# Outreach and Science Communication in the DGS-Korpus Project: Accessibility of Data and the Benefit of Interactive Exchange between Communities

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#### Abstract

In this paper, we tackle the issues of science communication and dissemination within a sign language corpus project with a focus on spreading accessible information and involving the D/deaf community on various levels. We will discuss successful examples, challenges, and limitations to public relations in such a project and particularly elaborate on use cases. The focus group is presented as a best-practice example of a what we think is a necessary perspective: taking external knowledge seriously and let community experts interact with and provide feedback on a par with academic personnel. Showing both social media and on-site events, we present some exemplary approaches from our team involved in public relations.

Keywords: public relations, science communication, sign language community, DGS-Korpus project

#### 1. Introduction

'Just as there is science to be communicated, there is a science of communication.' (Fischhoff and Scheufele, 2013) Scientists who seek to inform the interested public about their work need to navigate through the highly exciting, yet also challenging field of science communication. In the case of the DGS-Korpus project, the dissemination of results as well as the publication and promotion of the products (the *Public DGS Corpus* and the *DW-DGS*, a digital and corpus-based dictionary of DGS<sup>1</sup>) to different communities is an important project goal.<sup>2</sup> In order to present these products and how they can be accessed or utilised, science communication and public relations are key elements.

Although science communication is by no means a young field of research, it is among the areas of research that have received the most public attention in recent years and is changing rapidly in response to new academic and technical circumstances. These developments include not only the public's changing perception of scientific research, but also more recent technical innovations and changes in dissemination platforms, such as social media channels. To an increasing extent, these platforms are being discovered by the various sciences, as they merge entertainment and information transfer. Furthermore, science communication is more and more recognised as a requirement in recent project conception and is demanded by funding parties as well as by the public at large.

Nevertheless, science communication is still under scrutiny, as it entails a history of misunderstandings

and mistrust. While scientists in the past often made the argument that the public lacked the necessary background knowledge and scientific literacy to understand certain scientific work, the public repeatedly accused scientists of being detached from everyday concerns and not very trustworthy.<sup>3</sup> While as a result, scientists may be hesitant to open up to the public, believing their work might not be properly understood and therefore criticised, in our view, it has proved fruitful to overcome this apprehension. One reason for this is the growing awareness that both parties, science and the public, may benefit from the exchange.<sup>4</sup>

To provide an insight into the dissemination activities and communicative goals and challenges of our project, the remainder of this paper is structured as follows. In §2, we discuss outreach and communication strategies in a sign language corpus project with a focus on target groups (in §2.1), in particular the German D/deaf community and DGS language community, and address the benefits of use case oriented approaches (§2.2). In §3, we discuss the guiding principles that influence our work and are prominent in, but of course not limited to, our specific field of sign language research. The following guiding principles are relevant for the provision of materials and corpus data: accessibility (§3.1), diversity (§3.2) and interaction (§3.3).

<sup>&</sup>lt;sup>1</sup>*DW-DGS*: 'Digitales Wörterbuch der Deutschen Gebärdensprache — Das korpusbasierte Wörterbuch DGS – Deutsch'

<sup>&</sup>lt;sup>2</sup>See §2.2 for a short introduction of the *Public DGS Corpus* and the *DW-DGS*.

<sup>&</sup>lt;sup>3</sup>See, for example, Weingart and Guenther (2016) on the issue of trust with respect to the field of science communication and also Bultitude (2011) for more recent events that have resulted in a decline in trust towards science. In their paper, Bubela et al. (2009) provide an overview of the development of science communication from the deficit model to the interactive model and deal with the challenges that science communication faces.

<sup>&</sup>lt;sup>4</sup>See, for example, Bultitude (2011) for more reasons why science communication is beneficial.

#### 2. Outreach and Science Communication

'Science requires the public's support. Whether it is forthcoming depends on how much the public trusts and values science.' (Fischhoff and Scheufele, 2013) While this quote refers to science in general, it is just as applicable to smaller fields of science or individual projects, as it is the case for the DGS-Korpus project. As the DGS-Korpus project aims to provide a freely accessible online corpus and dictionary for specific target groups, especially a target group that will be referred to herein as the DGS language community, the involvement of these groups is most important.<sup>5</sup> The DGS language community has been directly involved in the creation of the DGS corpus during data collection and data handling by being the source of the data as participants, by being involved in the data elicitation as interviewers, and by annotating and evaluating the data as language experts and scientists. For this reason, both products emerging from the DGS corpus, the Public DGS Corpus and the DW-DGS, are designed primarily with the DGS language community in mind and by actively involving experts from among them. The design of these online resources benefits from feedback of users who actively work with the resources provided by the project. Such feedback makes for a very fruitful type of extended peer review, as it highlights issues that have previously gone unnoticed, steers research in new directions, or reinforce paths already taken.

