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The Q methodological survey

Exploring Translational Research at the BIH

DZHW Report No. 03

February 2016

DZHW
Deutsches Zentrum für
Hochschul- und Wissenschaftsforschung

BERLIN
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OF HEALTH
Charité & Max Delbrück Center

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February 2016

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Executive Summary

- No clear concept of TR is available in the overall research literature, as was shown in the first iFQ-BIH-Report (Blümel et al. 2015). Furthermore it remains unclear which phases of the (bio)medical research process are translational or somehow affected by TR.

- Different ways of identifying goals in TR exist, as was shown in the second DZHW-BIH Report (Blümel et al. 2016). They range from approaches focusing on interaction and negotiation between organizational hierarchies to approaches oriented towards attaining funding. No clear-cut concept of how to organize TR and no TR-specific quality management or evaluation of TR processes can be discerned.

- There is no clear concept of TR at BIH neither. Exploratory interviews at BIH reveal a similar picture as we described in the first two reports. Interviewees emphasize different aspects, according to their occupation (especially level of hierarchy) and field of work, which are or should be addressed by TR.

- The current report[1] outlines a survey instrument, based on exploratory interviews, to investigate the views on TR within BIH. The main points of interest are:

  - Where in the (bio)medical process of producing knowledge and effective treatments should translation be improved?

  - Which measures are best suited to improve translation?

[1] We thank Clemens Blümel, Stephan Gauch and Anne Krüger of Humboldt University Berlin for their assistance and their input in the planning stage as well as Arno Simons of the German Centre for Higher Education Research and Science Studies for his valuable comments that greatly improved the report.

The Q methodological survey

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1 Introduction

This report describes the development and implementation of a Q methodological survey at BIH. This Q survey marks the third phase of BIH's Translational Research project in cooperation with the iFQ[2]. The first phase aimed at reconstructing how Translational Research (TR) is understood and organized as a concept in the literature. The findings are elaborated in our first report "In Search of Translational Research: Report on the Development and Current Understanding of a New Terminology in Medical Research and Practice" (Blümel et al. 2015). The second phase was an in-depth analysis of organizational processes and practices used to establish, organize, and evaluate TR in key research organizations in the United States. The findings are described in our second report "Organizing Translational Research: Report on the Establishment, Organization, and Evaluation of the Translational Research Process in leading US Organizations" (Blümel et al. 2016).

Our first report shows that multiple definitions of TR are discernible in the literature. TR binds different expectations of multiple stakeholders towards a range of problems in the area of (bio)medical research: TR means different things to different people (cf. Butler 2008). Furthermore, there is no consensus on which phases of the (bio)medical research process are translational or somehow affected by TR. These findings were validated in the interviews for our second report. Both reports further demonstrate that there is neither a dominant way of "doing" translation nor a clear concept of either quality standards or best practice guidelines in relation to TR. A range of institutions and organizations in the United States and Europe are dedicated to TR, but follow different conceptual frameworks and different ways of identifying the goals of TR. Such goals are set, for example, by negotiation between the organizational hierarchies, by asking the researchers and identifying their needs, or just by responding to external funding programs. Thus no standardized survey instrument, which evaluates the implementation of TR exists.

To support decisions on how to implement TR within the BIH[3] the third phase aims at developing and conducting a systematic survey to capture how TR is understood within the BIH. The need, usefulness, and acceptance of new goals and measures are crucial for their impact. Including the people affected by a certain goal or measure in the process of defining it motivates and supports commitment (Felfe 2008).

The development of the Q methodological survey required a first explorative step in which we conducted several interviews with people at the BIH. These resulted in preliminary results about the understanding of TR, its prominence and importance. An initial analysis of those interviews revealed a picture similar to the findings in our previous reports. Actors on different hierarchical levels and in different fields of work emphasize different aspects that are or should be addressed by TR. In addition, the interviewees named different phases of the (bio)medical research process where they think a translation should take place or is problematic. Furthermore, some interviewees regard TR as a big chance but as a challenge too. Some experience TR as a mere hype and described it as nothing new. And some criticized that there are so many viewpoints regarding TR,

[2] Since January 1, 2016 the iFQ continues its work as Department 2 "Research System & Science Dynamics" of the German Centre for Higher Education Research and Science Studies (Deutsches Zentrum für Hochschul- und Wissenschaftsforschung, DZHW)

[3] From now on BIH always includes Charité and MDC.

that everyone understands the concept differently, or that they don't understand what TR is. The interviews thus showed that there is no clear concept of TR within the BIH neither.

On the BIH website it is claimed that "BIH's outstanding feature is the close cooperation of biomedical researchers, clinical researchers, and clinical practitioners" (BIH 2015). However, to assure an effective collaboration it is essential that all persons involved share an understanding of key elements relevant to the overall goal (Kozlowski and Ilgen 2006). As the interviews showed, this is currently not the case within the BIH. In a second step we therefore want to deepen the analysis by asking more people more systematically about their understanding of TR respectively their understanding of the (bio)medical process of producing knowledge and effective treatments. We will investigate where in this process translation should be improved and which measures are best suited to improve it.

