities. Another interviewee from Europe, who was late to the project, did not even know that this plan existed. However, during the dissemination workshop, a new idea for a more comprehensive plan with all partners involved emerged, which, according to an interviewee from Europe, could become useful. This plan goes with a responsible core-team that was formed during

the workshop, where one person from each partner was assigned as responsible for dissemination, while the rest is in a supportive function; and all partners agreed to work together more closely to make this work. A different interviewee from the same continent hoped that this somewhat enhanced approach, where everybody knows their roles and expectations, could improve all aspects of dissemination. This could only happen if all partners are willing to think about what they can do in their respective context.

These range of challenges and the range of expectations, illustrated by the answers, shows the importance of planning and coordination in a project that involves a range of HEIs and a number of people with different cultural backgrounds. For a project with these preliminaries to become successful, there needs to be a considerable amount of time used for coordination of activities, establishing roles and clearing up any ambiguity that might occur in these organizational matters. This is helpful not only for reaching goals faster but also with respect to the time-limit of a TD project, as deficiencies rooted in poor planning and coordinating might be hard to settle in a project with a more limited time frame.

4.1.2 State of Knowledge

This category is about the knowledge in dissemination and TD among the partners and their effects on dissemination activities. Power relations are also represented in this category, as they may be effected by different knowledge levels or from different ways of knowledge production, given the mixed cultural backgrounds of the partners. However, as the field of knowledge production is a very complex one, this paper will not go too deep here, but will focus primarily on the power relations itself and not on the reasons for them.

Dissemination and Transdisciplinarity

One respondent from Europe said that there have been many different understandings of what dissemination and TD are, and that they should have been discussed at the beginning so everybody knew what these terms mean. A different European respondent argued similarly, by saying that nobody was really experienced in dissemination, himself included: “There was a basic lack of understanding [of] the importance of dissemination. Somehow it just perished at the beginning”. Another interviewee from Europe mentioned a lack of knowledge concerning TD and dissemination and therefore felt insecure about disseminating transdisciplinary matters, for example, via a lecture. According to this person, there was a general lack of understanding of these terms and most of the people involved were not familiar with TD prior to KNOTS. A respondent from Asia said that the lack of understanding of TD poses a constant challenge, as this is the number one question she receives from people outside the project or during train-the-trainer sessions: “What is Transdisciplinarity?” Many would mix it up with other things or think it is the same as Interdisciplinarity, even the staff at her university: “They still see TD as a knowledge network, so they put everything in the knowledge”. She added that people understand the project KNOTS, but not that it is linked to TD. She sees it as a possible task for the dissemination team to come up with ideas of how to explain it properly so that everybody understands it. A European respondent thought that the dissemination workshop helped to improve the understanding of dissemination, its

purpose and benefits for all, as well as its importance in the context of TD. The more one understands something, the better the dissemination about it will be.

The workshop itself depicted the need for a better understanding, as many participants expressed their lack of knowledge about dissemination, as most had no experience in it. Some thought that they would just make some social media posts or write some texts, and that will be enough. Most of them also did not consult the initial plan and did not seem to know the actual target groups of the project, as there was some confusion during the workshop. It seems that the workshop sharpened and expanded their knowledge.

For projects like KNOTS, that incorporate both TD and dissemination (whereas the latter is part of the first, as outlined in the theoretical part), it seems there is a substantial need to consider and reflect on the complex nature of these terms at the beginning of the project, as there may be different assumptions or approaches or theoretical perspectives and backgrounds that have to be considered and addressed, as the interviews showed. The example of KNOTS provides a good insight of how these different assumptions and/or knowledge issues affect a project and can provide valuable information for similar projects.