Since the DGS-Korpus project aims for a mutual exchange in which content is shared with the DGS language community and other target groups and these audiences contribute to the work of the project by means of feedback, the remaining question is: how can such an exchange be constantly optimised? As stated by Fischhoff and Scheufele (2013): '[I]f scientists want to be effective in their communication, they must understand and address the perspectives of interest groups.' One of the most important prerequisites for all outreach activities in the DGS-Korpus project is to be aware of the target group(s) that are to be addressed by certain outreach activities.

#### 2.1. Target Groups and Communities

'Instead of relying on personal experience or anecdotal observations, it is necessary to do careful audience research to determine which frames work for the target audiences.' (Bubela et al., 2009) While this statement can be fully agreed with in theory, the practical implementation poses challenges to many academic projects due to the lack of resources to conduct such a careful audience research. However, the thorough consideration of the audience with their language preferences or needs, their preferred media channels and the content they are interested in, can save a lot of time and effort, as outreach activities can be efficiently tailored to specific target groups.

The potential audience is composed of several subgroups with diverse needs and interests. For the sake of simplicity, we adopt a broad tripartite distinction and refer to the groups as the **DGS language community**, **scientific communities**, and the **interested public** in this paper.

The DGS language community refers to those who use the language DGS, and is itself composed of many subgroups, and may comprise individuals with or without a linguistic background (DGS teachers, for example, are usually linguistically trained). Likely the largest subgroup of the DGS language community is the D/deaf community, with those who use DGS as their everyday language. Furthermore, the language community includes people who might not use DGS as their everyday language, but on a regular basis with a high level of fluency, for instance interpreters and others who work together with D/deaf people. Also included in this group are people who are not yet fully fluent in DGS, for example students, prospective interpreters, parents of D/deaf children, and signing competent researchers. An important subgroup of DGS learners are students, who might use the DGS corpus and the emerging dictionary in various ways: as additional practice material in the context of their studies, as a resource for student research papers, and - for students on site - as hired transcribers in the DGS-Korpus project.

The above-mentioned examples of subgroups within the DGS language community are not intended to be seen as an exhaustive list, as the diversity of the DGS language community is immense, which is why groups are not always clearly assignable; for example, among the group of researchers there are both D/deaf scientist and DGS learners. 'People who are deaf reflect the full range of diversity found in the general population, with added layers of complexity related to levels and type of hearing loss, parental hearing status, access and ability to benefit from auditory-enhancing technologies, language usage based on signs and/or voice, and use of visually accessible sign languages.' (Harris et al., 2009) The above statement can certainly be extended to the DGS language community as a whole.

As a scientific long-term project, the DGS-Korpus project's **scientific target groups** include D/deaf and hearing researchers from the same discipline as well as from other disciplines, such as computational linguistics, cultural or heritage studies and others.

Also, we aim to address the very diverse group that is the **interested public**, persons without or with only little background knowledge on sign languages or D/deaf culture and little to no competence in DGS. For this target group, we usually highlight the importance of corpus data with regard to the cultural heritage that this resource offers, which is interesting for society in general.

<sup>&</sup>lt;sup>5</sup>See §2.1 on target groups and communities for more information on the diversity of the groups that the DGS-Korpus project seeks to address, and also briefly on how the DGS language community is composed.

#### 2.2. Use Cases

In addition to being conscious of the different target groups and their varying needs, such as language preferences, the bidirectional approach of the DGS-Korpus project also takes into account the requirements of specific use cases. For the project, it has proven most beneficial to identify specific user profiles and needs and address them through targeted outreach activities. For our outreach activities, we consider the following questions: For what purpose do users want to use the Public DGS Corpus or the DW-DGS? How would the user interact with the product, where would they look for specific information? Which applications might users not yet be aware of, and which options should be introduced to them? Some use case examples are given below. For this, the products of our project are briefly introduced first.