This Q methodological survey will focus on the BIH funding line "Research Projects". There are further funding lines within the BIH: "Biomedical Academy" (education) and "Core Facilities" as well as the "Clinical Research Units" (infrastructure). Our previous reports showed that education and infrastructure are crucial for TR as well. The interviews at the BIH confirm this conclusion regarding education. Many interviewees emphasized the importance of (further) training at multiple career levels. Concerning infrastructure the interviews give an ambiguous result. While some interviewees saw great potential for innovation in the core facilities or generally in infrastructure, others were more critical or uninterested. They complained about the management of infrastructure, about its quality, or about its expenses. Some interviewees saw no need for these infrastructural measures. To get a more complete picture of the situation at the BIH we strongly suggest additional surveys which focus on the other two domains.

The planned Q methodological survey involves card sorting tasks together with short interviews and short questionnaires. This mix of complementary methods is common standard and part of the so-called Q methodology (Stephenson 1935). In the following section, we outline the general approach and how we adopt it to the specific object of study.

2 Methodological approach

This section describes the methodological approach of the Q survey instrument. First we outline the general approach and then we specify how we adopt it to the specific object of study.

2.1 Q methodology in general

The aim of Q methodology is to explore opinions and attitudes, to reveal and to understand the predominant viewpoints within a group regarding a topic of interest, i.e. how people think about a specific topic (Stephenson 1953). Especially if the subject matter is not well known and controversial or if the subjective viewpoints are crucial, it can give valuable insights and clarification. Q methodology has been used to study many different topics, e.g. the use of research information in clinical decision making (McCaughan et al. 2002; Thompson et al. 2001a, 2001b). Akhtar-Danesh, Baumann and Cordingley (2008) give an overview about Q methodology in nursing research and a recent study analyzed the viewpoints of researchers and practitioners regarding which factors affect the success of global software development projects (Vizcaíno et al. 2013).

The data collection in Q methodology involves a card sorting task together with a short interview and/or a short questionnaire. Cards with different statements related to a specific topic (Q set)[4] are presented to the participants who are asked to sort these cards with regard to a posed question within a ranking from e.g. most agree to most disagree. Other than the ranking in a conventional questionnaire, the statements are ranked in relation to each other. The different statements are collected by the researcher by means of interviews, the literature and other media, e.g. videos or policy documents. To be able to interpret the resulting card sorting patterns (Q sorts)[5] adequately an additional interview and/or questionnaire[6] is conducted. The data analysis involves an adaptation of Charles Spearman´s method of factor analysis together with the interpretation of the interviews and questionnaires (Watts and Stenner 2012). The following subsections describe the development of our Q methodological survey.

2.2 Q methodology in particular – The survey

TR is an ambiguous concept with multiple, partly conflicting definitions. Moreover, the viewpoints of the researchers and clinicians who are part of the (bio)medical process of producing knowledge and effective treatments are crucial for the implementation of TR. Therefore we chose Q methodology, to get insights into the experiences of key actors within the BIH. Our survey involves two research questions:

- Where in the (bio)medical process of producing knowledge and effective treatments should translation be improved?
- Which measures are best suited to improve translation?

We collected the statements for both questions by means of literature and policy documents as well as the interviews within the BIH. The following subsection describes this process.

[4] A Q set includes all the statements regarding a specific topic or question.
[5] A Q sort refers to one sorting pattern of all the statements.
[6] To explore why the participants sorted the statements in this particular manner and for further information about the participants which could affect and therefore explain the resulting viewpoints (e.g. field of work).

2.2.1 Collecting the statements

To cover a broad sense of TR we collected the statements for the card sorting tasks by means of two kinds of sources: A theoretical source (research articles and policy papers) and an empirical source (the transcripts of the interviews at the BIH).

Literature review

We prepared a sample with 345 research articles. All research articles were retrieved from 'PubMed' (5.1 Retrival Strategy). PubMed introduced the classification category (Medical Subject Heading (MeSH)) "Translational Medical Research" in 2010, which builds the main basis for our article search. This classification category of literature was supplemented in 2012 and covers "applications of discoveries generated by laboratory research and preclinical studies to the development of clinical trials and studies in humans. A second area of Translational Research concerns enhancing the adoption of best practice" (NCBI 2012). All the articles have a clear focus on TR, i.e. TR is included in the title or abstract. The articles contain a rather structural perception towards TR as it covers the overall negotiation of TR in the field of (bio)medical research.

In addition, we used a sample of various policy documents. We define those documents as policy documents, which comprise organizational recommendations towards successful TR-practice. The sample contains 7 documents from the BIH (e.g. the "BIH-scientific concept") and one position paper from an American and 12 papers from German research organizations. The policy papers focus an organizational perception towards TR and give a deeper insight into ideas of implementation procedures of TR.