Power relations

As previously mentioned, power relations might result from different levels of knowledge, access to certain sources or different ways of knowledge production and a possible hierarchy of knowledge systems and might correlate with cultural backgrounds of the people involved. The general lack of knowledge concerning dissemination and/or TD (which basic assumptions and theories derive from the “Western” knowledge system) among most of the participants interviewed has already been outlined. What all respondents agree with is, that debates happen on an equal level; but besides that, experiences differ. One interviewee from Europe said that he does not feel that there are different levels of power, but different levels of understanding. However, he said that the European Union thinks of the project as European partners bringing knowledge to the Asian partners, meaning that there was not intended to be not a mutual exchange of knowledge, but a one-sided one. This may result from the EU providing funding for the project. When it comes to the dissemination process, another interviewee from Europe also said that there are no power hierarchies. One respondent from Asia, however, does feel that there was a power hierarchy in the process of dissemination. Another interviewee from Asia answered similarly, saying that she feels there was a power relation also on an institutional level, as many would see that it is the European universities that “tell us what we have to do”. She also mentioned the midterm-report and explained that it is not her work that is rated there, but mostly that from the European universities; and she would have liked to get more involved in the activities. Another interviewee from Europe also feels that there were power hierarchies and mentioned the term “ownership”, which is probably linked to these experiences. He says that it did not go well, as many partners thought that they had to disseminate because the European universities expected it from them. He therefore said that this idea of ownership should have been pushed more in the beginning and that he himself also reckoned this top-down approach and let all partners do what they thought was suitable.

But there are more visible power relations: During the field trips executed in Thailand, in July 2018, every group had to assign a “responsible person” (a student) and a “responsible person quality report” (an academic senior). Although every group consisted of people from nearly all partner institutions, only a person from Europe could be assigned to one of these positions. Whether this has been a demand by the European Commission or decided by the KNOTS partners remains unclear. Anyway, this means that people from Asia were excluded and could not become responsible for these reports.

It appears that there are (slightly) different views on power hierarchies between Asian and European interviewees. The reason may be a combination of institutional conditions, ownership and access to/levels of knowledge. Levels of knowledge concerning dissemination is similarly small among nearly all partners. It could be that a lack of skills and knowledge in this field prevented a formation of ownership (Ownership means that the partners independently disseminate in their environments, knowing what they do). Instead, it seems that they waited for someone telling them how to act or simply disseminate at-will, without a sophisticated plan. This basic understanding is a key factor for self-motivation and the successfulness of dissemination, as one respondent from Europe mentioned. However, as already outlined previously, power relations have to be examined in greater detail and from other perspectives to guarantee a valuable analysis. Therefore, this section could be seen as a starting point for future research in this direction.

Power relations in transdisciplinary projects are vital to address and reflect on, as the example of KNOTS has shown: It can lead to partners feeling substitutive and thus affect the partnership and successfulness or the effort certain partners put in. It also shows the effects of institutional demands and their resultant challenges, and the effects of one partner having all responsibility in terms of funding as well as the donor-related administration. To increase engagement and reduce power hierarchies, one solution might be to split these responsibilities among the partners so all are involved at the same level. However, the European Commission requires to have project leaders who are responsible for administrative tasks, documentation and money management.

4.1.3 External Communication

This category describes the external communication done by the project members and is based on the interviews as well as a general description of what has been disseminated so far (i.e. what has been recorded and sighted by the author). It starts off with the sub-category “Channels”, proceeds to “Target groups” and then outlines the dissemination activities that have taken place so far.

Channels

This sub-category is about the channels used for dissemination, and goes hand-in-hand with other categories, such as knowledge (as extensive knowledge on dissemination probably influences the choice of channel). Facebook is mentioned by a number of interviewees and seems to be important: one interviewee from Europe said that at the beginning of the project many people thought that sharing information, for example on Facebook, would be enough for dissemination. Another

respondent from Europe mentioned that his institute has a quite modest website and no Facebook account and wishes to have greater access to the communication channels of his university, for example the university newspaper. Another respondent from Europe used email groups, the Facebook page of the institute and the website to disseminate some information. An interviewee from Asia mentioned the Facebook page and the website of her institute as well. The same account was given by a different interviewee from Asia who referred to an online blog run by her institute to disseminate certain texts; she additionally says that each project partner would have their own dissemination channel, but they barely communicate them with each other. She called for a change, as the choice of channel is important to reach the intended audience.

During the dissemination workshop, the attendees discussed the creation of an open access-platform where relevant project outcomes or other material will be published online, accessible for everyone interested. This platform is now [as of December, 2019] online and provides insights to the project as well as reading material on TD and the teaching manual. The main problem, according to the same person, as he said during an interview, is financing the maintenance of this website and keeping it updated.

