Anja Weiß, Benjamin Quasinowski, Ilka Sommer

Study Report "Globalizing medical knowledge and practice". Transcripts, translation, audiovisual and context material for doctor-patient-interaction videoobserved at university hospitals in Ankara (Turkey), Beijing (PRChina), Groningen (Netherlands) and Würzburg (Germany)

University of Duisburg-Essen

Institute of Sociology

Research Project: Travelling knowledge: the glocalization of medical professional knowledge and practice (Glopro)

Suggested Citation:

Weiß, Anja; Quasinowski, Benjamin; Sommer, Ilka (2022): Study Report “Globalizing medical knowledge and practice”. Transcripts, translation, audiovisual and context material for doctor-patient-interaction videoobserved at university hospitals in Ankara (Turkey), Beijing (PRChina), Groningen (Netherlands) and Würzburg (Germany). Bremen: RDC Qualiservice. http://dx.doi.org/10.26092/elib/1395.

Suggested Citation for the Data Sets:

Sommer, Ilka; Weingartz, Sarah; Elçin, Melih; Tuncel, Bilge; Weiß, Anja (2021): Globalizing medical knowledge and practise: Doctor-patient-interaction videoobserved at a university hospital in Ankara (Turkey). Transcripts, translation, audiovisual and context material. Qualiservice. (data set). https://doi.org/10.1594/PANGAEA.939234.

Weiß, Anja; Sommer, Ilka; Chen, Wei; Liu, Tao; Guo, Fan; Liu, Wenting (2021): Globalizing medical knowledge and practise. Doctor-patient-interaction videoobserved at a university hospital in Beijing (PRChina). Transcripts, translation, audiovisual and context material. Qualiservice. (data set). https://doi.org/10.1594/PANGAEA.939235.

Weiß, Anja; Sommer, Ilka; Merse, Stefanie; Weingartz, Sarah; Wietasch, Götz; Maass, Alexander; Assa, Solmaz (2021): Globalizing medical knowledge and practise. Doctor-patient-interaction videoobserved at a university hospital in Groningen (Netherlands). Transcripts, translation, audiovisual and context material. Qualiservice. (data set). https://doi.org/10.1594/PANGAEA.939238.

Weiß, Anja; Sommer, Ilka; Merse, Stefanie; Störk, Stefan; Breunig, Margret; Morbach, Caroline (2021): Globalizing medical knowledge and practise. Doctor-patient-interaction videoobserved at a university hospital in Würzburg (Germany). Transcripts, translation, audiovisual and context material. Qualiservice. (data set). https://doi.org/10.1594/PANGAEA.939245.

Legal Notice

Research Data Center (RDC) Qualiservice
University of Bremen
SOCIUM – Research Center on Inequality and Social Policy
Mary-Somerville-Str. 7
D-28359 Bremen
Germany

Website: https://www.qualiservice.org
E-Mail: info@qualiservice.org

Contents

Abstract

Abstract English

The data set contains 64 observations of physicians during a first encounter with a patient actor simulating a prevalent cardiac disease, heart failure. The doctor-patient-interaction took place 2019-2020 in four top university hospitals situated in Ankara (Turkey), Beijing (PRChina), Groningen (Netherlands), and Würzburg (Germany). Participating physicians were diverse in terms of professional experience, degree of specialization, professional language, age, gender and migration experience. These characteristics are available as questionnaire data. The study employed two scrips for simulated patients: a case of systolic heart failure – for which a standard treatment is available – was enacted by 60-year-old male SPs; a case of diastolic heart failure – for which treatment guidelines are less clear – was enacted by 80-year-old female SPs. The core of the data set consists of videos, transcripts in English, German, Mandarin, and Turkish as well as partial translations to English for the Mandarin and Turkish language cases. Some sequences were transferred to ELAN. The data set enables the study of professional knowledge and practise in an intercultural and transnationally comparative perspective. It is relevant for applied research in medical education and for foundational research in the sociology of knowledge and conversation analysis. The sociology of medicine, social studies of science and medicine, sociology of professions, and migration research are sub-disciplines that might profit from reusing the data.

Abstract Deutsch

Der Datensatz enthält 64 Beobachtungen von Ärzten und Ärztinnen, die eine_n Simulationspatienten/in (SP) behandeln, der bzw. die Herzinsuffizenz simuliert, ein weit verbreitetes kardiologisches Syndrom. Die Arzt-Patient-Interaktionen fanden 2019-2020 in führenden Universitätskliniken in Ankara (Türkei), Peking (VR China), Groningen (Niederlande) und Würzburg (Deutschland) statt. Die teilnehmenden Ärzte und Ärztinnen waren in Bezug auf Berufserfahrung, Spezialisierungsgrad, Fachsprache, Alter, Geschlecht und Migrationserfahrung divers. Diese Merkmale liegen als Fragebogendaten vor. Die Studie verwendete zwei Skripte für die SPs: Ein Fall von systolischer Herzinsuffizienz – für die eine Standardbehandlung verfügbar ist – wurde von 60-jährigen männlichen SPs dargestellt; ein Fall von diastolischer Herzinsuffizienz – für die die Behandlungsrichtlinien weniger klar sind – wurde von 80-jährigen weiblichen SPs gespielt. Der Kern des Datensatzes besteht aus Videos, Transkriptionen in Englisch, Deutsch, Mandarin und Türkisch sowie Teilübersetzungen ins Englische für Fälle in den Sprachen Mandarin und Türkisch. Einige Sequenzen wurden in ELAN übertragen. Der Datensatz ermöglicht die Untersuchung von beruflichem Wissen und Praxis in einer interkulturellen und transnational vergleichenden Perspektive. Die Daten sind für die angewandte Forschung in der Medizindidaktik und für die wissenssoziologische Grundlagenforschung und Gesprächsanalyse relevant. Medizinsoziologie, Wissenschaftsforschung, Social Studies of Science and Medicine, Professionssoziologie und Migrationsforschung sind Teildisziplinen, die von einer Weiterverwendung der Daten profitieren könnten.

1 Technical data

Principal Investigators:	Prof. Dr. Anja Weiß[1] and Prof. Dr. Tao Liu[2]
Involved Researchers: (Core Team)	Dr. Ilka Sommer[3], Sarah Weingartz[4], Benjamin Quasinowski[5]
Funding:	German Research Foundation (DFG) (under the identifiers WE 2511/5-1 and LI 2748/1-1)
Project Period:	April 2018 to May 2021
Status:	Finished
Link:	https://www.uni-due.de/soziologie/dfgtravellingknowledge.php
Data:	video recordings, audio recordings, transcripts, translations, questionnaire data, MAXQDA-project, context material
Software:	ELAN, MAXQDA, F4
Countries:	Turkey, PRChina, The Netherlands, Germany
Collaborators:	Solmaz Assa MD[6], Dr. med. Margret Breunig[7], Prof. Dr. Wei Chen (陈未)[8], Prof. Melih Elçin MD MSc[9], Dr. Fan Guo[10], Dr. med. Alexander Maass[11], Dr. med. Stefanie Merse[12], Dr. med. Caroline Morbach[13], Prof. Dr. med. Dr. rer. pol. Anja Neumann[14],

[1] Institute of Sociology, University of Duisburg-Essen (Germany), ORCID: https://orcid.org/0000-0002-9676-8326
[2] School of Public Affairs, Zhejiang University (China), ORCID: https://orcid.org/0000-0002-5279-7758
[3] worked in the project from April 2018 to May 2021, ORCID: https://orcid.org/0000-0002-4595-3724
[4] Faculty of Social Sciences and Cultural Studies, University of Applied Sciences Düsseldorf (Germany), worked in the project from April 2018 to January 2021, ORCID: https://orcid.org/0000-0002-0109-860
[5] Institute of Sociology, University of Duisburg-Essen (Germany), worked in the project from July 2018 to May 2021, ORCID: https://orcid.org/0000-0002-3635-0200
[6] University Medical Center Groningen, Department of Cardiology, Heart Center (The Netherlands)
[7] Comprehensive Heart Failure Center and Dept. Internal Medicine, University and University Hospital Würzburg (Germany)
[8] Dept. of Cardiology, Peking Union Medical College Hospital (China), ORCID: https://orcid.org/0000-0003-1466-824X
[9] Dept. Medical Education and Informatics, Hacettepe University, Hacettepe University (Turkey), ORCID: https://orcid.org/0000-0002-1652-906X
[10] Dept. of Cardiology, Peking Union Medical College Hospital (China)
[11] University Medical Center Groningen, Department of Cardiology, Heart Center (The Netherlands)
[12] Faculty of Medicine, University of Duisburg-Essen (Germany)
[13] Comprehensive Heart Failure Center and Dept. Internal Medicine, University and University Hospital Würzburg (Germany), ORCID: https://orcid.org/0000-0002-0920-6094
[14] Faculty of Economics and Business Administration, Institute of Healthcare Management, University of Duisburg-Essen (Germany)

Prof. Dr. med. Till Neumann[15], Prof. Dr. med. Stefan Störk[16], Bilge Tuncel, MD[17], Prof. Dr. med. Götz Wietasch[18]

[15] Outpatient Department of Cardiology “Cardio-Praxis-Wattenscheid” (Germany)

[16] Comprehensive Heart Failure Center and Dept. Internal Medicine, University and University Hospital Würzburg (Germany), ORCID: https://orcid.org/0000-0002-1771-7249

[17] Dept. Medical Education and Informatics, Hacettepe University, Hacettepe University (Turkey) https://orcid.org/0000-0001-8350-4463

[18] Department of Anaesthesiology, University Medical Center Groningen (The Netherlands), ORCID: https://orcid.org/0000-0001-8001-5648

2 The research project in its context

2.1 Administration and organisation of the project

„Glopro“ was funded by the German Research Foundation (DFG) from June 2018 through April 2021 (under the identifiers WE 2511/5-1 and LI 2748/1-1). It was headed by Prof. Dr. Anja Weiß (University of Duisburg-Essen) and Prof. Dr. Tao Liu (University of Duisburg-Essen and Zhejiang University). The sociological, transnationally comparative research project was carried out with collaborators from cardiology, medical education, and health economics. It comprised three work packages. Work package 1 (hereafter WP 1) aimed at conducting an institutional analysis of standard-setting. A central goal was to study how global standards in the field of heart failure have emerged in recent decades. This research assumed that a newly emerging scientific subdiscipline like heart failure research would be a feasible test case for studying processes of knowledge diffusion and standardization. WP 1 was headed by Tao Liu, with Benjamin Quasinowski as a research assistant. Work package 2 (hereafter WP 2) aimed at observing doctor-patient-encounters in standardized situations in a transnational sample with maximized socio-spatial contrasts. Studying how medical socio-material problems get solved in varying contexts would allow the team to not only assess standardization in medical practise but also the interplay between global and local processes as well as the co-articulation of universalizing and specific knowledge. WP 2 was headed by Anja Weiß and coordinated by Ilka Sommer with Sarah Weingartz as research assistant; Benjamin Quasinowski later contributed during data analysis. A third work package (hereafter WP 3), headed by Tao Liu and Anja Weiß, was intended to bring together findings from Work package 1 and 2 and thus embed situated practice in standard-setting contexts.