The extensive literature review allowed us a deeper insight at a theoretical and general level. It revealed several key aspects which are discussed in the context of TR. To get an impression on a more specific level we further conducted interviews within the BIH.

Interviews

We conducted 28 interviews with researchers, clinicians and administrative staff from the BIH. With an interview, in this context, we refer to non-standardized face-to-face interviews (Gläser and Laudel 2010). The interview reveals a deep insight into how the interviewee thinks about a certain topic and about his/her experiences with it (Kvale 2008). Specific questions are asked by the interviewer and the interviewee gives complex answers. It allows a deep understanding because further questions can be put if the given information is not clear enough. And it can reveal aspects which were not anticipated.

To capture individual perspectives regarding TR we developed a semi-structured interview, i.e. an open interview with a framework of themes, which we wanted to explore but without a restriction of the specific content or order of the questions. No restrictions were posed regarding the content or length of the answers. The overall goal of the interviews was to get an insight into the individual definition of TR and into practices and organizational procedures regarding TR. To cover a broad sense of TR at the BIH, we addressed the four following themes.

- **Knowledge Transfer**: The first domain includes questions about the origin of and inspiration for research questions, about the utilization of research results, and about the cooperation between researchers.

- **Organizational practices**: The second domain comprises questions about organization and administration of the interviewee's research, about problems and support, and about use of infrastructure.
- **Individual understanding of TR**: In a third domain we asked about individual opinions on what constitutes TR.
- **Education**: A fourth domain asked for recommendations concerning the education of TR and how researchers and clinicians could be better prepared for TR.

In consultation with the BIH we decided to recruit interviewees from three different areas. To capture the different forms of expertise we developed a separate interview for each specific area with a somewhat different focus regarding the themes listed above.

We interviewed people from management and administration (e.g. head office, board of directors), from scientific services (e.g. research infrastructure), and researchers and clinicians on different career levels (e.g. Professorships, PhD-Projects)[7]. Nevertheless, positions were sometimes mixed, so that people from the management and administration level could also tell about their (past) research activities. We tried to cover research areas evenly from the two research institutions Charité and MDC, as they are equally embedded into the BIH. To find interviewees from the different areas we used the internet homepages of the Charité, the MDC and the BIH. The participants were selected because of their position, randomly[8] or they contacted us. We contacted them via email and sent an invitation for the interview. If they did not respond, we sent the invitation a second time after two weeks. In general, the response rate was low. In cases of no response, we tried to contact after another week via phone. This raised the response rate. If the contacted person rejected to participate or if we could not reach him/her at all[9], we contacted a potential successor-candidate, who had a similar position and a similar field of work, the same way.

Making appointments with people from the administration as well as with scientists and other people, who are directly connected with the BIH was easier than getting access to the group of "Clinical Scientists", as there were no contact addresses available online. To get in touch with them we presented our study at the "Clinical Scientist-Jour Fixe". Furthermore, clinicians were difficult to reach also. Their contact information online were sometimes outdated or they were not able to answer the phone. Most of the ones we could reach rejected our invitation on the grounds of not having enough time or not recieving an expense allowance. Except for clinicians, all of the chosen participant groups/areas were covered. As a result of the difficulties, the recruitment process lasted from September 2015 until January 2016.

The length of an interview varied between 15 minutes and over 60 minutes. The extent of involvement and interest regarding TR at the BIH was extremely different. We also met interviewees, who had no idea of the TR-concept. With the interviews, we got an insight into the daily life expression and specific vernacular of the various persons, which were interviewed. In contrast to research articles and organizational documents, individual perspectives regarding the personal working context at the BIH could be determined. Knowing and adapting this specific vernacular supported the development of the statements (Q sets). In addition, this will support the general acceptance and comprehension of our survey instrument.

[7] To ensure anonymity of the interviewees, we do not list the individual positions.
[8] Randomly if more than one person had a specific position of interest.
[9] Not reaching at all means after calling with a daily interval at different times of the day for 7-14 days.

The Q sets

The development of the Q sets, i.e. the sets of statements for the sorting tasks, took place in several steps. In a first step, the research articles, policy papers, and transcripts of interviews were analyzed with the data analysis software MAXQDA and through the methodological approach of "Qualitative Content Analysis" (Mayring 2000). Qualitative content analysis is a technique for systematic text analysis. Objects of a qualitative content analysis can be all sorts of recorded communication, e.g. transcripts of interviews, protocols, transcripts of discourses, etc. One of the fundamental approaches of a qualitative content analysis is inductive category development. The main goal of this approach is "to develop the aspects of interpretation, the categories, as near as possible to the material, to formulate them in terms of the material" (ibid.). According to this approach, we coded all passages in the documents and text transcripts that refer to any kind of definition and/or description of TR. At the end of the coding process, a complex and multidimensional code system was developed.