Both the Public DGS Corpus and the DW-DGS are based on the DGS corpus, a reference corpus of DGS. The Public DGS Corpus is a freely accessible subset (50 hours) of the reference corpus, that is completely translated and was first released in 2018. The content focuses on formats that are of interest to the D/deaf community, while also covering all task formats used during the elicitation, and showing all participants (given their consent). Releases covering new features and content are published on a regular basis (Hanke et al., 2020c).<sup>6</sup> Annotations and translations were subjected to careful quality assurance steps (Konrad et al., 2020b) and personal information of participants and third parties was anonymised (Bleicken et al., 2016). The different publication formats for the Public DGS Corpus,  $My DGS^7$ ,  $My DGS - annotated^8$  and My DGS $-ANNIS^9$  were designed with the needs of different target groups in mind (Jahn et al., 2018). My DGS (Hanke et al., 2020b) is a community portal, in which the videos are presented (in the browser) with optional German subtitles. The website was designed to be a low-threshold interface for easy access and is aimed at the D/deaf and DGS language community primarily, but also at the public. My DGS - annotated (Konrad et al., 2020a) is a research portal aimed at the international scientific community, in which the videos can be watched (online) with translations, annotations and comments. It also provides several download options and metadata. A third portal, My DGS - ANNIS (Isard and Konrad, 2022) provides an ANNIS (Krause and Zeldes, 2016) interface for advanced corpus queries and statistics.

The **DW-DGS**<sup>10</sup> is a digital dictionary, based on the DGS corpus, which provides a variety of information on individual sign entries, such as regional distribution and links to example sentences from the Public DGS

*Corpus.* Pre-release entries are already freely accessible. The dictionary is aimed at the DGS language community foremost, but also the scientific community.

For the DGS language community, as well as researchers and also the interested public, there are a variety of possible use cases and applications for the *Public DGS Corpus* and the *DW-DGS*, for example:

The *Public DGS Corpus* can be used as a language learning resource and to train visual perception. It can also be used as a cultural and historical archive, as the videos published for open access have been specifically selected to cover topics that are of interest to the D/deaf community and those interested in their culture. Of course, the *Public DGS Corpus* can also be used for research questions in a variety of scientific disciplines: linguistic questions as well as cultural or historical questions can be investigated. Other users might be interested in the way the *Public DGS Corpus* and the *DW-DGS* are linked and how they provide additional or complementary features for users.<sup>11</sup>

As these use cases are not always directly attributable to one specific target group, the individual outreach actions are mostly oriented towards usage possibilities. Certainly, the target groups and their needs are taken into account, too, so that a mixture of considerations regarding the target groups and different use cases emerges to guide the outreach actions.

#### 2.3. The Focus Group

In order to conduct a goal-oriented target group analysis of the DGS language community, and to identify different use cases of the project's products, we worked with a focus group, consisting of D/deaf experts from various regions across Germany, and D/deaf colleagues from the project. The support of D/deaf experts was crucial, as a target group cannot be determined from the projects' perspective alone, and insights from and about the DGS language community can best be provided by D/deaf experts. Since most of the members of the focus group have been involved with the project from its beginning, they are familiar with the project, its goals and values and have therefore evolved into very important consultants similar to an advisory board. They provide advice on various languagerelated issues, and were engaged in narrowing down subgroups within the DGS language community. As parts of their respective local D/deaf communities, the focus group communicates news and relevant information to and from the community and thus acts both as a spokesperson for the project as well as a source of feedback from the community. In this way, the focus group's role as bridges between the project and the D/deaf community is twofold: on the one hand, the focus group represents a target group, on the other hand they are an important internal element of the project's public relations work.

<sup>&</sup>lt;sup>6</sup>See here for a release history of the *Public DGS Corpus*.

<sup>&</sup>lt;sup>7</sup>http://meine-dgs.de

<sup>&</sup>lt;sup>8</sup>http://ling.meine-dgs.de

<sup>&</sup>lt;sup>9</sup>http://annis.meine-dgs.de

<sup>&</sup>lt;sup>10</sup>http://www.dw-dgs.de

<sup>&</sup>lt;sup>11</sup>See Müller et al. (2020) for more information on the linking of the *Public DGS Corpus* and the *DW-DGS*.

In regular meetings with the focus group, new features for the the *Public DGS Corpus*, the design and user interface of the *DW-DGS* and public relations, in particular the DGS language community as a target group, were discussed. In some cases, they themselves have taken the initiative: Some members of the group joined presentations about the DGS-Korpus projects' work as an integral part of the project team. An idea for a social media campaign including stepwise information packages in DGS video format was initiated and carried out by members of the focus group.