Glopro involved collaboration with four university hospitals in Ankara (Turkey), Beijing (PRChina), Groningen (Netherlands), and Würzburg (Germany). As part of the research done in WP 2, each of the university hospitals provided facilities for videorecording medical consultations of simulated patient actors (hereafter SPs). The consultations were conducted by physicians and medical students who had been recruited from each of the four university hospitals (more details on the empirical studies follow below).

Since the Glopro data set that was prepared for secondary use at Qualiservice Bremen consists of data collected in WP 2, WP 1 will not be presented in detail here. However, a general understanding of what was done in WP 1 may provide helpful background knowledge for better understanding the rationale of data acquisition and analysis in WP 2. Short subsections on case selection, data acquisition, data processing and analysis with regard to work done in WP 1 will therefore be provided as well.

2.2 Content and structure of the project

2.2.1 Research questions and objectives

Professions are often discussed as a third form of regulation alongside state and market (Freidson 2001). This is due to the fact that the quality of professional knowledge can only be

assessed by professionals themselves (Abbott 1988: 545). As both hierarchy and competition contribute to the regulation of professions they incorporate aspects of market and state. Yet at their core professions govern themselves on the basis of professional knowledge (Parsons 1968; Willke 1998: 146). The regulation of professional knowledge can thus be studied as one prototype of emergent global forms.

The central motivation for Glopro was that it remains an open empirical question whether and how professional knowledge and practice work beyond borders. On the one hand, science searches for universal truth (Luhmann 1992) and professions use universalizing scientific knowledge to solve problems (Brante 2010). On the other hand, professional associations claim jurisdiction over the application of knowledge with the help of states which makes knowledge appear to be geographically bounded and, by implication, particular. The resulting dichotomies between universal scientific and particular applied knowledge or between a world-spanning "global" and a geographically bounded "local" usability of knowledge are mirrored in research on high skilled migration which distinguishes general from nation-state-specific human capital (Esser 1999: 151; Hofstede/ Hofstede 2005).

Starting from these debates, Glopro initially defined five objectives:

1) To investigate the transnational diffusion of explicit standards in a macro-sociological research design with a focus on the diagnosis, treatment and pedagogical techniques that address chronic systolic heart failure, a globally important disease (WP 1).

2) To investigate tacit knowledge in its situated application, with the help of microsocial observational techniques and with a focus on advanced students' response to a situated socio-material problem. Analyses through the lens of various observers were planned to assess the degree to which professional knowledge and practice were observed as similar across situations that differed maximally in socio-spatial location (WP 2).

3) To connect WP 1 and WP 2 in order to better understand the ways in which standards are vernacularized or in which scripts inform situated socio-material knowledge and practice.

4) To explain part of the variation observed in WP 2 with reference to the transnational standards studied in WP 1, with reference to national health institutions and with reference to further transnational contexts such as language and educational migratory networks.

5) To theorize glocalization on the basis of empirical results. Professions are regulated by market and state, but also through the recognition by peers that knowledge and practice are able to solve a socio-material problem. Understanding the capacity of professional knowledge to universalize and to inform situated socio-material practice, i.e. to "glocalize", would contribute to an empirically grounded sociological theory of professions as emergent global forms of regulation.

2.2.2 Preliminary work and methodological background

The project was embedded in Weiß' (2017; 2018) long-term theoretical research program, on the theory of social inequality in times of globalization, but it gained a distinctive character in the context of the Cross Border Labor Markets working group at the University of Duisburg-Essen (Quack et al. 2018; Shire 2020). Weiß (2005; 2018) argues that the contexts in which resources are put to use become diverse and spatially incongruent as a result of globalization processes (cf. Weiß 2021); accordingly, theories of social inequality must consider differentiated "context relations" as an important component of social layers in the world. In two empirical research projects on highly skilled migration (DFG project WE 2511/3-1&2 "Transnationalization of social inequality" 2002-2005; and international VW-Study Group "Cultural capital during migration," 2004-2009, www.udue.de/cucap), Weiß focused on the recognition of cultural capital during migration (Nohl/Schittenhelm/Schmidtke/Weiß 2010, 2014; Weiß 2010a; Weiß/Ofner/Pusch 2010). These studies and Weiß' prior work on racism (Weiß 2013 [2001]) built on Bourdieu to show the importance of social recognition for the value of cultural capital.

Important scholars within migration studies (Dahinden 2016; Nieswand 2016) called for a de-migrantization of migration studies. Migrants should not be seen as "different", but migration studies should be part of a more general approach to social order. Glopro therefore did not study the cultural capital of migrants, but knowledge of all professionals in different locations of the world. Also, Glopro included several theoretical angles. It considered the recognition struggles suggested by Bourdieu's field theory (cf. Sommer 2021), but also employed a pragmatist approach to knowledge as a capacity to solve situated socio-material problems (Weiß 2016); thus it connects with the Social Studies of Science and Medicine.

Liu's work prior to Glopro focused on social policy in and the diffusion of ideas to the People's Republic of China. In his Ph.D. he used a world society approach to analyze the transfer of the German model of statutory industrial accident insurance to China (Leisering/ Liu 2010; Liu/ Leisering 2017). The macro-sociological lens of his Ph.D. is expanded in his postdoctoral research on the social assistance program in China. Here he argues that various social assistance ideas and models from Western Europe and the United States have been synthesized with national idiosyncratic traditions and organizational structures, creating a new Chinese social assistance model (Leisering et al. 2017). In Liu and Sun (2015) he demonstrates how national laws on maternity insurance in China have been adapted to international treaties and conventions even when local practice remains partially disconnected from global scripts.

While the main thrust of Glopro was on foundational research in the sociology of globalization, it cooperated with cardiology, medical education and health economy, so that the project could be expected to deliver some applied findings as well. The idea was that observed variation in treatment standards and simulated practice concerning heart failure could inform cardiologists of variations in treatment across the globe and the costs associated with them. Transnationally comparative observation of medical education techniques would improve education for

medical students who may emigrate in the future or work in intercultural teams, as well as the skill assessment and workplace integration of immigrant physicians.

Because the central research question, of whether and how the professional knowledge at the heart of professional self-regulation expands beyond the nation-state, was an empirically open question, the project used physicians' professional knowledge and practice as a test case in order to develop a deeper understanding of how professions regulate themselves on the basis of knowledge. The medical field was well suited for this endeavor because it is characterized by a long tradition of mobility as well as a high degree of national closure in professional labor markets. Medical propositional knowledge is based on the natural sciences, which might imply a universal applicability of knowledge. At the same time the practice of the medical profession caters to the widest possible range of clients which results in medical knowledge adjusting to very particular demands. It is therefore still an open question whether and how professional medical knowledge and practice work across national borders. In an attempt to answer this question, the project chose a global cardiac syndrome – chronic heart failure – and traced the cross-border diffusion of its treatment standards and their situated implementation in the four university hospitals that were cooperating with the project.

Glopro attempted to overcome dichotomies between universal knowledge on a global scale and the specifics of local knowledge application by using a more integrated concept of professional knowledge and practice and by accepting that there are tensions as well as interconnections between universalizing and particularizing tendencies. The term "glocalization," which was first introduced by Robertson (1992), was used as a common denominator for several newer approaches in globalization studies that suggest diverse ways in which the universal and particular aspects of cultural forms merge and in which globalizing and localizing tendencies are combined. In particular, the project framed the research problem with the help of Bourdieuian field theory, the Stanford school of neo-institutionalism, and pragmatist Studies of Technology and Science (STS). The three theories represent important strands of empirical research in this field and they offered complimentary notions of the nature, the regulation and the socio-spatial scope of professional knowledge and practice.

Following Bourdieuian field theory Glopro argues that struggles for recognition are often, but not necessarily bounded by the nation-state. In contrast, neo-institutionalism expects the diffusion of knowledge across national borders and focuses on propositional rather than embodied knowledge. Taken together, both theories highlight several ways in which professional knowledge and practice may expand beyond or remain bounded by the nation-state. Pragmatism has less interest in the nation-state but sees knowledge as a situated response to socio-material problems and therefore as both universal and local, as both explicit and tacit (Timmermans/ Berg 1997). In combination, the three theories offer complementary answers to the questions as to whether and how professional knowledge travels across nation-state borders and how professions could be seen as a third form of regulation beside market and state. They differ about the nature of professional knowledge and practice, and about its regulation, and they suggest various ways in which knowledge and practice universalize and

expand their socio-spatial scope. They were thus used as “sensitizing concepts” (Blumer 1954: 7) during the empirical research.

2.2.3 Research design

Sociological research on globalization is either macro-sociological or it follows explicit connections to the global, such as references to global standards or the participation of migrant professionals in knowledge brokerage (Bilecen/ Faist 2015). Macro-sociological research is well suited to understand explicit knowledge and standards as well as their legal and economic context. That said, however, macro-sociological research too often assigns the nation-state a prominent role in research design. This may neglect the internal heterogeneity of nation-states (Wimmer/ Glick Schiller 2002).