The two different sources address distinct target groups, which leads to various levels of abstraction regarding the expression in the texts or transcripts. The expression in the interviews, e.g., is more detailed and affected by daily life practices than the expression in research articles or policy papers. Interview transcripts are marked by individual experiences. Compared to them, policy papers are structured by recommendations regarding organizational procedures. The different sources helped to get an extensive impression about the understanding of TR and about the prominence of discussed aspects. Furthermore, it helped to get familiar with the wordings regarding this subject since this is essential for the development of the statements.

We developed the Q sets on the basis of the multidimensional code system. We repeatedly reduced the number of the statements by summarizing similar ones until we found a balance between adequate coverage and a handy format. We also repeatedly evaluated the wording of the statements to reach a maximum of comprehensibility for the Q sets. The two research questions with the resulting Q sets are presented in the following subsection.

2.2.2 Research questions

The interviews within the BIH revealed varying degrees of knowledge, involvement and interest regarding TR. The research questions of the Q methodological survey are therefore not asking for TR directly. They address the (bio)medical process of producing knowledge and effective treatments in general. Everyone who is involved in this process should be able to express his/her viewpoints regarding where and what can and should be improved in this process.

Where in the process should translation be improved?

Our first report (Blümel et al. 2015) showed that there is no consensus on which phases of the (bio)medical process of producing knowledge and effective treatments are, could, or should be translational or somehow affected by TR. The literature review and the interviews at the BIH validated these finding. The localizing ranged from a specific designation of phases and a direction of translation to more abstract levels which included remarks like "from bench to bedside". Some interviewees emphasized the transfer from basic to clinical or applied science as most important, some mentioned that this direction is less problematic than the one from clinical to basic science. Others mentioned the further course to public health. And there were interviewees which described that the translation of results from basic to applied science is not problematic per se but

requires time. Thus it remains unclear where in the research process a translation of results from one to another phase is successful or problematic. Accordingly, it is unclear where measures should be implemented. The first research question addresses this issue by asking the participants explicitly to rank different phases according to where in the (bio)medical process of producing knowledge and effective treatments, translation between different phases needs improvement the most. Table 1 shows the Q set, i.e. the statements which are to be sorted according to the question: "Where in the process should translation be improved?"

Table 1 Q set 1

01	Unspezifische Grundlagenforschung → Forschung zur Wirkstoffsuche/findung
02	Forschung zur Wirkstoffsuche/findung → Präklinische Wirkstoffprüfung (in vitro und/oder Tierversuche: Untersuchung der Wirksamkeit und Sicherheit)
03	Präklinische Wirkstoffprüfung (in vitro und/oder Tierversuche: Untersuchung der Wirksamkeit und Sicherheit) → Phase 1 - Studien (kleine Gruppen gesunder Menschen: Untersuchung der Wirkung, Verteilung und Verstoffwechselung im Körper, Überprüfung der Sicherheit und Verträglichkeit)
04	Phase 1 - Studien (kleine Gruppen gesunder Menschen: Untersuchung der Wirkung, Verteilung und Vestoffwechselung im Körper, Überprüfung der Sicherheit und Verträglichkeit) → Phase 2 - Studien (größere Gruppen erkrankter Menschen: Überprüfung der Wirksamkeit und Ermittlung der passenden Dosierung)
05	Phase 2 - Studien (größere Gruppen erkrankter Menschen: Überprüfung der Wirksamkeit und Ermittlung der passenden Dosierung) → Phase 3 - Studien (große Gruppen erkrankter Menschen: Signifikanter Wirksamkeitsnachweis)
06	Phase 3 - Studien (große Gruppen erkrankter Menschen: Signifikanter Wirksamkeitsnachweis) → Zulassung eines Medikamentes
07	Zulassung eines Medikamentes → Phase 4 - Studien (sehr große Gruppen erkrankter Menschen: Weiterhin Überprüfung der Sicherheit und Verträglichkeit, optimaler Einsatz)
08	Zulassung eines Medikamentes → Public Health

	(Volksgesundheit im nationalen Kontext)
09	Zulassung eines Medikamentes → Global Health (Volksgesundheit im globalen Kontext)
10	Präklinische Wirkstoffprüfung (in vitro und/oder Tierversuche: Untersuchung der Wirksamkeit und Sicherheit) → Forschung zur Wirkstoffsuche/findung
11	Phase 1 - Studien (kleine Gruppen gesunder Menschen: Untersuchung der Wirkung, Verteilung und Verstoffwechselung im Körper, Überprüfung der Sicherheit und Verträglichkeit) → Präklinische Wirkstoffprüfung (in vitro und/oder Tierversuche: Untersuchung der Wirksamkeit und Sicherheit)
12	Phase 2 - Studien (größere Gruppen erkrankter Menschen: Überprüfung der Wirksamkeit und Ermittlung der passenden Dosierung) → Phase 1 - Studien (kleine Gruppen gesunder Menschen: Untersuchung der Wirkung, Verteilung und Verstoffwechselung im Körper, Überprüfung der Sicherheit und Verträglichkeit)
13	Phase 3 - Studien (große Gruppen erkrankter Menschen: Signifikanter Wirksamkeitsnachweis) → Phase 2 - Studien (größere Gruppen erkrankter Menschen: Überprüfung der Wirksamkeit und Ermittlung der passenden Dosierung)
14	Phase 4 - Studien (sehr große Gruppen erkrankter Menschen: Weiterhin Überprüfung der Sicherheit und Verträglichkeit, optimaler Einsatz) → Phase 3 - Studien (große Gruppen erkrankter Menschen: Signifikanter Wirksamkeitsnachweis)
15	Public Health (Volksgesundheit im nationalen Kontext) → Präklinische Forschung (in vitro und/oder Tierversuche)
16	Public Health (Volksgesundheit im nationalen Kontext) → Klinische Forschung (am Menschen)