It therefore seems that online channels are in the focus of the partners, as almost all of them mentioned their Facebook activities when asked about channels. The main KNOTS channel is hosted by the University of Vienna, while from the other partners (except one, who has no Facebook account) one person has full access to the page. Some interviewees also mentioned that they use the channels of their institutions or universities for communication.

External communication is part of a transdisciplinary project like KNOTS, as TD aims at solving problems and requires the incorporation of so-called “non-academic actors” (NAA): this can be put in the Mode-2 knowledge production in the sense that it tries to work for a certain societal responsibility while being cooperative and anti-hierarchical in the process of knowledge production. A way to interact with these NAA are different channels that allow two-way communication, such as is done by some KNOTS partners through social media. For science communication, the choice of channels may vary with the intended recipients, and transdisciplinary projects are well-advised to emphasise the usage and choice of channels and see it as a key element in successful science communication and dissemination as well as an important part of Mode-2 knowledge production.

Target groups

This category describes how the interviewees understood and approached the target groups and how these affected their dissemination habits. One respondent from Europe said that he finds that there were misconceptions about the target groups, because the whole project was about TD and not about a specific topic, such as migration. Therefore, he argued, the main target groups are students and faculty members in the Asian partner institutions (he specifically mentions Asian here because he refers to his prior arguments about the top-down approach by the EU).

Another European interviewee mentions that there was no feedback received from target groups and no strategy for dissemination was used at all: “I didn’t get any reactions for dissemination that we did because I think people saw it and said ‘O.K.’, but that’s it”. However, as the interviewee continues, they tried different approaches on different target groups, such as talking with fellow

researchers and giving them information (which they then put on their website) or trying to bring a student to the next summer school. A respondent from Asia said that the executives at her university are interested in the project because she talked and explained it to them quite often. She also targeted students who are in Master or PhD programmes and lecturers to incorporate TD into their research. One task was also the recruitment of students for the summer school and field trips. Another interviewee from Asia thinks that in her university and institute, the messages need to be simple, understandable and linked with local people which will cause more people to know about the idea of TD and the project. This call for simplification is also mentioned by a European interviewee, who added that the content needs to be adapted in relation to the target groups. He sees the target group of students, recruiting them for the summer school in both Europe and Asia, as successfully addressed, as they may incorporate TD in their future research. Apart from the student group, he said that he also received positive feedback from other academic staff. He also emphasized the need to consider NAA as an important target group for dissemination and ask them about the content they want. During the workshop, the participants arrived at some sort of consensus to simply talk more about the project, mention it and cite it.

It appears that the experiences of the respondents from their target groups were mixed, as it seems that, especially on an institutional level, their activities were just taken note of and not supported too well. One problem, as many interviewees explained, could be the complex and maybe abstract nature of TD, which might be hard to explain to a person not involved in the project. Creative ways to address different publics should be found soon, as explaining this to the different target groups is vital for an effective dissemination. This means that relevant content has to be adapted to the respective target group because a NAA might need to be addressed differently than a senior academic staff.

Dissemination Activities

This category is about the dissemination activities, as outlined by the interviewees. It will then give a short overview of the reported activities, based on internal documents forwarded to the author. All respondents mentioned Facebook as their main channel for communicating their activities, some added their respective websites. An interviewee from Europe said that nearly all activities were planned in the beginning of the project, which led to a lack of innovation and ownership because this approach did not support the idea that everybody considers what they might do in their respective context and how. A different interviewee from Europe described two seminars he held together with a colleague about the summer school and the issue of TD/KNOTS. He initially didn't think of it as dissemination, but changed this view during the workshop. He also mentioned documentation work as dissemination, such as writing protocols or creating photo protocols. He specifically mentioned the staff from the University of Vienna and said that they did good work during the summer school by posting regular updates on Facebook. His activities furthermore included information evenings, where he informed (and persuaded) students about the summer school. Generally, he rated the dissemination activities, until the dissemination workshop, as insufficient. Another respondent from Europe rated their dissemination very poorly: they sent some information to email groups and posted it on the department's Facebook page. The person would

therefore be interested in receiving some information on what other project partners, especially in Asia, disseminated. One interviewee from Asia also stated that the general dissemination activities were not good because they were behind the timeline. She said that her dissemination activities were: publishing Facebook posts, posting something on the website and recruiting students for the summer school. Another respondent from Asia added that the dissemination activities between the eight partners still did not happen systematically. She said that besides Facebook posts and website updates, her institute also runs a blog with articles written by students about the summer schools. She thinks that the dissemination activities slightly improved since before and during the second summer school, and have been successful in a way that now at least more people understand what TD may be.