An alternative approach to globalization studies is found in multi-sited ethnographies (Marcus 1995), work-place studies on the use of technologies (Heath et al. 2004) as well as in the Social Studies of Medicine (Bloor 2001) that follow connections between plural locations in a transnational research design. In this strand of research, knowledge is sometimes treated as if “belonging” to collectives that are often ethnically identified. That said, multi-sited comparative research designs (Levitt/ Merry 2009) and global ethnographies (Gille/ Ó Riain 2002) consider contexts beyond nation and ethnic group, albeit for small-n case studies.

Weiß and Nohl (2012; Weiß 2010b) have called for a transnational perspective in comparative sociology that addresses the particularism of cultural forms but also employs multiple kinds of comparison for medium-n samples in order to identify the context in which an observation is best understood on an empirical basis. This design loosely follows the intuitions of theoretical sampling (Glaser/ Strauss 1967), ethno-survey (Massey 1987) and encompassing comparison (Tilly 1984) by going back and forth between a “top down”, “macro-sociological” selection of contrasting cases and a “bottom up”, contextualized analysis and explanation of heterogeneity (Nohl 2009).

In Glopro, a sample of 71 observations was created with the goal to maximize institutional, social and cultural contrasts between contexts, with 64 included in this data set. A case observed in Beijing is not seen as representative of “Chinese” medical knowledge, but it is seen as embedded in institutions that are nationally bounded, such as specific systems of medical education, health insurance, governance of the medical profession and pharmaceuticals. At the same time, this case may also be embedded in more transnational contexts such as professional languages, or migration networks (Weiß 2021) and, of course, variation between individuals and their biographical experience also matters.

A “bottom up” strategy of comparison between individual observations could thus identify salient similarities and differences in the observed sample. If similarities between observed cases occur, they appear despite of institutional, social and cultural contrasts between sites and individual professionals. Thus, observed similarities in practice would be a strong argument for global standardization or homologies in socio-material problems and solutions.

Comparison is possible, because the physicians respond to a similar illness and case scenario. The project did not include resource poor sites that suffer from a scarcity of medical technologies and knowledge. Instead we focused on university hospitals that are well-endowed in relation to other sites in the same country.

Observed differences are harder to explain than similarities due to the short duration of field work and the complexity of factors explaining differences. Loosely inspired by the documentary method's comparative approach (Bohnsack 2014; Bohnsack et al. 2010; Nohl 2013), it might however be possible to connect some systematic differences with contextual factors.

3 Data acquisition

3.1 Case selection and preparation of data acquisition in WP2

WP 2 studies professional knowledge and practice by observing the situated interaction of participating physicians with a patient actor (SP) simulating a disease, chronic heart failure. Since the original motivation for WP 2 was to test the globality of professional standards and knowledge and to inquire into their practical manifestation, the empirical cases had to be constructed in a manner such that they could be compared across different locations. Also, Glopro wanted to go beyond self-theorizations of professionals on intercultural difference by observing professional practice in different contexts. A comparison between the many observed cases should show aspects of medical (cardiological) knowledge and practice that are in line with global standards, but also differences and (local) particularities. Since systematic comparison needs a tertium comparationis, i.e. at least one or a number of stable dimensions, the sample focused on one syndrome (in two variants) and observations were conducted in four university hospitals that are different in some but not all regards (see 2.2.3). Thus, from the outset of the project Glopro chose 1) a specific and standardized clinical case scenario and 2) the institutional context of the SP consultations as stable dimensions for the comparison. This section gives an overview of the process of how Glopro prepared and carried out the collection of data, which instruments and methods were used, and what kind of problems arose along the way.

The goal of WP 2 to observe professional knowledge and practice was realized by videoobserving consultations conducted by physicians and advanced medical students. As medical educators often use actors simulating a disease for training and exams (Nestel/ Bearman 2015) and as Weiß had used role plays in her Ph.D. (Weiß 2013) and discussed the methodological implications of simulations there, Glopro decided to reduce ethical concerns by working with simulated patient actors (see 3.1.1). We decided to focus on two variants of a prevalent and relevant cardiac syndrome, chronic heart failure, as medical treatment for this syndrome is in part standardized. For cardiac diseases lifestyle choices matter. We therefore expected to see both biomedical and clinical interaction skills in the doctor-patient-consultation.

Prior to the start of the project, potential cooperating partners had been found in Germany, China, Turkey, and the Netherlands. In order to enhance comparability, Glopro was searching for university hospitals that had programs of medical education working with simulated patients

(SPs) and the necessary infrastructure to conduct this kind of research. Due to the duration of the funding application process, significant changes[19] had occurred in the German and the Dutch location when the project started in July 2018. In consequence – and also because the remaining partners were hard pressed for time – lengthy processes of negotiation with prospective collaborators and a search for alternative partners was needed at the start of the project. Eventually, the two alternatives Würzburg (Germany) and Groningen (The Netherlands) differed significantly from the Ankara and Beijing sites as they were equipped with special centers for the treatment and research of heart failure. This means that this data set includes several high ranking experts showing their professional skills which is an advantage for research on professionalism. At the sites working with experienced physicians we were not able to realize the target number of observations per site (n=20). Also, the Glopro sample is characterized by systematic differences concerning level of experience and degree of specialization within and between sites which can be a problem for transnationally comparative research. We tried to somewhat remedy the latter concern by explicitly inviting a few young doctors to participate in Würzburg and Groningen. Still, for comparisons between sites it is important to consider that participants in Ankara and Beijing mostly were not yet specialized or their specialty was in internal or family medicine whereas the samples in Groningen and Würzburg included mostly cardiologists and some very experienced and specialized ones.

During the planning stages of Glopro we expected that the study would be integrated into normal teaching formats. This turned out to be not feasible. Instead, our collaborators created specific formats for the Glopro research. They recruited the doctors participating in the study, provided premises, adapted the model scenario we had developed to local conditions and, if necessary, translated it into the local language, as well as recruited and trained the simulated patients or at least helped with both tasks. At all sites, the dedication of our collaborators to realize the study was important for the recruitment of participants. We have to assume that most participants wanted to please the respective collaborator who usually was hierarchically above them and/or a respected colleague. Glopro took care to allow participants to renege on consent in a private situation or written form.

The fact that a setting specific to our research was created by our collaborators also impacted on the temporal order in which the observations took place. In sum, in three locations our collaborators were leading professionals in the domain of cardiology and heart failure research. In three locations our collaborators (also) were medical educators. As our collaborator in Beijing, Chen Wei, is both a cardiologist and medical educator she was able to open the necessary doors on her own while preparatory discussions were still ongoing with the other partners. As the core team operated from Germany we had expected to visit Beijing during a later stage of the research. Instead Beijing became the “test case” during which some open questions in the research design were still clarified (see below).

[19] In one location the head of the department had retired and his team moved on, when a new head of department was appointed. In the other location our collaborator had moved from heading the medical education department to heading a clinic.

3.1.1 Preparation of SP Scenario and Questionnaire

In the project proposal, Glopro had planned for one scenario on chronic systolic heart failure. When actually preparing the SP Scenario the cardiologist in the Duisburg-Essen team, Till Neumann, suggested that a comparison with diastolic heart failure could be very interesting. The treatment of systolic heart failure is largely evidence-based and clearly structured in treatment guidelines, whereas evidence for the standardized treatment of diastolic heart failure was limited at the time.[20] Since the relationship between guidelines and clinical practice was of great interest to the project, the team decided to create two scripts. The sample later comprised "chronic systolic heart failure" in 39 doctor-patient interactions and "chronic diastolic heart failure" in 32 interactions.

In a first step of script writing medical educator Stefanie Merse consulted with cardiologist Till Neumann to agree on the physical symptoms and specific laboratory figures for both cases. They discussed this with sociologists Ilka Sommer and Anja Weiß who created the written material accordingly and in close collaboration with the medical experts.

Both cases were designed as "easy" and typical cases as we expected to mostly work with advanced medical students at the outset of the research. This is the usual target group of simulation patient programs. Only during the course of the data collection did we realize that experienced professionals could also be recruited as participants (especially in Würzburg and Groningen). As theories of expert knowledge underline the importance of experience as compared to textbook knowledge, Glopro invited experienced physicians to participate in the study. This did however create a somewhat unbalanced sample across sites (see above).

Attributes like age and gender of the patient actors were chosen in accordance with typical frequency distributions of heart failure: systolic heart failure was enacted by a 59-year-old man and diastolic heart failure by a 78-year-old woman. The cardiologist in our team, Till Neumann, issued a referencing letter from a general physician sending the patient to the clinical outpatient setting. This enabled us to include a lab report concerning blood indicators, an ECG (which was provided by the Beijing partners), and an ultrasound report as part of each patient scenario.

The goal to create scenarios that could work across the world, and a combination of methodical demands and disciplinary perspectives resulted in polite and inconspicuous characters, who were self-employed and had a fairly standard family biography. Their symptoms of illness such as shortness of breath, exhaustion, water retention and, with regard to medical indicators such as BMI, blood pressure, heart rate, ejection fraction, and blood values clear identifiers of the illness were obvious in the scenario. The occupations suggested by the sample were seen by

[20] Recent clinical guidelines distinguish chronic heart failure according to the amount of blood that the heart can pump back into the body with each beat. The respective technical measure is referred to as left ventricular ejection fraction (LVEF). The European Society of Cardiology distinguished three varieties of chronic heart failure depending on LVEF: heart failure with reduced ejection fraction was exemplified by the patient with systolic heart failure in our sample. Heart failure with preserved ejection fraction was exemplified by the patient with diastolic heart failure. The type between is called "mildly reduced ejection fraction and is not used in our study (McDonagh et al. 2021: 3612-13).

the German team as globally prevalent: The male patient is a taxi driver who runs a taxi company with his wife. The female patient is a retired retail clerk who used to run her own shop.