## 3. Guiding Principles

In their paper, Harris et al. (2009) postulate a list of terms of reference, 'principles and procedures that need to be considered when researchers decide to study Sign Language communities'. These terms of reference are understood as a 'code of research' that is intended to set ethical standards in interacting with the signing community. Outreach activities are of great importance when it comes to adhering to these principles and can contribute to complying with them. The basis for implementing these principles is that '[s]ign language communities' terms of reference (SLCTR) must be inclusive of the community's perspectives'. A fundamental point is that ' [i]nvestigators should take into account the worldviews of the Sign Language community' and that 'culturally competent researchers endeavor to build rapport despite differences, gain the trust of community members, and reflect on and recognise their own biases' (Harris et al., 2009, p.112). This is where outreach activities come into play.

Another general tenet that the DGS-Korpus project is committed to is the adherence to FAIR<sup>12</sup> (Wilkinson et al., 2016) and CARE<sup>13</sup> principles (Carroll et al., 2020). The FAIR principles (Findable, Accessible, Interoperable, Reusable) are concerned with the management of data sets for scientific (re-)use. They state that data should be both human- and machine-readable, well documented, accompanied by metadata, and easily accessible, e.g. through (persistent) identifiers, allowing data to be retrieved, accessed and exploited for further research purposes. The DGS-Korpus project strives to comply with these guiding principles, for example, by documenting work processes in detail including the publication of project notes and by providing detailed metadata and DOIs<sup>14</sup> as persistent identifiers. The CARE principles (Collective benefit, Authority to control, Responsibility, and Ethics) are a complement to FAIR that addresses the ethical implications of working with data from minority communities. The CARE principles are taken very seriously by the DGS-Korpus project. All stages of the project have involved D/deaf project members and advisors, participants were empowered through informed consent and legal control

of their recordings, portals were designed to encourage use by the D/deaf and DGS language communities and the corpus was actively designed to focus on the values and world-views of those communities, while usage conditions were designed to prevent harm. For a more detailed description of how the DGS-Korpus project has implemented FAIR and CARE principles, see Schulder and Hanke (2022).

In addition to these principles and the fundamental objectives of the DGS-Korpus project to adhere to ethical principles and provide open access to as much of the data as possible, certain guiding principles are of particular importance for outreach activities. The three most important of the guidelines that govern all outreach activities on these various channels are **accessibility**, **diversity** (of campaigns and content) and **interaction** (as opposed to uni-directional information).

## 3.1. Accessibility

While underlying principles and guidelines are essential, they 'do not clearly address the need for the researchers to establish trust with the participants in the community and to ensure that the participants view the research as collaborative and culturally valued' (Harris et al., 2009). Outreach activities can be considered the practical implementation of the guiding principles, which are intended to build this trust. However, trust can only be generated if comprehension is enabled, and for this purpose the DGS-Korpus project strives to design all outreach activities in an accessible way.

To ensure accessibility, most of the information on the web-presence, social media posts, and announcements of events and lectures are composed in either DGS and written German or International Sign and written English. The social media platforms Facebook and Instagram as well as the German version of the website are primarily used to address the DGS language community and the public, so content on these platforms consist of a DGS video and an equivalent text in written German. Social media posts are deliberately produced in a rather informal manner, using a more general non-scientific language register. DGS guarantees access for the signing D/deaf community, but not all members of the D/deaf community in Germany are fluent in DGS, and DGS learners come with different proficiency levels, while the public usually does not have a background in signing and might also rely on German texts rather than DGS videos.

As the Twitter channel and the English version of the website are aimed at an international (research) community, contributions here are published in English and International Sign.

## 3.2. Diversity

Another guiding principle, which stems not only from the diversity of the target groups but also from the general aim to provide information in a variety of ways to maintain interest, is to create a multitude of diverse

<sup>&</sup>lt;sup>12</sup>https://www.go-fair.org

<sup>&</sup>lt;sup>13</sup>https://www.gida-global.org/care

<sup>&</sup>lt;sup>14</sup>Digital Object Identifier, https://www.doi.org/

outreach campaigns, as a single campaign can never address the needs and interests of all target groups. Similarly, we find that reiterating the same campaign design for one specific target group quickly leads to a decrease of interest. Different user groups are interested in different information and seek this information in different ways and through different channels and platforms. Along with the aim to create a diverse range of activities, also comes a commitment to create activities in a manner that is as continuous as possible. The most regular contact with target groups can be held via our social media channels.