According to a person with access to the KNOTS Facebook page, there have been 226 Postings made between May 2017 and February 2019, where each post had at least one picture or video. Ten videos have been produced and posted in nearly one-week intervals on the Facebook page from November 2018 to Mid-January 2019. These videos gained a median of 55.5 views and 2.5 likes and do not seem to be professionally produced, as the quality of audio, video and editing does not appear to be very high. Moreover, according to the same source, 340 pictures have been posted. The frequent use of pictures, regular postings on current events and quick replies to Facebook messages may be a sign of an effective use of social media, as it fulfills quality criteria for online science communication such as timeliness, originality, completeness or relevancy, as depicted in the theoretical framework.

According to the dissemination plan, which displays dissemination activities and was updated after the dissemination workshop by adding some columns in an Excel sheet (What – To Whom – How – When – Who is responsible – Planned Metrics – Actual Metrics – Documentation), there are currently 80 dissemination activities reported for the whole project (as of the end of February 2019). These include seminars, articles, blog posts, talks, workshops, flyers and postings with pictures and videos on Facebook. It seems that there is still either a lack of documentation or a lack of equally distributed dissemination activities, as the numbers highly differ between the project partners. It may be that these numbers do not depict the actual dissemination activities, as it is likely that many activities are not documented, such as talks with colleagues or university executives. It is therefore hard to tell how much dissemination each partner actually does because of a lack of documentation: about half of the logged activities do not show the actual metrics. However, it appears that this updated approach, rooted in the dissemination workshop, led to a bit more coordination and clearer division of roles, as it became apparent which person is responsible for a certain activity and what the goal of this activity should be. But, as already outlined, with only a partial documentation it is hard to get a grip on the activities of all partners.

The experiences in the KNOTS project, as expressed by the interviewees, seem to indicate that it is important for such a project to mutually share the respected activities so all partners involved know exactly what the others are doing, which could improve the quality of the output, as the partners could comment or supplement each other's work or get inspiration.

4.2. Synthesis of Categories

The categories outlined above have many interlinkages, it therefore seems suitable to connect them. The most pivotal category is probably the state of knowledge concerning TD and dissemination, as all respondents said that they had little knowledge of dissemination and not enough of TD to properly communicate its matters. This lack of knowledge affected the external communication in particular, as there was no sophisticated plan or strategy applied. It also may be the reason for some power relations, because somebody who knows little about a certain topic may easily be directed by others, therefore having negative impact on ownership, relying on actors that have presumably more knowledge (this indicates a need for a greater reflection of knowledge systems and hierarchies and how they manifest themselves in such a project). This, again, may be caused by a lack of time, about which many interviewees complained. It seems that there is a general consensus that more time would have led to a more detailed discussion about dissemination and TD, which would then lead to an improved dissemination. Many respondents also mentioned power relations on an institutional level, saying that many university executives or some EU-contact persons may have little understanding of TD; improving this costs time which could instead be used for the project. Moreover, there are also internal power relations that were mentioned especially by interviewees from Asia: Some felt that the European partners, especially the University of Vienna, did the most and that they would tell them what to do, and so they felt somewhat excluded. This may be rooted in the University of Vienna role of project leader and the corresponding responsibilities and having the greatest stakes in the project from the very beginning. The project scheme, and its close connection to international development, foreign policy and European Integration further implies not only certain funding logic by the donor organization, but also the reproduction of the donor-beneficiary relations. The project description already implies a bureaucratic environment and asserts administrative tasks and funding-related ones to a few (European) project partners – the partners in the global south however are attributed other roles, as e.g. the field research is happening in these countries. This intrinsically gives the southern partners the task of organizing everything that is happening in their countries. Three years for a transdisciplinary project like KNOTS may not be enough to establish a common understanding of TD and science communication embedded in a Mode-2 knowledge production system across a variety of multicultural project partners. Therefore, the results of this case study may imply that transdisciplinary projects should greatly reflect on power hierarchies (or their structural preconditions) and its possible roots and ultimately try to reduce these power gaps to increase ownership of the partners, which may lead to an improved motivation and self-confidence among the project partners. It would also improve the internal communication between the project partners, because, as outlined previously, some interviewees see much potential there for improvement (some have argued that they would not know what the other partners were doing). This is, again, linked with knowledge and the surrounding conditions of the project, because, as outlined in the theoretical part of this work, a proper internal communication heavily affects the outcomes produced.