17	Global Health (Volksgesundheit im globalen Kontext) → Präklinische Forschung (in vitro und/oder Tierversuche)
18	Global Health (Volksgesundheit im globalen Kontext) → Klinische Forschung (am Menschen)

Which measures are best suited to improve translation?

Both reports and the interviews showed that there are no specific and generally agreed upon goals of TR. Specific goals of TR are thus not separable from the discussed and conducted measures to implement TR. The measures themselves have certain goals, but it is not clear if those are also goals of TR or how important they are for TR. Thus it remains unclear which measures should be implemented or expanded to achieve translation between different phases of the research process. It is essential to clarify which aspects of TR are important and should be pursued within the BIH. The second research question addresses this issue and asks the participants to rank different aspects of TR in accordance with their contribution to improve translation between different phases of the (bio)medical process of producing knowledge and effective treatments. Table 2 shows the Q set, i.e. the statements which are to be sorted according to the question: "Which measures are best suited to improve translation?"

Table 2 Q set 2

01	Die biomedizinische Ausbildung interdisziplinär gestalten
02	Clinical Scientists ausbilden
03	Translationsorientierte Wissenschaftler*innen ausbilden
04	Methodenkenntnisse intensiver vermitteln
05	Regulatorisches Wissen vermitteln
06	Translationale Projekte stärken
07	Anwendungsbezogene Forschung stärken
08	Grundlagenforschung strärken
09	Qualitativ hochwertige Forschung stärken
10	Finanzielle Anreize setzen
11	Finanzielle Unterstützung bieten
12	Mehr Personalressourcen stellen
13	Langfristige Förderung bieten

14	Risikoreiche Forschung stärken
15	Technologieziele stärken
16	Wirtschaftlich aussichtsreiche Forschung stärken
17	Alltagstaugliche Guidelines entwickeln
18	Bessere Diagnostik einsetzen
19	Bessere Therapien einsetzen
20	Bessere Präventionsmaßnahmen einsetzen
21	Mechanismen von Krankheiten intensiver erforschen
22	Mechanismen von Wirkstoffen intensiver erforschen
23	Molekularmedizinische Ansätze stärken
24	Systemische Ansätze stärken
25	Personalisierte Medizin stärken
26	Pateient*innen in Forschungsprozess miteinbeziehen
27	Clinical Research Unit aufbauen
28	Datenbanken entwickeln
29	Technologieplattformen aufbauen
30	Die zwei Kulturen Grundlagenforschung und klinische Forschung einander näher bringen
31	Öffentlich wirksame Forschung stärken
32	Auftragsarbeit stärken
33	Zusammenarbeit stärken
34	Kooperationen mit der Industrie stärken
35	Therapeutika schneller auf den Markt bringen
36	Eine translationale Kultur schaffen
37	Ausgründungen stärken
38	Forschende bei administrativen Aufgaben unterstützen
39	Forschende bei wissenschaftlichen Aufgaben unterstützen
40	Räumliche Nähe stärken

41	Open Labs stärken
42	Regulatorische Hürden abbauen
43	Entscheidungsrelevantes Wissen produzieren
44	Mehr Zeit für die Forschung schaffen
45	Patentierbare Erfindungen erbringen
46	Innovationen entwickeln
47	Neue Forschungsmodelle/methoden einsetzen
48	Neuere Technologien im Forschungsprozess einsetzen
49	bisherige Erkenntnisse nutzen
50	Neue Journals etablieren
51	Publizieren
52	Publikationsdruck mindern
53	Qualitätsstandards sicherstellen
54	Die Umsetzbarkeit einer Studie von vornherein klären
55	Die Repräsentativität von Studien sicherstellen
56	Theoriegeleitete Forschung stärken
57	Negative und positive Ergebnisse/Befunden in den Forschungs- und Erkenntnissprozess einbeziehen
58	Ergebnisse des gesamten Forschungsprozesses berichten
59	Studien, die die Wirksamkeit von Medikamenten vergleichen stärken
60	das Pflegepersonal in den Forschungsprozess einbeziehen
61	Open Access stärken
62	Systematische Überblicksarbeiten über den aktuellen Forschungsstand stärken
63	Exzellente/Spitzen-Wissenschaftler*innen rekrutieren
64	Geeignete Tiermodelle einsetzen