However, while social media provides a fertile platform for science communication, actual interaction is only possible to a limited extent via such platforms. Thus, our outreach activities aim at finding a balance between creating content for various (social media) channels on the one hand and, on the other hand organise exhibitions, events and lectures.<sup>15</sup> Some examples of activities are given below:

For those interested in the history and culture of the D/deaf community in Germany, a series of thematic specials was designed. Videos that highlight occasions or selected topics are posted on social media according to the occasion and are also published on a dedicated sub-page of MY DGS, where they can be accessed collectively.<sup>16</sup> In these specials, a teaser video shows transcripts from the Public DGS Corpus that correspond to the selected topic, for example the anniversaries of 9/11 or the fall of the Berlin Wall. Each video post is complemented by a link collection, leading to conversations on the topic in the Public DGS Corpus. The special videos are a recurring, yet diverse element on the social media platforms covered by the DGS-Korpus project and are complemented by other activities as seasonal greetings, announcements of news, and more.

Another recurring social media campaign is an annual advent calendar, with different thematic priorities, that is primarily designed to address the DGS language community and to draw attention to various features or content of the *Public DGS Corpus* or the *DW-DGS*. In terms of content, the calendars cover seasonal content associated with content from the *Public DGS Corpus* or the *DW-DGS* and thereby draws attention to features and contents of the products in an entertaining way.

As for activities outside of social media platforms, for instance, an interactive media station was placed in a permanent exhibition in a museum.<sup>17</sup> The exhibition displays both science and art with a focus on current

research projects and emphasises interactive formats with visitors. The media station was designed to address several audiences: People with or without a background in sign languages in general, people interested in DGS specifically, international visitors, passers-by or those interested in sign languages in general or DGS specifically. To address such diverse audiences, three different question-answer games were designed for the media station. The first quiz on sign languages in general is aimed at people with little or no knowledge of sign languages or DGS and contains yes/no-questions concerned with interesting facts regarding sign languages. The second quiz builds upon the first quiz, focusing on DGS and aiming at people with or without a background in signed languages or DGS. The third quiz is aimed at persons with a fair amount of background knowledge in DGS. Here, visitors are presented with three different variants of a sign and are asked to identify for which sign in a certain region in Germany the most occurrences can be found in the DGS corpus.

## 3.3. Interaction

Outreach activities take place on various channels, including a web presence, social media channels (Facebook, Instagram and Twitter), and more interactive formats such as a variety of different events and lectures (both online or on site) or permanent exhibitions. Furthermore, occasional press contributions are part of the outreach activities. When designing outreach activities on these platforms, efforts are made to strike a balance between information and interaction. The aim of most of our dissemination efforts is to provide an indication of where to find certain information, to illustrate usage possibilities of the Public DGS Corpus and the DW-DGS and to provide general information both on the project, its products and research results. However, (science) communication is not a one-way street and the DGS-Korpus project seeks to inform, as well as to interact.

With regard to open science, the European Commission states: 'When researchers share knowledge and data as early as possible in the research process with all relevant actors it helps diffuse the latest knowledge. And when partners from across academia [...] and citizen groups are invited to participate in the research and innovation process, creativity and trust in science increases.<sup>18</sup> Social media channels are a valuable means to diffuse knowledge, actual interaction and participation is only possible to a limited extent on such platforms. To ensure regular and timely responses to emails as well as messages on the different social media channels, a team of deaf and hearing people is responsible for monitoring them. However, the availability (and limits) of resources to interact is an important factor when it comes to regular interaction via so-

<sup>&</sup>lt;sup>15</sup>This balance was shifted in favour of the social media channels and web presence in times of the pandemic, resulting in increased media traffic. as a flexible adaptation to the current situation. However, the future focus will be on on-site events for productive exchanges.

<sup>&</sup>lt;sup>16</sup>https://www.sign-lang.uni-hamburg.de/ meinedgs/extras/specials.html

<sup>&</sup>lt;sup>17</sup>The Humboldt-Forum is a long-term exhibition in Berlin that was opened digitally in 2020 and on-site in 2021.