The categories formed show the complexity of science communication and dissemination in a transdisciplinary and cross-cultural environment, as there is a variety of interlinked variables that have to be addressed and considered, while keeping Mode-2 knowledge production and its

underlying assumptions, including cooperation, anti-hierarchical approaches and eventually the incorporation with NAA, in mind as well as power hierarchies occurring in knowledge production and the reflection of them. They also depict the challenges that occur with these concepts in terms of dissemination and communication with NAA and the importance of a well-planned dissemination and communication process involving individuals experienced in these matters.

5. Summary and Outlook

This case study of the dissemination and communication of a transdisciplinary project can serve as example of the complex and interlinked challenges such a project encounters as well as the difficulty when a relatively new form of knowledge production is applied in a cross-cultural environment.

The dissemination in the KNOTS project could still be described as work-in-progress, evidently seen in the different understandings of dissemination (mainly) and TD (partly), which serve as obstacles for an effective dissemination strategy and implementation. It shows the difficulty of disseminating ideas on which there is no general consensus, which can result in different partners disseminating different aspects. During the dissemination workshop, there was an observable general confusion about roles, division of work, responsibilities and the topic of dissemination specifically. It seems that there is not a mutual strategy for dissemination, but many different approaches; this counts especially for the time before the dissemination workshop: A European partner wrote an initial dissemination plan, which he created on the basis of other projects, and the partners inserted some activities and time stamps and then everybody did what they thought would be suitable as dissemination. It resulted in the most negatively reviewed dissemination activities, including internal communication, as rated by the respondents. An effective internal communication, however, as outlined in the theoretical framework, is key to an effective external communication. Furthermore, dissemination was viewed as a kind of chore by many interviewees because the European Union demands it: there was no understanding that it actually helps the project and all partners involved and is vital to the success of project KNOTS. One reason for this outcome could be that differently trained scientific staff had to work on professional communication and management tasks. The workshop may have helped to clarify the roles and expectations for each partner and get a better understanding for dissemination and its importance. After the workshop, the participants seemed to have a better understanding of it. It could also help to empower the role of communicators within an organization. Empowerment of communicators involved is therefore a key for an effective dissemination, not just in such a project but in the field of science communication in general. The experience from KNOTS depicts the need for similar projects that greatly discuss and reflect on the terms ‘dissemination’, ‘science communication’ and ‘Transdisciplinarity’ to get all partners on the same page.

As KNOTS shows, it can occur that people responsible for dissemination have little to no experience in this field and learning the necessary skills takes time. For the field of science communication, the case study of KNOTS can imply a need for professionalization, where either scientists acquire the necessary skills themselves (which means that they will have less time for

their subject-related research and also get additional tasks by disseminating on their own) or they are supported and/or accompanied by communication professionals (which means that the universities will have to provide staff, costing them money, which seems unlikely given the budgetary situation of many universities). Especially in a transdisciplinary research process, there needs to be a constant exchange and communication line held with partners and especially NAA which probably requires persons involved that are experienced in these matters, thus saddling scientists who operate in this environment with additional but crucial communication tasks. However, the experiences from KNOTS can be very useful, not just for future projects but to science communication in transdisciplinary Mode-2 knowledge production in general, as it differs from classical Mode-1 science communication: Mode-1 science communication is one-sided and basically publishes results of scientific research one-way; whereas Mode-2, as already outlined, incorporates NAA and aims at cooperation and two-way communication as part of the research process. In summary, this example of KNOTS shows that scientists who operate within Mode-2 are expected to gain and use new skills in dissemination and science communication and will doubtlessly have to be prepared to face a wide range of interlinked challenges and problems that will require a great deal of time to be addressed.