2.2.3 Implementation

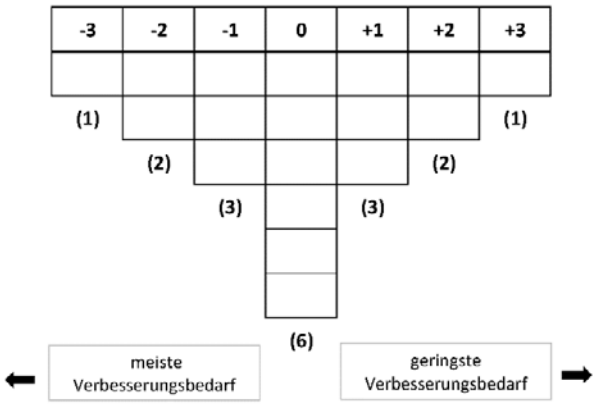
To get extensive insight about the viewpoints of key actors regarding the research questions described above we will survey people from different phases of the (bio)medical research process as well as clinicians who are indirectly involved in research. The participants will be as diverse as possible regarding working field, status and experience. The selection will be balanced in regard to these criteria and sex. This covers people from Charité and MDC who are directly involved in the (bio)medical process of producing knowledge and effective treatments and who can give us an impression about their individual experiences in daily work practice.

The procedure for both sorting tasks is the same. The interviewer[10] will give the participant instructions and present the cards with the corresponding statements. First the participant will sort these cards into three ranked categories on three different piles. Category 1 includes the cards about which the participant feels positive (question 1 “least need for improvement”, question 2 “biggest contribution to improvement”). Category 2 includes the cards about which s/he feels negative (question 1 “most need for improvement”, question 2 “smallest contribution to improvement”). Category 3 includes the cards about which s/he feels indifferent or about which s/he is unsure.

Afterwards the participant will sort the cards from category 1 in relation to each other into a prearranged frequency distribution (Figure 1). The range and slope of the sorting distribution is different for each sorting task depending on the number of statements involved. The participant will proceed with the cards from category 2. At the end s/he sorts the category 3 cards to fill in the middle. To assure an extensive interpretation of the results, after each sorting task the interviewer will ask the participant why s/he sorted the statements in this particular manner. At the end of the session the interviewer will ask the participant to fill in a questionnaire. It addresses information which could affect and therefore explain the resulting viewpoints (e.g. field of work, experience with TR projects; 5.2 Questionnaire). The whole session will last about 60-90 minutes.

[10] Interviewer refers to the person who is conducting the Q methodological survey.

(a)



(b)

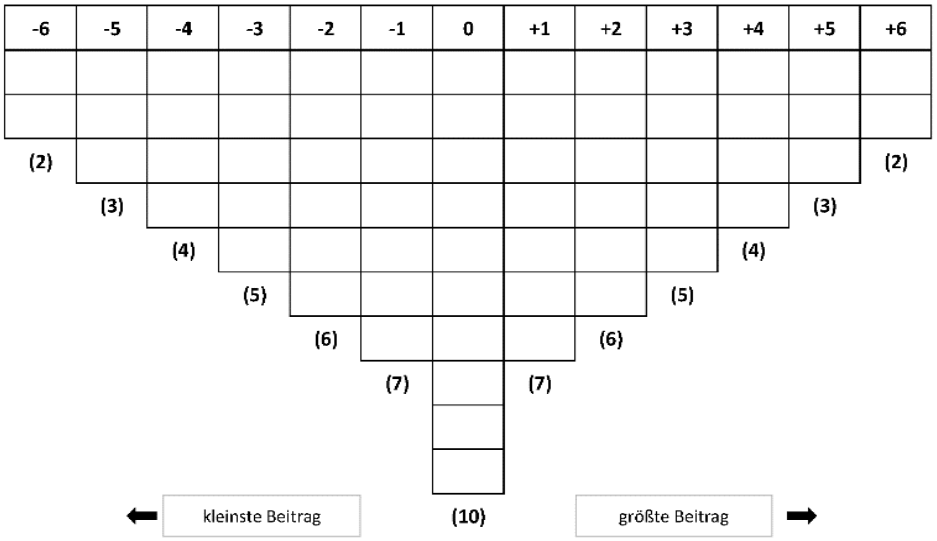


Figure 1 Prearranged frequency distributions

(a) Illustrates the distribution for the first research question with a Q set of 18 statements.
(b) Illustrates the distribution for the second research question with a Q set of 64 statements.