<sup>&</sup>lt;sup>18</sup>https://ec.europa.eu/info/researchand-innovation/strategy/strategy-2020-2024/our-digital-future/open-science\_en

cial media, as moderation on all platforms is necessary, which also entails regular monitoring. This can only be accomplished to a certain extent, therefore we attempt not to invite interaction unless we are confident that the responses can be handled. To enable direct interaction, on-site events have proven to be the better choice. Some examples of interactive events for the respective target groups are given below:

For the interested public, exhibition stands were organised several times at different events. Here, the focus of the presentation lay on the display of the project's work, for instance (film) technology used in the project was shown and supplemented with posters explaining the procedure of corpus creation, the analysis of corpus data, and the current state of work in the project. All these formats were planned in such a way that visitors could move around the stand independently and approach the colleagues from the project with questions. For the scientific community, the releases of the Public DGS Corpus in particular were announced at specific events, such as a public announcement ceremony of Release 3 (Konrad et al., 2020a) as a satellite event of the thirteenth edition of the TISLR (Theoretical Issues in Sign Language Research) conference. Here, we mainly presented (technical) innovations and offered many opportunities to trial and test, while colleagues as well as student assistants were present to explain the new functions and to answer questions. Furthermore, poster presentations at conferences offer invaluable opportunities for direct interaction and feedback.

Events specifically targeted at the D/deaf and DGS community included exhibition stands and presentations (for example at the Deaf Messe (deaf fair) or the Kulturtage der Gehörlosen (culture days of the deaf)). These presentations mainly concentrated on the usage possibilities the products offer for the community, as well as research results and the current project status. Another example was an online event, in which the project's divisions each gave 5-minute input presentations on their current state of work during the pandemic. Student assistants and interpreters were also involved as presenters, as their work is of enormous value to the success of our project outcomes. Most of the time was reserved for feedback and questions following the input presentations. This event was conducted online and proved to be a suitable format to achieve a wellbalanced mix of information and interaction.

Furthermore, the tool SIGNHUNTER was programmed to allow the community to actively participate in the collection of additional individual signs. SIGNHUNTER is meant to create a way of interacting that allows the D/deaf and DGS language community to participate in the decision of which individual signs are collected by the DGS-Korpus project by suggesting topics of interest, that are then displayed in SIGNHUNTER as word lists. From these word lists, participants can then select the concepts they are familiar with and record one or more signs and thereby add them to the database. Possible topics and concept lists for SIGNHUNTER have been suggested by the focus group, such as signs for cities and locations. (SIGNHUNTER is described in more detail in (Hanke et al., 2020a).) In the Rome Declaration on Responsible Research and Innovation, the European Commission states: 'Excellence today is about more than ground-breaking discoveries – it includes openness, responsibility and the co-production of knowledge' ).<sup>19</sup> Although the tool was not yet been widely used due to the pandemic, first tests show that by means of SIGNHUNTER, co-production of content can be actively implemented.

Last, but not least, one of the most important sources of interaction is the exchange with the focus group. To name one example of an issue where direct interaction with the focus group was of great importance and value: there is an ongoing debate about the use of the term 'mother tongue' (*Muttersprache*), that was discussed in great detail with the focus group. Suggestions comprised alternatives such as 'main language' (*Hauptsprache*) or 'base language' (*Basissprache*), but most interestingly in relation to debates in the field of spoken languages, the term 'first language' (*Erstsprache*) was not approved of by any of the members of the focus group.

## 4. Discussion

The discussion will be devoted to recurring issues, that we cannot resolve conclusively, but will surely continue to be relevant for future debates on how to implement public relations and dissemination into project management. The first issue concerns the effort and the benefit of outreach activities and the constant trade-off between the two. This question is related to available resources and how to manage existing resources to be as efficient as possible. The second point concerns the indirect pressure to be up-to-date at all times, which requires an enormous effort, especially when it comes to social media, as discussions and opinions on the internet are extremely dynamic. We share some reflections and experiences related to this questions below.

#### 4.1. Available Resources

In scientific projects, the main focus is on scientific work. While outreach activities are an increasingly important part of scientific work, they are not the main focus, which is why the resources available for outreach are limited. Rarely are people in science projects solely responsible for outreach, and rarely have they had the background training to do so. As a result, a balance has to be found: on the one hand, the importance of outreach cannot be emphasised clearly enough. On the other hand, outreach activities must be in reasonable relation to the effort of the entire project and also be

<sup>&</sup>lt;sup>19</sup>https://www.sis-rri-conference.eu/wpcontent/uploads/2014/12/RomeDeclaration\_ Final.pdf

feasible as such. Below, we discuss some examples of how the advantages and disadvantages of particular outreach activities have been weighed for campaigns previously conducted by the DGS-Korpus project.