The two scenarios were written in German and translated into English for the first field work in Beijing. Due to the extensive interdisciplinary collaboration the written material was significantly more comprehensive than is usual when working with simulated patients. Further reasons for giving much information were: a) Most cardiac symptoms cannot be simulated by actors, i.e. they must be given to the physician in other form. b) Glopro wanted to simulate a full doctor-patient-interaction during first diagnosis. Therefore, we deemed it necessary to give participating physicians all the information they need. c) In the German health system specialist cardiologist practice independent from hospitals. It therefore is not unusual that a patient arrives at a clinical outpatient setting with a portfolio of specialist diagnostic findings. As will be discussed for individual sites below, it is unusual in most health care settings that detailed reports are available at the outset of the consultations and it is a matter of interest how this “mistake” in the situation was handled in the various settings.

The written material comprised:

In the file “Scenario”

- Part 1: A role script for each simulated patient, including description of the situation, character and self-portrayal, medical history (including suggested wording for the patient), family history, biography, social situation, and emotions and motivations.
- Part 2: A task statement for the consulting doctor, which included a description of the consultation situation, i.e. the when, where, what, who and why of the consultation
- Results of the physical examination, which supposedly had taken place previously in the same environment, in particular, findings for a heart and lung examination and echocardiogram results

In the file “Report”

- A letter from a general practitioner (working in an independent practice or a local policlinic depending on context in the site) who sent the patient to the clinic.

Attached to this letter but in separate files we distributed an ECG and a lab report to participating physicians. Note, that the ECG was not included in the initial scenario from Germany, but it was procured by our collaborators in China and then used at all three other locations.

The cooperating partners were left with considerable degrees of freedom in making the vignette more fitting to (and convincing with regard to) local circumstances, as long as the main characteristics of the disease would be maintained and comparison would be possible. Only in Ankara did collaborators take advantage of this freedom, but in all cases names of patients and referencing physicians were localized and minor adjustments were made by the

experienced SPs enacting the disease. The scenarios (see contextual information) were thus mostly standardized but adapted to some particularities of the local healthcare settings.

A short questionnaire was created as a supplementary survey instrument for collecting socio-demographic data, including the educational and migration biography and language skills of the participants. A formal pretest did not take place. However, when the questionnaire was first used in Beijing, it was adapted to the ongoing survey because problems of understanding had arisen when it was translated from English into Mandarin. In Würzburg it was given in German, in Ankara in Turkish and in Groningen in English. When irritations arose in the course of application or translation, changes were made. In particular, questions about recording the position in the clinic and questions about stays abroad have been changed slightly for each version. The order of the questions was also changed slightly.

Prior to the observation Ilka Sommer prepared lists of anonymized names in alphabetical order using names frequent in the country of observation. These are the names used for the identification of cases throughout. Some physicians used their real name during introductions. These names were changed in the transcript and scrambled in the videos.

3.1.2 Research ethics

The research was conducted with fully informed adults and with actors instead of vulnerable real patients. The sociological team members therefore assumed that written informed consent would be sufficient (forms enclosed). The form for informed consent distinguished between participation in the study and agreement for data use in further research, for teaching purposes and secondary use with the help of a data repository. Cases included here are the cases who explicitly agreed to secondary use.

In medical research, ethics committee votes are required as a standard procedure and Glopro soon learned that such an ethics vote would be mandatory for Ankara and Groningen. In consequence, the PIs applied belatedly to the ethics committee of the University of Duisburg-Essen and consulted the data management specialist at the University of Duisburg-Essen. The Ethical Review Board at the Medical Faculty of the University of Duisburg-Essen concluded that there were no ethical or legal objections to the project (letter of the Review Board, January 29, 2020, reference no.: 19-8948-BO). To our knowledge the Ethical Review Board at Hacettepe University was also consulted and came to the same conclusion.

3.1.3 Background section: Case selection in WP 1

A first step that the members of WP 1 took was to familiarize themselves with discourses surrounding the topic of heart failure in most general terms. An initial review of the phenomenon took a broad approach with a large number of different materials, including scientific journal articles, informative literature published by state and non-state health organizations, as well as by professional and patient associations. WP 1 also aimed at a quantitative analysis of citations networks in the field of cardiology with a focus on heart failure. This analysis was based on a total of 79,317 documents retrieved from a search on Web of

Science[21]. The dataset was created in August 2018 using the search term "heart failure" with the key "Topic". The search period covered the years 1990 to 2017. To pursue its goal of reconstructing the historical and more recent development of CPGs, WP 1 planned to conduct a series of expert interviews. They thus contacted experts from the field and asked them to participate in in-depth interviews.

3.2 Methods, instruments and process of data acquisition

Collaborators in each setting recruited participants with different skill levels and specialties ranging from medical students through residents, to senior physicians and professors. Likewise, the sample included a variety of specialties, among them internal medicine, family medicine, and cardiology. Most consultations took place in the local language, namely Mandarin, German and Turkish. The Mandarin and Turkish transcripts were (later) translated to English. In the Netherlands, both physician and patient communicated in English. In the case of Ankara and Beijing, language barriers were a relevant aspect of fieldwork, since SP consultations were conducted in languages, that were unknown to parts of the team. (see fieldwork sections below)

All physicians knew that they were participating in a research project and treating a simulated patient. In addition to video-recorded observations, the researchers of WP 2 debriefed physicians and SPs in non-standardized feedback sessions. All 71 participants also responded to a questionnaire on their professional education and experiences, language skills, and experience abroad (included, see 3.1.1).

Glopro took a videographic approach to study how knowledge about heart failure and other professional competences surface in physicians' interactions with SPs. Medical knowledge in practice can include physical examinations, but also the material setup and body language. For example, SPs were asked to put a tight elastic rubber band over their socks prior to the research. This would enable physicians to see and look at the "pressure marks" typical for the disease. Yet, not all 11 SPs used the rubber band and some of those, who had used it at the beginning turned to not using it after it did not play a role in the consultations with the doctors. The same happened to other requisites such as a pillow that two SPs were asked to wear under their pullover in order to look overweight as the script described the patient to be overweight. After some consultations one of the SPs did not use the pillow anymore.

As to the technical side of the acquisition of video data, Glopro worked with camcorders and an additional voice recorder. In order to obtain a comprehensive view on all participants, including the SPs as well as the physicians' faces and bodies, Glopro used two camcorders, each positioned on a tripod in different corners of the room. Two cameras were placed so that either the physician or the patient were in focus and with the other interaction partner included at least from the back. At the start of the video a clap ensured that both videos could be synced for analysis. The angle of each camcorder and its configuration were adjusted prior to the

[21] https://webofscience.com

beginning of the "official" recording and were then maintained throughout the consultation[22]. It was attempted to record all cases from the approximately same angles and with the approximately same settings of the recording devices. Larger variances documented in the video material resulted from spatial and situational conditions in each of the settings. The Würzburg observations, for example, took place in rooms used for treating patients and daylight created reflections in the video image which limited options to place the camera.

3.2.1 "Fieldwork" at Peking Union Medical College hospital in Beijing (PRChina)

Our collaborator Wei Chen[23] is a senior physician and head of department specialised in cardiology and medical education. She had met Stefanie Merse during a conference for medical educators in Germany in the preparatory phase of the project and continued to take a strong interest in the study as she is committed to promote SP methods in medical education. Glopro was grateful that the observation could start in Beijing. It took place at the Educational Department of Peking Union Medical College Hospital – a top hospital in the country[24] – starting March 4th, 2019 and lasting till March 14th, 2019. The observation was organized by Ilka Sommer and Anja Weiß from the core team (with Weiß leaving after the first week). It was a great advantage for the project that one of the PIs Tao Liu was a native speaker of Mandarin. Additionally, for the conduction of fieldwork at PUMCH, Wenting Liu, a native speaker of Mandarin, was hired as research assistant to aid fieldwork, data preparation, and translation services. They translated interactions and discussions ad hoc between observations, so as to enable Sommer and Weiß to ask meaningful follow up questions. Wenting Liu also translated many parts of the transcripts from the consultations. Later, Dan Gao prepared ELAN transcriptions, that connected parts of the videos with transcripts and translations. Chen collaborated with Fan Guo, a senior resident taking a responsible top position. Both spoke English fluently.

Due to the professional duties of the participants, the observation took place in the afternoons starting at 4 pm. Groups of five medical students arrived at a department assigned to medical education. Tao Liu introduced them to the project and then the observation started in two rooms. The rooms of observation could be monitored from another room. Each of the four groups of students was given feedback by the SPs and by Guo and Chen in a group discussion two days later after Guo had listened to the tapes of the interaction. This group discussion was translated simultaneously by Wenting Liu so that Sommer and Weiß could ask some further questions.

[22] Videos were recorded in the MTS file format with a resolution of 1920x1080 pixels. For audio recordings the WAV file format was used.

[23] The correct order of Chinese names would be CHEN (last name) Wei. In this report, Chinese names are presented in the order prevalent in Germany.

[24] According to the China Hospital Rankings, a public welfare project carried out by the Fudan University Hospital Management Institute, PUMC is in the number 1 position. More than 4,000 experts from the Chinese Medical Association and the Chinese Medical Doctor Association participated in the ranking China's Hospital Rankings: http://rank.cn-healthcare.com/rank/general-best (accessed 30th of July 2019)

The two scripts have been prepared in Germany (see 3.1.1), but were translated to Mandarin by Guo. As the ECGs were still missing when the data collection in Beijing started, Guo also found suitable ECGs for the two patients. They were later used in the other sites of observation, too. Glopro merely exchanged the patients' Mandarin names to the patients' names in the specific setting (included for Würzburg and Groningen). The script was continuously adjusted. Later Mandarin versions are not included in this data set.

Our collaborator, Chen, had designed two small questionnaires, which she gave to the participants immediately after the consultation and then again immediately after the joint feedback round. In doing so, she wanted to assess the influence of feedback on self-assessment. She would have liked to carry out the same survey at the other locations. At the other sites the observation was not organized in an educational format, however. It therefore was not possible to test the effect of feedback on self-assessment.