Bibliography

- Bernstein, Jay Hillel (2015): Transdisciplinarity. A Review of Its Origins, Development, and Current Issues. In: Journal of Research Practice Volume 11 (1), Article R1. Retrieved from: <http://jrp.icaap.org/index.php/jrp/article/view/510/412> (26.06.2019).
- Blassnigg, Martha/Punt, Michael (2013): Transdisciplinarity. Challenges, Approaches and Opportunities at the Cusp of History. Transtechnology research papers, Plymouth University. Retrieved from: http://www.trans-techresearch.net/wp-content/uploads/2015/05/TTRReader2012_001_Punt-Blassnigg.pdf (26.06.2019).
- Brüsemeister, Thomas (2000): Qualitative Forschung. Wiesbaden: Westdeutscher Verlag.
- Call for Proposal EAC/A04/2015 (2015): Development & Global Studies. Fostering multi-lateral knowledge networks of transdisciplinary studies to tackle global challenges (KNOTS).
- Chulalongkorn University (2018): KNOTS Project, <https://www.maids-chula.org/knots/> (26.06.2019).
- Dannecker, Petra/Vossemer, Christiane (2014): Qualitative Interviews in der Entwicklungsforschung. Typen und Herausforderungen. In: Dannecker, Petra/Englert, Birgit (Ed.): Qualitative Methoden in der Entwicklungsforschung. Wien: Mandelbaum, 153-175.
- Darbellay, Frédéric (2015): Rethinking Inter- and Transdisciplinarity. Undisciplined Knowledge and the Emergence of a New Thought Style. In: Futures, Volume 65, 163-174.
- Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (2012): Einleitung. Die drei Ebenen der Wissenschaftskommunikation. In: Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (Ed.): Handbuch Wissenschaftskommunikation. Wiesbaden: VS Verlag, 1-16.
- Dernbach, Beatrice/Schreiber, Pia (2012): Evaluation der Online-Kommunikation. In: Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (Ed.): Handbuch Wissenschaftskommunikation. Wiesbaden: VS Verlag, 363-372.
- Deutschmann, Anna (2014): Inhaltsanalysen. Qualitative Verfahren der Textanalyse und Textinterpretation. In: Dannecker, Petra/Englert, Birgit (Ed.): Qualitative Methoden in der Entwicklungsforschung. Wien: Mandelbaum, 94-110.
- European Commission (2017): Erasmus+ Programme Guide, http://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus/files/files/resources/erasmus-plus-programme-guide_en.pdf (26.06.2019).
- European Commission (2018a): Fostering Multi-Lateral Knowledge Networks of Transdisciplinary Studies to Tackle Global Challenges, <http://ec.europa.eu/programmes/erasmusplus/projects/eplu-project-details/#project/3091db11-2c23-475f-ae19-09a77acce52> (26.06.2019).
- European Commission (2018b): What is Horizon 2020?, <https://ec.europa.eu/programmes/horizon2020/what-horizon-2020> (26.06.2019).
- European Commission (2018c): H2020 Programme. Guidance: Social media guide for EU funded R&I projects, http://ec.europa.eu/research/participants/data/ref/h2020/other/grants_manual/amga/soc-med-guide_en.pdf (26.06.2019).
- Fährnich, Birte (2017): Wissenschaftsevents zwischen Popularisierung, Engagement und Partizipation. In: Bonfadelli, Heinz/Fährnich, Birte/Lüthje, Corinna/Milde, Jutta/Rhomberg, Markus/Schäfer, Mike S. (Ed.): Forschungsfeld Wissenschaftskommunikation. Wiesbaden: Springer VS, 165-182.
- Flick, Uwe (2007): Designing Qualitative Research. London: SAGE.
- Flick, Uwe (2009): An Introduction to Qualitative Research (4th ed.). London: SAGE.
- Flick, Uwe (2017): Qualitative Sozialforschung. Eine Einführung (8th ed.). Hamburg: Rowohlt Verlag.
- Gantenberg, Julia (2018): Wissenschaftskommunikation in Forschungsverbänden. Zwischen Ansprüchen und Wirklichkeit. Wiesbaden: Springer VS.
- Grunig, James E./Grunig, Larissa A./Dozier, David M. (2006): The Excellence Theory. In: Botan, Carl/Hazleton, Vincent (Ed.): Public Relations Theory II. New York: Lawrence Erlbaum Associates, 19-54.