When it comes to social media campaigns in particular, balancing effort and benefit is not that straightforward, as each medium entails its own requirements and contributions cannot easily be transferred from one medium to the other. This especially applies to information in a signed language, i.e. when the main format is video. Due to their different objectives, the different social media platforms are naturally also used by different target groups. For the outreach activities, however, this means that designing a post to be published on all platforms is expedient. Then again, social media posts can be created with much less effort than on-site events, for example. They are therefore well suited for establishing regular contact with our target groups.

On-site activities usually take place only once, and the amount of work is quite high in relation to the number of participants that can be addressed at a one-time event. In contrast, however, the benefits of an event on-site are usually very significant, as direct interaction with visitors can take place. A similar situation applies to contributions to a permanent exhibition (as described above): This exhibition has required more effort than one-time events, but can remain in place for a longer period of time, and will thereby reach a much larger audience. In addition, permanent exhibitions do not require project staff to be on-site during the exhibition period. However, this also means that interaction is only possible to a limited extent, for example in the form of a programmed station or the possibility of contacting project staff after the visit. In this case, the workaround approach for the DGS-Korpus project was to complement a permanent exhibition with a onetime event where a colleague from the project would give a presentation and then be available afterwards for direct interaction and questions in a meet the scientist format.

Another example where the decision was made in favour of the effort is the publication of project-internal project notes. The project notes offer a low-threshold access to the methods applied in the DGS-Korpus project. The advantages of publishing these papers are an increased insight into how the data in the DGS corpus are composed, as they provide access to projectinternal processes and workflows. The target group consists of scientists from the same or others disciplines, especially those who are planning a similar project, and in principle also the interested public.

With any outreach activity, it remains a recurring consideration of whether and when an activity is profitable to undertake, especially given that the main focus of a scientific project is research. For outreach activities of the DGS-Korpus project, we work out the efforts and benefits with a focus on dissemination to the D/deaf community, and then do our best to find ways to overcome obstacles, but also not to launch campaigns that we cannot possibly do justice.

# 4.2. Current Trends

The DGS-Korpus project strives to be informed about current discussions, trends and developments to a certain degree in order to be able to react accordingly. Both for long-term changes, such as the increased sensitivity to gender-fair language in recent years, but also for short-term emerging issues, it might be necessary to take a stand. The challenge is that some of these developments, particularly in social media, are subject to rapid change and being up-to-date to all current changes and trends would require a constant monitoring of science-related news on the internet, while resources (as noted above) for outreach activities are limited. In addition to constant monitoring, some reactions to certain developments must follow promptly, which is not always feasible in a project whose main focus is (as it should be) on research.

Therefore, in addition to efforts and benefits of campaigns, we also try to foresee whether a reaction is appropriate and then discuss how to implement the necessary changes in accordance with the self-representation of the project.

As noted above, an example of an ongoing, but still current debate is gender-fair language, first with regard to written language, but it also refers to DGS in upcoming debates. On this issue, the DGS-Korpus project decided to follow the University guidelines for genderfair written language, as they are in line with the values and self-image of the project. Another highly important response to contemporary developments was to provide all publications of the project with DOIs to facilitate permanent access and citation (see FAIR principles above).

# 5. Conclusion

In this paper, we have discussed outreach activities of the DGS-Korpus project and presented guiding principles for decision-making with regard to public relation campaigns and science communication in our field. Not only funding institutions set dissemination activities as a requirement for projects, but also society in general as well as, in our case, the D/deaf and DGS language community rightfully demand for knowledge transfer. This is why we, as a deaf and hearing team, dedicate significant effort into overcoming limitations and challenges, and aim to produce both scientific and interactive output in an accessible way.

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### 7. Bibliographical References