The SPs (two males and two females) were recruited and trained by Chen. According to Chen, about 100 SPs work in medical education at this University Hospital. Their training takes three months and they are familiarized with taking history, diagnosis, symptoms and so forth. Most of the SPs are well-educated and well-situated in their jobs. They work as SPs because of an interest in medical knowledge.

In the first group of Beijing observations (cases A to E) some misunderstandings occurred in regard to the patients' medical records (the provided lab reports, echo and ECG to inform the doctors, see 3.1.1). The original plan was that SPs hand over their records – and in particular the ECG and lab findings, that in Beijing presumably came from a local hospital – during the consultation with the physician. In the first observations the male patient actor forgot to do so. Sommer and Weiß made the mistake to use old version of the male case scenario and did not realize it during the first observations. This version did not contain the ejection fraction of the male patient, which is a central indicator for heart failure. Both mistakes were corrected starting with the second group of observations, but these first cases are interesting for comparison. Another processual problem was that doctors partly wrote on the papers or marked indicators that were later reused for the following doctors. For the next sites of observation Glopro tried to provide new copies for each physician participating in the research, but this could only be realized for Würzburg and Groningen.

3.2.2 "Fieldwork" at the university hospital in Würzburg (Germany)

Our collaborator in Würzburg, Stefan Störk, is a senior physician and head of a department specializing on and researching heart failure (Ambulanz des Deutschen Zentrums für Herzinsuffizienz, Universitätsklinikum Würzburg). He takes prominent roles in various professional associations and was approached by fellow cardiologist and member of the Glopro team, Till Neumann, after the originally planned site of observation in Germany was not feasible any longer. At Würzburg, the observation was organized by senior physicians Margret Breunig and Caroline Morbach. The local SP program, and in particular Matthias Lukasczik und Nina Luisa Zerban provided contacts for the one male and one female SP. Organization and training of the SPs was then conducted by the Duisburg team. Medical educator Stefanie

Merse trained the SPs on May 8th, 2019. The observation was conducted by Weiß and Sommer; it took place May 22/23, 2019 and May 27/28, 2019. Weiß was present for both dates and Sommer participated in the first round of observations, which enabled us to conduct some observations in parallel. German is the shared language of all participants.

Our collaborators had assigned time slots of 60 minutes and asked colleagues to participate in the research, which resulted in skill levels ranging from internship to several senior physicians and heads of departments, some of whom conducted research related to heart failure. Preliminary explanations were done by Weiß and Sommer at the beginning of the 60-minute slot. SPs gave a short feedback on demand after the consultation and Weiß or Sommer also offered a short debriefing at the end along the lines of: what would you explain to a colleague that you did not tell the patient? In contrast to Beijing, where the performance of junior physicians was discussed by their superiors as part of their medical education, the observations in Würzburg were kept as private as possible and not discussed with colleagues or superiors. The simulated treatment took place in the outpatient clinic of the hospital, i.e. rooms and settings were very realistic and we could not observe the interaction from the outside (as in Beijing, Ankara and Groningen). Our written material – the patients' medical records - had been put on the physicians' desk for their preparation and most physicians took some minutes to read it before they asked the patient to enter. Some participants noted, that normal patients would be in the hospital's IT-system. Handling our written material therefore was unusual for them and many used written forms provided by their hospital to take notes.

Most participating physicians had not been exposed to SP settings before. Some asked beforehand whether they should also examine the patient physically. Weiß and Sommer did not tell them not to, but rather answered that they could or that they should just do what they would normally do. Consequently, some of the first cases in Würzburg also asked the SPs to take off their clothes and did a proper physical examination. The SPs were surprised, but nevertheless continued to perform a compliant patient. As the setting in Würzburg did not allow for direct observation by the Glopro team, that the SPs took off some clothes became apparent to the team only when watching the videotapes later. We were concerned about the ethical implications of partial nudity on the videotape, but concluded after discussion with the SPs that the material could be used. The physical examination resulted in one physician finding a "real" heart noise in the female SP and advising her to seek a physician's advice on the matter (Case B). Another one raised attention to a disturbing spot on the skin (Case F), which also was not part of the scenario, but a reaction to the real person.

3.2.3 "Fieldwork" at Hacettepe university hospital in Ankara (Turkey)

For the observations in Hacettepe, a highly respected university in Turkey, consultation of an ethics commission in Duisburg-Essen and again in Hacettepe were necessary (see above). Our collaborator Melih Elçin is a medical educator and senior physician who had been involved with the project right from the start, but as the sociologists in the team were not aware of this necessity, the need for ethics votes delayed the start of the observations in Hacettepe. They then took place in the Medical Education Department between Dec, 10-13th, 2019 after an

initial meeting on Dec, 9th, 2019 between Ilka Sommer, Sarah Weingartz and Melih Elçin who collaboratively conducted the observations, also involving Bilge Tuncel. The working language in the coordinating team was English, but the consultations between doctors and SPs took place in Turkish. Sarah Weingartz speaks Turkish and translated for Ilka Sommer simultaneously during the SP consultations. Later, Glopro sub-contracted a sociologist in Turkey, Nazli Somel, for translating the transcripts of consultations that were conducted in the Turkish language. Gül Ayse Öcal Schiwek prepared ELAN transcriptions, that connected parts of the videos with transcripts and translations.

Parallel to the observations, the Department of Medical Education was running exams for doctors and nurses with SPs on the same floor. It was a very busy environment until around 3 pm. Then the project observations were the last ones on the floor. The room was equipped for observation through a window from outside. It also included a cot and a stethoscope and we interpreted that this could be the reason why some physicians also chose to do a physical examination.

Participants were found and scheduled by Elçin, who has a large network in internal and in family medicine. He mainly reached out for physicians specializing in internal medicine, but if they were not available, Elçin found family doctors as replacement. Participants arrived as individuals or in small groups and were introduced to the project by Elçin and Bilge Tuncel, his colleague, later by Weingartz from Duisburg, who speaks Turkish. After each consultation the SP first reentered the room to give feedback. Afterwards Tuncel or Weingartz reentered and conducted individual debriefings with the doctors.

The patients' records (our written material) was given to the physician by the SP in the course of the interaction. As family doctors usually transfer to cardiologists who, in Turkey, are the only ones who are allowed to do a heart echo, the participants (also from internal medicine) were surprised that an echo had already been included in the material. SPs were compelled to respond to this irritation by making up stories that explained why they already had undergone this examination. Nonetheless, the irritation remained. The patients' records remained with the actors. Therefore, the same problem as in Beijing occurred that doctors got to see documents with notes and marked indicators from their predecessors. We did not have the digital copies of the documents in Turkish language.

One male and one female SP who also work for Elçin in the Medical Education Department, participated in the study. SPs had a very tight schedule and needed to perform other roles in doctor and nurse training parallel to participating in our project. Based on the English script, Elçin trained the SPs with the goal to enable them to remain close to their own experience. Thus, he developed and adjusted the script orally together with the two SPs (and the Turkish scripts therefore are not included in the data set). Sommer and Weingartz were asked for their agreement to these adjustments. In consequence, both SPs have high blood pressure (not only the woman) and both use their own medication instead of the medication that Duisburg-Essen cardiologist Till Neumann had suggested for the scripts. Also, vocations were adjusted: the male SP was no longer a taxi driver, but working in a statistical office and the female SP

had not been a shop owner prior to retirement, but a homemaker. We interpret the fact that Elçin made these changes as a sign of Elçin's long experience and high standing in SP work.

3.2.4 "Fieldwork" at the university hospital in Groningen (Netherlands)

The final round of observations took place at Onderwijscentrum of the University Medical Center Groningen (UMCG). The Dutch collaborator who had participated in the proposal was not available any longer and Stefanie Merse used her networks in medical education to build a collaboration with Götz Wietasch (anesthesiology, medical educator) and Alexander Maass (cardiology, medical educator). Both are high ranking senior physicians and heads of departments and they were well connected to senior physicians in the field of heart failure. Both had migrated to the Netherlands from Germany resulting in an interest in intercultural comparison. They included cardiology resident and medical educator Solmaz Assa in the collaboration.

Ilka Sommer coordinated the fieldwork in Groningen from Jan 13-17th 2020 and was present the entire time. She also recruited three SPs (two male, one female), found through an announcement distributed by the coordinators of the local SP program and hired by the project. The script was adjusted slightly by Merse and Wietasch, mostly concerning names. Merse trained the SPs on January 13th 2020. Weiß joined Sommer after the first two days, together with intern Franziska Loos. Weingartz could not be present at the observation site, but has contributed with contextual knowledge to the preparation of the stay as she knows Dutch, and had studied and worked in the Netherlands.

The room used for the observation was situated in the educational department, i.e. interaction could be observed through a mirror, but the sound was not transported well through the mirror. Some participants noted, that normal patients would be in the hospital's IT-system and that the situation was unusual because information was given in written form. They usually studied the patients' records prepared by us before inviting the patient into the room. After the observation a debriefing or feedback discussion followed, partly together with the simulated patients and the sociologist, who usually stayed in the room while the short questionnaire was filled in by the participant.

Participants were found via the department. Our collaborators had appealed to colleagues to participate in foundational research. Consequently, the Groningen sample was very experienced and educated with several research professors and heads of departments participating. Participants were informed on an individual basis. They knew who else was participating and also that this was a "heart failure" case. In order to enhance comparability between samples we asked that a less experienced physician also participates. To have comparable cases to other samples, we also asked one doctor whether he could do a physical examination. Some of the young physicians told us that they were concerned that they would probably be compared to their seniors or that their supervisors could watch their video.

In Groningen, physicians are very fluent in English and were willing to conduct the study in English. This was helpful for Glopro because the necessity to translate on site and to later

translate and connect the translation with the video material had turned out to be resource intensive. However, some physicians commented that they sometimes had to search for words and were less comfortable because of using this working language. Also, our collaborators were amazed, that the patient arrived without a family member accompanying him/her. This was deemed to be highly unusual in the Netherlands. Even though the option to change this parameter spontaneously was discussed at length, in the end the SPs were not accompanied by simulated family members.