- Grunig, James E./Grunig, Larissa A. (2008): Excellence Theory in Public Relations. Past, Present, and Future. In: Zerfass, Ansgar/van Ruler, Betteke/Krishnamurthy Sriramesh (Ed.): Public Relations Research. European and International Perspectives and Innovations. Wiesbaden: VS Verlag, 327-348.
- Hirsch Hadorn, Gertrude/Biber-Klemm, Susette/Grossenbacher-Mansuy, Walter/Hoffmann-Riem, Holger/Joye, Dominique/Pohl, Christian/Wiesmann, Urs/Zemp, Elisabeth (2008): The Emergence of Transdisciplinarity as a Form of Research. In: Hirsch Hadorn, Gertrude/Hoffmann-Riem, Holger/Biber-Klemm, Susette/Grossenbacher-Mansuy, Walter/Joye, Dominique/Pohl, Christian/Wiesmann, Urs/Zemp, Elisabeth (Ed.): Handbook of Transdisciplinary Research. Dordrecht: Springer, 19-42.
- Kaufmann, Alexander/Kasztler Andrea (2009): Differences in publication and dissemination practices between disciplinary and transdisciplinary science and the consequences for research evaluation. In: Science and Public Policy, 36 (3), 215-227.
- KNOTS (2017): Dissemination and Exploitation Plan. [Not available publicly]
- KNOTS (2018): Facebook-Page, <https://www.facebook.com/KNOTShighereducation/> (26.06.2019).
- Könneker, Carsten (2017): Wissenschaftskommunikation in vernetzten Öffentlichkeiten. In: Bonfadelli, Heinz/Fähnrich, Birte/Lüthje, Corinna/Milde, Jutta/Rhomberg, Markus/Schäfer, Mike S. (Ed.): Forschungsfeld Wissenschaftskommunikation. Wiesbaden: Springer VS, 453-476.
- Lamnek, Siegfried (2010): Qualitative Sozialforschung. Lehrbuch (5th, revised ed.). Basel: Beltz Verlag.
- Lüders, Christian (2004): Beobachten im Feld und Ethnographie. In: Flick, Uwe/von Kardorff, Ernst/Steinke, Inge (Ed.): Qualitative Forschung. Ein Handbuch. Hamburg: Rowohlt, 384-401.
- Lüthje, Corinna (2017): Interne informelle Wissenschaftskommunikation. In: Bonfadelli, Heinz/Fähnrich, Birte/Lüthje, Corinna/Milde, Jutta/Rhomberg, Markus/Schäfer, Mike S. (Ed.): Forschungsfeld Wissenschaftskommunikation. Wiesbaden: Springer VS, 109-124.
- Mayring, Philipp (2015): Qualitative Inhaltsanalyse. Grundlagen und Techniken (12th, revised ed.). Weinheim: Beltz.
- Miebach, Bernhard (2012): Organisationstheorie. Problemstellung – Modelle – Entwicklung (2nd. revised and ext. ed.). Wiesbaden: Springer VS.
- Nowotny, Helga/Scott, Peter/Gibbons, Michael (2001): Re-Thinking Science. Knowledge and the Public in an Age of Uncertainty. Cambridge: Polity Press.
- Peters, Hans Peter (2012): Das Verhältnis von Wissenschaftlern zur öffentlichen Kommunikation. In: Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (Ed.): Handbuch Wissenschaftskommunikation. Wiesbaden: VS Verlag, 331-340.
- Pfenning, Uwe (2012): Zur Evaluation von Modellprojekten zur Wissenschaftskommunikation. In: Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (Ed.): Handbuch Wissenschaftskommunikation. Wiesbaden: VS Verlag, 341-352.
- Pohl, Christian/Hirsch Hadorn, Gertrude (2008): Core Terms in Transdisciplinary Research. In: Hirsch Hadorn, Gertrude/Hoffmann-Riem, Holger/Biber-Klemm, Susette/Grossenbacher-Mansuy, Walter/Joye, Dominique/Pohl, Christian/Wiesmann, Urs/Zemp, Elisabeth (Ed.): Handbook of Transdisciplinary Research. Dordrecht: Springer, 427-432.
- Preusse, Joachim/Röttger, Ulrike/Schmitt Jana (2013): Begriffliche Grundlagen und Begründung einer unpraktischen PR-Theorie. In: Zerfaß, Ansgar/Rademacher, Lars/Wehmeier, Stefan (Ed.): Organisationskommunikation und Public Relations. Forschungsparadigmen und neue Perspektiven. Wiesbaden: Springer, 117-142.
- Rademacher, Lars (2009): Public Relations und Kommunikationsmanagement. Eine medienwissenschaftliche Grundlegung. Wiesbaden: VS Verlag.
- Reichertz, Jo (2016): Qualitative und interpretative Sozialforschung. Eine Einladung. Wiesbaden: Springer VS.
- Rhomberg, Markus (2017): Forschungsperspektiven der Wissenschaftskommunikation. In: Bonfadelli, Heinz/Fähnrich, Birte/Lüthje, Corinna/Milde, Jutta/Rhomberg, Markus/Schäfer, Mike S. (Ed.): Forschungsfeld Wissenschaftskommunikation. Wiesbaden: Springer VS, 407-428.
- Rogala, Anna/Bialowas, Sylwester (2016): Communication in Organizational Environments. Functions, Determinants and Areas of Influence. London: Palgrave Macmillan.