3 Outlook

Our first two reports (Blümel et al. 2015, 2016) showed that there is no consensus neither in the literature nor at different institutions regarding how to understand and how to implement TR. The interviews at the BIH demonstrated that there is no clear and agreed upon concept of TR within the BIH neither. To clarify how TR is understood within the BIH we will conduct a Q methodological survey since it is best suited when the subject matter is not well known and controversial. After several evaluations of the statements within our group, the Q sets adequacy will be tested with experts from the BIH. The aim is to check for readability, clarity, representativeness, and omissions.

Since the interviews were held in German, the statements are currently in German. After the test phase these will be translated into English to allow for inclusion of as many participants as possible.

The survey instrument will focus on the BIH funding line “Research Projects”. To get a more complete picture of TR within the BIH we suggest an additional exploration of the two other funding lines at the BIH: “Biomedical Academy” (education) as well as “Core Facilities” and the “Clinical Research Units” (infrastructure). Both reports and the interviews showed that education and infrastructure are seen as very important aspects of TR as well.

The results of our surveys will provide the basis for a quantitative standardized survey. In a further step this quantitative instrument could be used to survey as many actors within the BIH as possible and could allow to assess the development of TR within the BIH over time.

4 Bibliography

Akhtar-Danesh, N., Baumann, A. and Cordingley, L. (2008): Q-Methodology in Nursing Research: A Promising Method for the Study of Subjectivity. In: Western Journal of Nursing Research 30 (6), pp. 759–773.

BIH (2015): Berlin Institute of Health - strategy. Available at: www.bihealth.org/en/institute/strategy/ (Accessed March 18, 2015).

Blümel, C., Gauch, S., Hendriks, B., Krüger, A.K. and Reinhart, M. (2015): In Search of Translational Research: Report on the Development and Current Understanding of a New Terminology in Medical Research and Practice, Berlin: Institute for Research Information and Quality Assurance; Humboldt-University Berlin. Available at: https://www.bihealth.org/uploads/pics/iFQ-BIH-Report_2015_web.pdf.

Blümel, C., Gauch, S. and Krüger, A.K. (2016): Organizing Translational Research: Report on the Establishment, Organization, and Evaluation of the Translational Research Process in leading US Organizations, Berlin: Institute for Research Information and Quality Assurance; Humboldt-University Berlin. Available at: https://www.bihealth.org/uploads/pics/BIH_Report_OrganizingTranslationalResearch.pdf.

Butler, D. (2008): Translational research: Crossing the valley of death. In: Nature 453, pp. 840–842.

Felfe, J. (2008): Mitarbeiterbindung, Göttingen ;Bern ;Wien: Hogrefe.

Gläser, J. and Laudel, G. (2010): Experteninterviews und qualitative Instrumente: als Instrumente rekonstruierender Untersuchungen, Wiesbaden: VS Verlag.

Kozlowski, S.W.J. and Ilgen, D.R. (2006): Enhancing the Effectiveness of Work Groups and Teams. In: Psychological Science in the Public Interest 7 (3), pp. 77–124.

Kvale, S. (2008): Doing Interviews, London: SAGE.

Mayring, P. (2000): Qualitative Inhaltsanalyse. In: Forum Qualitative Sozialforschung 1 (2).

McCaughan, D., Thompson, C., Cullum, N., Sheldon, T.A. and Thompson, D.R. (2002): Acute care nurses' perceptions of barriers to using research information in clinical decision-making. In: Journal of Advanced Nursing 39 (1), pp. 46–60.

NCBI (2012): Translational Medical Research. Available at: www.ncbi.nlm.nih.gov/mesh/?term=translational+research.

Stephenson, W. (1935): Correlating persons instead of tests. In: Journal of Personality 4 (1), pp. 17–24.

Stephenson, W. (1953): The Study of Behavior: Q-Technique and its Methodology, Chicago and London: University of Chicago Press.

Thompson, C., McCaughan, D., Cullum, N., Sheldon, T.A., Mulhall, A. and Thompson, D.R. (2001a): Research information in nurses' clinical decision-making: what is useful? In: Journal of Advanced Nursing 36 (3), pp. 376–388.

Thompson, C., McCaughan, D., Cullum, N., Sheldon, T.A., Mulhall, A. and Thompson, D.R. (2001b): The accessibility of research-based knowledge for nurses in United Kingdom acute care settings. In: Journal of Advanced Nursing 36 (1), pp. 11–22.

Vizcaíno, A., García, F., Villar, J.C., Piattini, M. and Portillo, J. (2013): Applying Q-methodology to analyse the success factors in GSD. In: Information and Software Technology 55 (7), pp. 1200–1211.

Watts, S. and Stenner, P. (2012): Doing Q methodological research : theory, method and interpretation 1. publ., Los Angeles: Sage.