The Groningen physicians, irrespective of their experience and age group, had extensive experience with working with SPs. Several informants argued that medical education in the Netherlands is much more focused on communication skills than in Germany.

3.2.5 Background section: Data acquisition in WP 1

Expert interviews helped WP 1 not only to understand how the field of heart failure research has been emerging throughout recent decades, but the experts also directed the team's attention to relevant topics such as the organizational forms of guideline committees, important clinical studies and breakthroughs. If necessary, experts could also be prompted to explain and 'translate' the professional prose of the heart failure community into terms that were better comprehensible for the team's sociologists as medical laypersons. Perhaps due to the fact that the envisioned sample consisted of high-ranking professionals who are often tied into a multiplicity of institutional commitments, it proved difficult to find a sufficient number of experts willing to participate. Using (non-systematic) snowball sampling, the method of getting existing contacts to refer the researcher to other possible participants, was one way to tackle this problem. Attendance of the world congress of the European Society of Cardiology (ESC), which has recently become the central scientific congress of the worldwide cardiological community, provided a chance to meet additional experts in cardiology and conduct focused observation of the cardiological community. Abandoning the original plan of conducting all interviews face-to-face and using phone and video-conference tools instead proved to be helpful, since it made arrangements with interview partners more flexible. Finally, the world congress of the European Society of Cardiology provided an opportunity to conduct informal interviews with about another 15 experts and also to do focused observations. In total, WP 1 conducted 15 expert interviews with established members of the cardiological community and 15 more interviews with cardiologists at the world congress of the ESC.

4 Data processing and analysis, opportunities for secondary uses

4.1 Data selection

WP 1 data was excluded because the authors of treatment guidelines are highly visible in their field and they often gave confidential information. This information could hardly be anonymized and as the experts had not been asked for permission to reuse data, their interviews are not part of the Glopro data set.

In WP 2 team meetings were often taped or recorded through field notes. The multidisciplinary and international Glopro team wanted to be able to study and reflect upon the interpretation processes within the project itself. Again, this material cannot be anonymized well and participants in the team discussion did not expect their content to be made available to outsiders.

Finally, hand written memos and observation protocols were excluded from the data set. Use of abbreviations and poor handwriting create difficulties for the reuse of notes.

4.2 Data processing

The Glopro data set stored at Qualiservice Bremen consists of audiovisual recordings of 64 simulated consultations that were at the centre of work in WP 2. Original raw video files were stored in the data repository, but conversions to the more versatile MP 4-format were made as well. Additional materials include basic transcriptions with translations, fine transcriptions and translations created with ELAN, and survey data. The primary data as well as all other materials will be discussed in detail in the following.

Table 1 shows at which research sites the overall 71 cases (64 of them included in the data set) where recorded and how many hours of raw AV data correspond to each research site.

	Ankara	**Beijing**	**Groningen**	**Würzburg**
Number of recorded cases (SP consultations)	20	20	18	13
Length of the AV material (in h, approx.)	13	24	25	16
Number of cases in the data set	18	19	18	9

Tab. 1 Number of recorded cases and length of AV material in hours

4.2.1 Naming conventions

Individual files of the data set were named according to the following scheme:

ProjectID_DataType_ResearchSite_Case_SerNr

ProjectID takes the constant value “GLOPRO”.

DataType takes one of the following values: “RAW” for the original videofiles, “VID” for edited videofiles, “AUD” for audiofiles, “TRS” for transcription, “QUE” for questionnaire, and “CMS” for contextual materials.

ResearchSite takes one of the following values: “ANK” for Ankara, “BEI” for Beijing, “GRO” for Groningen, “WUE” for Würzburg, and “DUI” for all other materials and files created or coordinated at the University of Duisburg-Essen.

Case refers to one of the 64 cases (SP consultations) and takes as its value the pseudonym of the physician/student treating the SP.

SerNr is a serial number used to distinguish files of the same *DataType* and belonging to the same *case*. It always begins with “01”.

To give an example: the filename “GLOPRO_VID_ANK_Aydin_01.MP4” indicates that the file belongs to the project Glopro, was created at the university hospital in Ankara, covers a case referred to under the pseudonym Aydin, and is the first edited video file associated with this case.

4.2.2 Conversion of raw video files to MP4 and video editing

The raw data of the AV recordings were initially available in a file format that is not suitable for video processing and inclusion in QDA software such as MAXQDA, the QDA software used by Glopro members. Backups of these files were created on external, password-protected hard disks. The original files were saved to the data set, however, for further video processing and analysis with MAXQDA software, the raw data files were converted to the more versatile MP4 file format. Parallel to file conversion, the video files were shortened if corresponding passages were apparently of no relevance for further qualitative analyses in secondary use.

4.2.3 Transcription and annotation in ELAN

Large parts of the video material were transcribed. Different transcription systems were used, each meeting specific requirements. Basic transcription of originals and translations into English were prepared from the Turkish and Mandarin-language material by native speakers of these languages. Furthermore, English and German-language materials from Groningen and Würzburg, respectively, were transcribed but not translated. Some transcribers added questions and comments in brackets [].

In a further step, selected cases of the AV material were transcribed using the annotation software ELAN[25]. For the files created with ELAN, an advantage is that an AV track with the original language transcription and a translation in synchronized form is available within one file. The analysis of individual video excerpts is thus considerably simplified. A total of approximately 473 minutes of data material (257 minutes from Beijing and 216 minutes from Ankara) was converted into the ELAN format. For the work with the Turkish language and Mandarin language data, two additional transcriptionists were hired. Both were trained in

[25] ELAN was developed by the Max Planck Institute for Psycholinguistics (Nijmegen). It helps researchers create multimodal transcripts from video and audio data.
ELAN (Version 6.2) [Computer software]. (2021). Nijmegen: Max Planck Institute for Psycholinguistics, The Language Archive. Retrieved from https://archive.mpi.nl/tla/elan.

working with the ELAN software. Except for the Mandarin-language data, all transcriptions / annotations in ELAN were created closely aligned with conventions of the “basic transcript” of the Conversation Analytic Transcription System (GAT2, Selting et al. 2011).

4.2.4 Short questionnaire

The short questionnaire was intended to give the team contextual information on participating physicians’ medical education, specialization, social status, self-professed language skills and mobility experience. This questionnaire did not work in all respects at all sites, as systems of medical education, specialization and positions in hospitals vary much between countries. As mentioned above (3.1.1) Glopro did not put much effort into developing a viable survey instrument. Some categories were adjusted ad hoc. Consequently, the data should not be treated as reliable, but as contextual information.

The full questionnaire contains detailed information on educational certificates and the institutions and years in which they were acquired. It therefore is highly sensitive and not accessible off-site. In order to enable those who reuse the data to get a general impression of the differences between the site-specific samples, we converted identifying information to categories that are vaguer and less identifying. For example, year of birth was converted to 5-year-periods. Specific specializations were converted into basic distinctions such as “no specialty”, or “cardiologist”. These re-classifications may have produced further mistakes, particularly for the Ankara sample. This partially anonymized second version of the questionnaire data is available outside of the Bremen safe room.

4.2.5 Background section: Data processing in WP 1

For the quantitative part of the analysis in WP 1 team members developed and prototyped several analytical strategies in R with the help of the Bibliometrix package (Aria/ Cuccurullo 2017)[26]. The analysis allowed to identify central journals in the field as well as highly cited authors. In total, approximately 132,000 authors were identified through this approach. A considerable problem with the retrieved data set was that some authors occurred more than once, since for large parts of bibliometric sources unique identifiers (such as ORCID) have only been introduced quite recently. Neither are they used consistently. The real number of authors actively publishing in the field is therefore likely to be much smaller. However, for further processing of the data set, the "error" was reduced by filtering the data and only including authors under specific conditions (e.g. using a threshold of minimum publications and h-index).

A search for Clinical Practice Guidelines (CPGs), which have become a central instrument for regulation throughout diverse fields of biomedicine (Timmermans/ Kolker 2004; Weisz et al. 2007), was also performed. This search yielded more than 700 hits, but the entries that actually contained CPGs for the area in question had to be extracted manually and supplemented by

[26] https://www.r-project.org/about.html; https://www.bibliometrix.org/index.html

a search on Google and by following references in the relevant literature. Finally, from the resulting data set of CPGs, a list of "guideline authors" (631 in total) was generated[27].

Although the attempt to conduct a thorough science mapping of cardiological literature was later abandoned due to the mentioned issues with data processing and a lack of resources, the preliminary work helped identify central "nodes", i.e. authors in the field of heart failure research.

4.3 Data security concept and data privacy statement

A security concept for personal and only partially anonymizable research data was developed for the project. Prior to the transfer of the data set to Qualiservice Bremen, in accordance with the security concept all video data had been stored on external hard drives at the University of Duisburg-Essen and on a secure (offline) data storage at the university's Centre for Information and Media Services.

An English-language declaration of consent was prepared for the participants involved in the university hospitals in Beijing and Ankara. This declaration corresponds to the German-language declaration of consent prepared for the participants at the university hospital in Würzburg. The initial data privacy statement was drafted shortly after the introduction of the European Union's new General Data Protection Regulation in 2018. In the course of the project, also due to the exchange with the data protection officer of the UDE and the reference of the collaborator in Groningen, Götz Wietasch, a learning process regarding the topic of data protection took place. Because of this the initial consent form was revised and the consent form that was used for the participants at the university hospital of Groningen (the last site where Glopro conducted fieldwork) considerably differs from the one that was used at the start of the project.

Anonymized names were assigned in alphabetical order using frequent last names in the countries. Thus, the alphabet shows who was observed first and last in a country setting. Tables 2 and 3 show how many of the 71 participants consented to the individual options of the data privacy statements. In Würzburg, two participants gave consent for secondary analyses, but stressed that they are wary of the use of video data and that their consent only referred to anonymized transcripts. To ensure full consent, Glopro did not include these cases in the data set. In Ankara, anonymized case Nalcı does not react to the question concerning teaching purposes. This case was included in the data set, but cannot be used for teaching. In sum, 64 participants granted far-reaching rights for secondary analysis to Glopro. Materials from these consultations were included in the data set located at Qualiservice Bremen.