Rödter, Simone (2017): Organisationstheoretische Perspektiven auf die Wissenschaftskommunikation. In: Bonfadelli, Heinz/Fährlich, Birte/Lüthje, Corinna/Milde, Jutta/Rhomberg, Markus/Schäfer, Mike S. (Ed.): Forschungsfeld Wissenschaftskommunikation. Wiesbaden: Springer VS, 63-82.

Röttger, Ulrike (2009): Einleitung. Welche Theorien für welche PR? In: Ulrike Röttger (Ed.): Theorien der Public Relations. Grundlagen und Perspektiven der PR-Forschung (2nd, upd. and ext. ed.). Wiesbaden: VS Verlag, 9-28.

Szyska, Peter (2009): Organisation und Kommunikation. Integrativer Ansatz einer Theorie zu Public Relations und Public Relations-Management. In: Ulrike Röttger (Ed.): Theorien der Public Relations. Grundlagen und Perspektiven der PR-Forschung (2nd, upd. and ext. ed.). Wiesbaden: VS Verlag, 135-150.

Universität Wien (2018a): Third Mission, <http://thirdmission.univie.ac.at/> (26.06.2019).

Universität Wien (2018b): Third Mission. Aktivitäten, <http://thirdmission.univie.ac.at/third-mission-aktivitaeten/> (26.06.2019).

Universität Wien (2018c): Third Mission. Aktivitäten. Soziales und gesellschaftliches Engagement, <http://thirdmission.univie.ac.at/third-mission-aktivitaeten/soziales-gesellschaftliches-engagement/> (26.06.2019).

Universität Wien (2019): KNOTS, <https://knots.univie.ac.at/> (26.06.2019).

Weitze, Marc-Denis/Heckl, Wolfgang M. (2016): Wissenschaftskommunikation – Schlüsselideen, Akteure, Fallbeispiele. Heidelberg: Springer Spektrum.

Winter Ekkehard (2012): Von der Kommunikation über Wissenschaft zur wissenschaftlichen Bildung. In: Dernbach, Beatrice/Kleinert, Christian/Münder, Herbert (Ed.): Handbuch Wissenschaftskommunikation. Wiesbaden: VS Verlag, 27-32.

Zerfaß, Ansgar (2010): Unternehmensführung und Öffentlichkeitsarbeit. Grundlegung einer Theorie der Unternehmenskommunikation und Public Relations (3rd, upd. ed.). Wiesbaden: VS Verlag.