- Bleicken, J., Hanke, T., Salden, U., and Wagner, S. (2016). Using a language technology infrastructure for German in order to anonymize German Sign Language corpus data. In Calzolari, N., et al., editors, *Proceedings of the 10th International Conference on Language Resources and Evaluation (LREC 2016)*, pages 3303–3306, Portorož, Slovenia. ELRA.
- Bubela, T., Nisbet, M. C., Borchelt, R., Brunger, F., Critchley, C., Einsiedel, E., Geller, G., Gupta, A., Hampel, J., Hyde-Lay, R., et al. (2009). Science communication reconsidered. *Nature Biotechnology*, 27(6):514–518. DOI: 10.1038/nbt0609-514.
- Bultitude, K. (2011). The why and how of science communication. In Rosulek, P., editor, *Science Communication*. European Commission, Pilsen.
- Carroll, S. R., Garba, I., Figueroa-Rodríguez, O. L., Holbrook, J., Lovett, R., Materechera, S., Parsons, M., Raseroka, K., Rodriguez-Lonebear, D., Rowe, R., et al. (2020). The CARE principles for Indigenous data governance. Data Science Journal, 19(43):1–12. DOI: http://doi.org/10.5334/dsj-2020-043.
- Fischhoff, B. and Scheufele, D. A. (2013). The science of science communication. Proceedings of the National Academy of Sciences, 110(Supplement 3):14031–14032. DOI: 10.1073/pnas.1312080110.
- Hanke, T., Jahn, E., Wähl, S., Böse, O., and König, L. (2020a). SignHunter – a sign elicitation tool suitable for deaf events. In Efthimiou, E., et al., editors, *Proceedings of the LREC2020 9th Workshop on the Representation and Processing of Sign Languages*, pages 83–88, Marseille, France. ELRA.
- Hanke, T., König, S., Konrad, R., Langer, G., Barbeito Rey-Geißler, P., Blanck, D., Goldschmidt, S., Hofmann, I., Hong, S.-E., Jeziorski, O., Kleyboldt, T., König, L., Matthes, S., Nishio, R., Rathmann, C., Salden, U., Wagner, S., and Worseck, S. (2020b). *MEINE DGS. Öffentliches Korpus der Deutschen Gebärdensprache, 3. Release.* Universität Hamburg, DOI: 10.25592/dgs.meinedgs-3.0.
- Hanke, T., Schulder, M., Konrad, R., and Jahn, E. (2020c). Extending the Public DGS Corpus in size and depth. In Efthimiou, E., et al., editors, *Proceedings of the LREC2020 9th Workshop on the Representation and Processing of Sign Languages*, pages 75–82, Marseille, France. ELRA.
- Harris, R., Holmes, H. M., and Mertens, D. M. (2009). Research ethics in sign language communities. *Sign Language Studies*, 9(2):104–131.
- Isard, A. and Konrad, R. (2022). MY DGS ANNIS: ANNIS and the Public DGS Corpus. In *Proceedings*

of the LREC2022 10th Workshop on the Representation and Processing of Sign Languages, Marseille, France. European Language Resources Association (ELRA).

- Jahn, E., Konrad, R., Langer, G., Wagner, S., and Hanke, T. (2018). Publishing DGS Corpus data: Different formats for different needs. In Bono, M., et al., editors, *Proceedings of the LREC2018 8th* Workshop on the Representation and Processing of Sign Languages, pages 83–90, Miyazaki, Japan. ELRA.
- Konrad, R., Hanke, T., Langer, G., Blanck, D., Bleicken, J., Hofmann, I., Jeziorski, O., König, L., König, S., Nishio, R., Regen, A., Salden, U., Wagner, S., Worseck, S., Böse, O., Jahn, E., and Schulder, M. (2020a). MY DGS – annotated. Public Corpus of German Sign Language, 3rd release. Universität Hamburg, DOI: 10.25592/dgs.corpus-3.0.
- Konrad, R., Hanke, T., Langer, G., König, S., König, L., Nishio, R., and Regen, A. (2020b). Public DGS Corpus: Annotation conventions. Project Note AP03-2018-01, Hamburg University, Hamburg, Germany. DOI: 10.25592/uhhfdm.822.
- Krause, T. and Zeldes, A. (2016). ANNIS3: A new architecture for generic corpus query and visualization. *Digital Scholarship in the Humanities*, 31(1):118–139. DOI: 10.1093/11c/fqu057.
- Müller, A., Hanke, T., Konrad, R., Langer, G., and Wähl, S. (2020). From dictionary to corpus and back again – linking heterogeneous language resources for DGS. In Efthimiou, E., et al., editors, *Proceedings of the LREC2020 9th Workshop on the Representation and Processing of Sign Languages*, pages 157–164, Marseille, France. ELRA.
- Schulder, M. and Hanke, T. (2022). How to be FAIR when you CARE: The DGS Corpus as a case study of open science resources for minority languages. In *Proceedings of the 13th International Conference* on Language Resources and Evaluation, Marseille, France. European Language Resources Association (ELRA).
- Weingart, P. and Guenther, L. (2016). Science communication and the issue of trust. Journal of Science communication, 15(5):C01. DOI: https://doi.org/10.22323/2.15050301.
- Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., Blomberg, N., Boiten, J.-W., da Silva Santos, L. B., Bourne, P. E., et al. (2016). The FAIR guiding principles for scientific data management and stewardship. *Scientific Data*, 3:160018. DOI: 10/bdd4.