[27] The data set includes names and institutional affiliations retrieved from institutional webpages.

Approval was given for …	**Beijing**			**Würzburg**			**Ankara**		
	yes	*no*	*No answer*	*yes*	*no*	*No answer*	*yes*	*no*	*No answer*
a) use of anonymized videos and transcription within the research project	20	0	0	13	0	0	19	0	1
b) use of anonymized videos and transcription for the purpose of teaching	19	1	0	11	2	0	17	2	1
c) secondary use by authorized researchers	19	1	0	11	2	0	18	2	0

Tab. 2 Individual choices of approval given by participants in Ankara, Beijing, and Würzburg

Approval was given in accordance with the following options …	**Groningen**		
	yes	*no*	*No answer*
1) Participant read declaration of consent and was given an opportunity for questions	18	0	0
2) Participant participated on a voluntary basis	18	0	0
3) Participant agreed to allow third parties access to data in order to validate scientific integrity	18	0	0
4) Participant approved of data collection and use of anonymized videos and transcripts in the project	18	0	0
5) Participant approved of use of anonymized videos and transcripts for the purpose of teaching	18	0	0
6) secondary use by authorized researchers	18	0	0

Tab. 3 Individual choices of approval given by participants in Groningen

4.4 Data analysis and central findings

Interpretations were discussed in interdisciplinary focus groups, consisting of clinicians, cardiologists, medical educators, and sociologists. One focus of the data sessions was on an in-depth comparative analysis of a core sample of 29 cases in three out of four settings in which the male SP strongly expressed his concerns after having been diagnosed with chronic systolic heart failure, while having to earn his family's living from taxi driving and operating his own taxi company. This was seen as an existential dilemma of the patient, to which physicians responded with a high degree of variation. The remaining 42 patients also had to deal with first diagnosis of a life-threatening disease; they were used to supplement the analysis of the core sample.

Part of the audiovisual data was analysed with the help of multimodal conversation analysis (CA). CA focuses on the sequential and interactive construction of meaning in institutional and noninstitutional settings. Institutional conversation analysis is concerned with such questions as how the orderly taking of turns-at-talk is managed by the interactants, how turns-at-talk are constructed in such a way that they make up coherent sequences, how institutional roles (such as those of physician and patient) are reflected in participants' actions, how different linguistic and nonlinguistic resources are used to constitute specific activities, e.g., eliciting the telling of patients' concerns (Heritage/ Robinson 2006) or turning the patient's body into a medical object being ready for the physical examination (Heath 2006). In recent years, CA has been extended by multimodal analyses (Deppermann 2013), which included the communicative aspects of such modalities as gesture, gaze, prosody, facial expression, and posture. Multimodal CA shows how meaning is constituted through the incremental and interactive composition of these diverse communicative resources and semiotic fields (Goodwin 2018).

Background section: Data analysis in WP 1

WP 1 found that many of the high-ranking authors (according to h-index), who were also occupying central nodes in the citational field of cardiology, were often also members of committees for the development of diagnostic and therapeutic standards, i.e. for clinical practice guidelines. Thus, CPGs became a central unit of analysis for WP 1. Interpretation of CPGs was informed by grounded theory, which allowed WP 1 to identify a set of salient and relevant categories of current discourses on heart failure and use relevant categories as dimensions of systematic comparisons across guidelines. The analysis began with a review of current debates in heart failure research. At this stage, the goal was to become familiar with the most important tenets and problems of heart failure research in most general terms. Guidelines were read initially, but cardiological research articles and information addressed to laypersons (e.g. patients) were used as well. The analysis gained much from the insights obtained from interviews with experts in the field of heart failure, some of them even authors of CPGs. An important advantage of conducting expert interviews over reading scientific articles is that the interviewee can be asked to elaborate on the particular topics of interest. Moreover, if necessary, interviews with experts in cardiology allowed to ask the experts for 'translations' of professional language and concepts into layperson terms. This initial

engagement with the current discourses on heart failure allowed WP 1 to define a number of relevant dimensions that could reasonably be compared across clinical practice guidelines from different countries. Members of the multilingual team then analysed a number of clinical practice guidelines with a focus on selected dimensions: results were published in an article on adaptation of guideline recommendations by cardiac organizations from countries of the BRICS (i.e. Brazil, Russia, India, China, and South Africa; Liu et al. 2020). The team also found that the recommendations given in CPGs developed by these organizations were largely emulations of recommendations that had previously been published by a group of organizations constituting the “transatlantic five” of heart failure research: the European Society of Cardiology, the Heart Failure Association of the ESC, the American College of Cardiology, the American Heart Association, and the Heart Failure Society of America.

4.5 Notes on reuse potential of the data

On the basis of the anonymized transcripts the data set allows to pursue questions in sociology (sociology of medicine, social studies of science and medicine, sociology of professions, interculturality, migration research), but also basic research, e.g., in the sociology of knowledge. The video data, which could not be anonymized, can be used under the conditions of Qualiservice's data protection concept and for those cases where participants gave approval to secondary data use.

Research on medical communication as well as conversation analytic research in primary and secondary care has rarely been conducted in an explicitly transnational comparative framework. The dataset provides excellent opportunities for comparison, including comparative linguistic research. Conversation analysts usually prefer “naturally” occurring kinds of data. The major work in Glopro did not follow a conversation analytical rationale. Instead, audiovisual recordings were made of physicians and SPs who were aware that the situation that they were in was (largely) scripted by the researchers. The situation differed in particular concerning length of interaction and the desire to show one’s best. However, particularly implicit knowledge and practice can probably not be invented ad hoc. Rather, physicians can be expected to use the routines they are familiar with. Since the interaction was co-produced with the SPs and the Glopro team, we expect the observed interaction to be realistic in some, but not all respects (Weiß 2013).

In addition, the data set (especially the anonymized transcripts) has great potential for further use in medical didactics, which was pointed out several times in interdisciplinary discussion groups with Glopro’s cooperating partners. With the help of the dataset, "best practices", but also typical problems occurring in doctor-patient communication may be identified. But the comparative perspective also offers possibilities to reflect and critically question existing communicative routines in the medical field.

Future research might also expand on the existing dataset and conduct further research in settings that differ from the existing ones, e.g. in terms of language or culture, while holding other dimension of the research design stable, e.g. as the consultation of a patient with heart failure in a university hospital. Such research may not only corroborate the findings of Glopro

but also discover features that are unique to the newly included research setting. Another option may be to revisit the study sites of Glopro at (a) later time(s) and make comparisons in the longitudinal dimension. How will the primary treatment of a patient with suspected heart failure have changed in 10 years from now?

5 Additional materials

Additional materials were mentioned in the text and are provided as contextual material by Qualiservice.

Project Publications

Most publications have not been published yet. An up-to-date collection can be found here: https://www.uni-due.de/soziologie/dfgtravellingknowledge.php

Quasinowski, Benjamin (2020). "Can Metaphors of War Motivate Cooperative Action in Global Health? – A Comparative Look at Cardiovascular Diseases and SARS-CoV-2". Global Cooperation Research - A Quarterly Magazine, Vol. 2, No. 1 (April), 8-10.

Quasinowski, Benjamin; Liu, Tao (2020). "The Globalisation of Cardiology and Cardiovascular Diseases in the World–Society—A Case Study with a Special Focus on Heart Failure". Int. J. Environ. Res. Public Health 2020, 17, 3150.

Liu, Tao; Quasinowski, Benjamin; Soares, André (2020). "The Emulation and Adaptation of a Global Model of Clinical Practice Guidelines on Chronic Heart Failure in BRICS Countries: A Comparative Study". Int. J. Environ. Res. Public Health, 17, 1735.

Weiß, Anja (2016). "Understanding physicians' professional knowledge and practice in research on skilled migration." Ethnicity & Health 21(4) 397-409. doi: 10.1080/13557858.2015.1061100

Weiß, Anja (2018). "Wodurch wird professionelles Wissen transnational anschlussfähig?" In: Sigrid Quack, Ingo Schulz-Schaeffer, Karen Shire, and Anja Weiß (Hg.). Transnationalisierung der Arbeit. Wiesbaden: Springer VS, S. 129-151.

6 References

Abbott, A (1988). *The System of Professions. An Essay on the Division of Expert Labour.* Chicago, London.

Aria, M/ Cuccurullo, C (2017). "bibliometrix: An R-tool for comprehensive science mapping analysis." *J. Informetrics 11*(959-975.

Bilecen, B/ Faist, T (2015). "International doctoral students as knowledge brokers: reciprocity, trust and solidarity in transnational networks." *Global Networks 15*(2) 217-235, 10.1111/glob.12069, http://dx.doi.org/10.1111/glob.12069.

Bloor, M (2001). "The ethnography of health and medicine." In: Atkinson, P (ed.). *Handbook of ethnography*. London, pp. 177-187.

Blumer, H (1954). "What is Wrong with Social Theory?" *American Sociological Review 19*(1) 3-10, 10.2307/2088165, http://www.jstor.org/stable/2088165.

Bohnsack, R (2014). "Documentary Method." In: Flick, U (ed.). *SAGE Handbook of Analyzing Qualitative Data*. Thousand Oakes, London, New Delhi, pp. 217-233.

Bohnsack, R et al. (ed.) (2010). *Qualitative Research and Documentary Method in Educational Science - Results from Brazilian-German Cooperation*. Opladen, http://www.ssoar.info/ssoar/bitstream/handle/document/31725/ssoar-2010-bohnsack_et_al-Qualitative_analysis_and_documentary_method.pdf?sequence=1.

Brante, T (2010). "Professional Fields and Truth Regimes: In Search of Alternative Approaches." *Comparative Sociology 9*(6) 843–886.

Dahinden, J (2016). "A plea for the 'de-migranticization' of research on migration and integration." *Ethnic and Racial Studies 39*(13) 2207-2225, 10.1080/01419870.2015.1124129, http://dx.doi.org/10.1080/01419870.2015.1124129.