5 Appendix

5.1 Retrival Strategy

Nr.	Seach Item (in Pubmed)	Date	Hits in Pubmed	Selection Title/Abstract
1.	Translational Medical Research[MeSH Major Topic]	02.06.2015	2840	262
2.	((Translational Research[Title/Abstract]) NOT Translational Medical Research[MeSH Major Topic]) AND biomedical research[MeSH Major Topic]	30.06.2015	380	61
3.	(((Translational Research[Title/Abstract]) NOT Translational Medical Research[MeSH Major Topic]) NOT biomedical research[MeSH Major Topic]) AND public health[MeSH Major Topic]	30.06.2015	180	17
4.	(((Translational Research[Title/Abstract]) NOT Translational Medical Research[MeSH Major Topic]) NOT biomedical research[MeSH Major Topic]) AND Nursing[MeSH Major Topic]	30.06.2015	6	5

Explanatory notes on search strategy

- Search sample 1 contributes all articles, which are, according to PubMed, part of the Translational Medical Research domain.
- Search sample 2 contributes all articles, which hold Translational Research in abstract or title, but do not contribute to the search sample 1.
- Search sample 3 contributes all articles, which hold Translational Research in abstract or title and are, according to PubMed, part of the Public Health domain, but do not contribute to the search sample 1 and 2.
- Search sample 4 contributes all articles, which hold Translational Research in abstract or title and are, according to PubMed, part of the Nursing domain, but do not contribute to the search sample 1, 2 and 3

5.2 Questionnaire

The following questionnaire captures further information that could affect and therefore explain the resulting viewpoints.

ID _____ Datum _____ Interviewer/in _____

Sprachkenntnisse

Muttersprache: _____

Falls Deutsch nicht Muttersprache, bitte einschätzen:

Deutsch (sehr gut) 1 – 2 – 3 – 4 – 5 (sehr schlecht)

Falls Englisch nicht Muttersprache, bitte einschätzen:

Englisch (sehr gut) 1 – 2 – 3 – 4 – 5 (sehr schlecht)

Beruflicher Hintergrund

Sind Sie am BIH beschäftigt? ja nein

Falls ja, seit wann: _____

Seit wann sind Sie an der Charité/am MDC beschäftigt? _____

Bezeichnung Ihrer derzeitigen Stelle : _____

Derzeitige Stelle seit: _____

Welches sind Ihre zentralen laufenden Forschungsprojekte (inkl. Qualifikationsprojekte)?

Name des Projekts	Inhaltlicher Bereich	seit	Ihre Rolle (z.B. ForscherIn, KoordinatorIn, etc.)

Beruflicher Ausbildungsabschluss und Jahr des Abschlusses (Mehrfachnennung möglich)

Abschluss	Jahr	Ort (Stadt/Land)

Leitung von Gruppen? ja nein

Falls ja: Wie viele Gruppen bereits geleitet? _____

ID _____ Datum _____ Interviewer/in _____

Der (bio)medizinische Erkenntnis- und Entwicklungsprozess umfasst mehrere Phasen. Wo in diesem Prozess würden Sie sich mit Ihrer derzeitigen Stelle am ehesten zuordnen?

Bitte *ankreuzen*:

Grundlagenforschung:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Präklinische Forschung:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Klinische Forschung:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Phase 1 –Studien:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Phase 2 –Studien:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Phase 3 –Studien:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Phase 4 –Studien:	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht
Anwendung (keine Forschung):	(ja)	1 – 2 – 3 – 4 – 5	(nein)	weiß nicht

Andere Phase: _____

Arbeiten Sie mit Menschen zusammen, die in anderen Phasen des (bio)medizinischen Erkenntnis- und Entwicklungsprozesses tätig sind als Sie selbst? ja nein

Falls ja:

Aus welchen Phasen? _____

Wie oft im Monat? _____

Arbeiten Sie mit Menschen aus anderen Berufen und/oder Disziplinen zusammen? ja nein

Falls ja:

Welche Berufe/Disziplinen? _____

Wie oft im Monat? _____

Haben Sie in der Vergangenheit mit anderen Disziplinen/Berufen gearbeitet? ja nein

Falls ja:

Welche? _____

_____

Wann? _____

Wie oft? _____

ID _____ Datum _____ Interviewer/in _____

TR-spezifische Erfahrung:

Gegenwärtig wird viel über die Organisation und über die Ergebnisse von (bio-)medizinischer Forschung diskutiert. Ein wichtiges Schlagwort ist hier Translationale Forschung (Translational Research – TR). Ist Ihnen dieser Begriff bereits schon einmal über den Weg gelaufen? ja nein

Falls ja:

Wann haben Sie ungefähr zum ersten Mal von TR gehört? _____

Und wie gut kennen Sie sich in der Debatte zu TR aus?

(gut) 1 – 2 – 3 – 4 – 5 (schlecht) weiß nicht

Haben Sie bereits im Rahmen von TR gearbeitet? ja nein

Falls ja:

(Seit) Wann: _____

Bezeichnung des Projektes: _____

Inhaltlicher Bereich: _____

An welcher Institution? _____

Wo im Forschungsprozess würden Sie die damalige Stelle am ehesten zuordnen?

Bitte oben *einkreisen*.