Deppermann, A (2013). "Multimodal interaction from a conversation analytic perspective." *Journal of Pragmatics 46*(1) 1-7, https://doi.org/10.1016/j.pragma.2012.11.014, https://www.sciencedirect.com/science/article/pii/S0378216612003037.

Esser, H (1999). *Soziologie. Spezielle Grundlagen. Band 1: Situationslogik und Handeln.* Frankfurt/M.

Freidson, E (2001). *Professionalism. The Third Logic* Cambridge.

Gille, Z/ Ó Riain, S (2002). "Global Ethnography." *American Review of Sociology 28*(271-295.

Glaser, BG/ Strauss, AL (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago.

Goodwin, C (2018). *Co-Operative Action.* Cambridge.

Heath, C (2006). "Body work: the collaborative production of the clinical object." In: Heritage, J/ Maynard, DW (ed.). *Communication in Medical Care. Interaction between primary care physicians and patients*. Cambridge, pp. 185-213.

Heath, C et al. (2004). "Tools, technologies and organizational interaction: the emergence of 'workplace studies'." In: Grant, D, et al. (ed.). *The Sage handbook of organizational discourse*. London, pp. 337-358.

Heritage, J/ Robinson, J (2006). "The structure of patients presenting concerns: Physicians' opening questions." *Health Communication 19*(2) 89-102.

Hofstede, G/ Hofstede, GJ (2005). *Cultures and organizations: software of the mind.* New York.

Leisering, L/ Liu, T (2010). "Globale Wissensdiffusion in der Sozialpolitik. Die Einführung einer Arbeitsunfallversicherung in der Volksrepublik China." *Zeitschrift für Sozialreform 56*(2) 173-205.

Leisering, L et al. (2017). "Synthesizing disparate ideas: How a Chinese model of social assistance was forged." *Global Social Policy 17*(3) 307-327, 10.1177/1468018117704381, https://journals.sagepub.com/doi/abs/10.1177/1468018117704381.

Levitt, P/ Merry, SE (2009). "Vernacularization on the ground: local uses of global women's rights in Peru, China, India and the United States." *Global Networks-a Journal of Transnational Affairs 9*(4) 441-461.

Liu, T/ Leisering, L (2017). "Protecting injured workers: how global ideas of industrial accident insurance travelled to China." *Journal of Chinese Governance 2*, 106 - 123.

Liu, T et al. (2020). "The Emulation and Adaptation of a Global Model of Clinical Practice Guidelines on Chronic Heart Failure in BRICS Countries: A Comparative Study." *International Journal of Environmental Research and Public Health 17*(5) Art. 1735, https://doi.org/10.3390/ijerph17051735.

Liu, T/ Sun, L (2015). "Maternity Insurance in China: Global Standards and Local Responses." *Asian Women 31*(4) 23-51.

Luhmann, N (1992). *Die Wissenschaft der Gesellschaft.* Frankfurt/M.

Marcus, GE (1995). "Ethnography in/of the world system: The emergence of multi-sited ethnography." *Annual Review of Anthropology 24*, 95-117.

Massey, DS (1987). "The Ethnosurvey in Theory and Practice." *The International Migration Review 21*(4) 1498-1522, https://doi.org/10.1177/019791838702100426, http://www.jstor.org/stable/2546522.

McDonagh, TA et al. (2021). "2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC." *European Heart Journal 42*(36) 3599-3726, 10.1093/eurheartj/ehab368, https://doi.org/10.1093/eurheartj/ehab368.

Nestel, D/ Bearman, M (2015). *Simulated patient methodology : theory, evidence and practice.* Chichester, West Sussex, UK, 10.1002/9781118760673.

Nieswand, B (2016). "Die Dezentrierung der Migrationsforschung." In: Kazzazi, K, et al. (ed.). *Migration - Religion - Identität. Aspekte transkultureller Prozesse*. Wiesbaden, pp. 283-297.

Nohl, A-M (2009). "Der Mehrebenenvergleich als Weg zum kontextuierten Ländervergleich. Methodologische Überlegungen anhand eines internationalen Projektes zur Migrationsforschung." In: Hornberg, S, et al. (ed.). *Beschreiben? Verstehen? Interpretieren. Stand und Perspektiven International und Interkulturell Vergleichender Erziehungswissenschaft in Deutschland*. Wiesbaden, pp. 95-110.

Nohl, A-M (2013). *Relationale Typenbildung und Mehrebenenvergleich. Neue Wege der Dokumentarischen Methode.* Wiesbaden, https://doi.org/10.1007/978-3-658-01292-2.

Nohl, A-M et al. (2010). *Kulturelles Kapital in der Migration: Hochqualifizierte Einwanderer und Einwanderinnen auf dem Arbeitsmarkt.* Wiesbaden.

Nohl, A-M et al. (2014). *Work in Transition: Cultural Capital and Highly Skilled Migrants' Passages Into the Labour Market.* Toronto.

Parsons, T (1968). "Professions." In: Sills, DL (ed.). *The International Encyclopedia of the Social Sciences*. New York, pp. 536-547.

Quack, S et al. (ed.) (2018). *Transnationalisierung der Arbeit*. Wiesbaden, https://doi.org/10.1007/978-3-658-20939-1.

Robertson, R (1992). *Globalization. Social Theory and Global Culture.* London, Newbury Park, New Delhi.

Selting, M et al. (2011). "A system for transcribing talk-in-interaction: GAT 2." *Gesprächsforschung - Online-Zeitschrift zur verbalen Interaktion 12*, 1-41, http://www.gespraechsforschung-ozs.de/heft2011/px-gat2-englisch.pdf.

Shire, K (2020). "The social order of transnational migration markets." *Global Networks 20*(3) 434-453, 10.1111/glob.12285, https://onlinelibrary.wiley.com/doi/abs/10.1111/glob.12285.

Sommer, I (2021). "Recognition of foreign qualifications in Germany: Selectivity and power in re-making professionals." *International Migration 59* (4) 26-41. https://onlinelibrary.wiley.com/doi/10.1111/imig.12831.

Tilly, C (1984). *Big structures, large processes, huge comparisons.* New York.

Timmermans, S/ Berg, M (1997). "Standardization in action: achieving local universality through medical protocols." *Social Studies of Science 27*(2) 273-305.

Timmermans, S/ Kolker, ES (2004). "Evidence-based medicine and the reconfiguration of medical knowledge." *Journal of Health and Social Behavior 45*,177-193.

Weiß, A (2005). "The transnationalization of social inequality. Conceptualizing social positions on a world scale." *Current Sociology 53*(4) 707-728.

Weiß, A (2010a). "Die Erfahrung rechtlicher Exklusion. Hochqualifizierte MigrantInnen und das Ausländerrecht." In: Nohl, A-M, et al. (ed.). *Kulturelles Kapital in der Migration. Hochqualifizierte Einwanderer und Einwanderinnen auf dem Arbeitsmarkt*. Wiesbaden, pp. 123-137.

Weiß, A (2010b). "Vergleiche jenseits des Nationalstaats. Methodologischer Kosmopolitismus in der soziologischen Forschung über hochqualifizierte Migration." *Soziale Welt 61*(3/4) 295-311.

Weiß, A (2013). *Rassismus wider Willen. Ein anderer Blick auf eine Struktur sozialer Ungleichheit.* Wiesbaden.

Weiß, A (2013 [2001]). *Rassismus wider Willen. Ein anderer Blick auf eine Struktur sozialer Ungleichheit (2. Aufl.).* Wiesbaden.

Weiß, A (2017). *Soziologie globaler Ungleichheiten.* Berlin.

Weiß, A (2018). "Contextualizing global inequalities. A sociological approach." In: Korzeniewicz, RP/ Wallerstein, I (ed.). *The World-System as Unit of Analysis: Past Contributions and Future Advances*. New York, pp. 75-85.

Weiß, A (2021). "Re-thinking Society. How can Sociological Theories Help Us Understand Global and Cross-border Social Contexts?" *Current Sociology 69*(3) 333-351, https://doi.org/10.1177/0011392120936314.

Weiß, A et al. (2010). "Migrationsbezogene biographische Orientierungen und ihre ausländerrechtliche Institutionalisierung." In: Nohl, A-M, et al. (ed.). *Kulturelles Kapital in der Migration. Hochqualifizierte Einwander und Einwanderinnen auf dem Arbeitsmarkt* Wiesbaden, pp. 197-210.

Weisz, G et al. (2007). "The emergence of clinical practice guidelines." *The Milbank Quarterly 85*(4) 691-727.

Willke, H (1998). *Steuerungstheorie: Grundzüge einer Theorie der Steuerung komplexer Sozialsysteme.* Stuttgart.

Wimmer, A/ Glick Schiller, N (2002). "Methodological nationalism and beyond: nation-state building, migration and the social sciences." *Global Networks 2*(4) 301-334.

About Qualiservice.

Qualiservice is a data service center that archives and provides qualitative research data from the various fields of the social sciences for scientific re-use. Our services include personalized and study-specific advice, as well as curation and secure processing of your data for re-use and long-term archiving. We also provide research data and relevant contextual information for scientific re-uses in research and teaching. Internationally interoperable metadata ensure that all data-sets can be searched and found. Persistent identifiers (i.e., digital object identifiers, DOI) guarantee that data and details about the study remain permanently citable.

Qualiservice was accredited by the RatSWD in 2019 and adheres to its quality assurance criteria. Qualiservice is committed to the *DFG Guidelines for Safeguarding Good Scientific Practice* and takes into account the *FAIR Guiding Principles for scientific data management and stewardship* as well as the *OECD Principles and Guidelines for Access to Research Data from Public Funding*.

Qualiservice Consortium:

PANGAEA – certified World Data Center

SOCIUM – Research Center on Inequality and Social Policy

State and University Library Bremen

GESIS Leibniz Institute for the Social Sciences

Scientific Information Service Social and Cultural Anthropology

Accreditation by

RatSWD Rat für Sozial- und WirtschaftsDaten

Funded by

DFG Deutsche Forschungsgemeinschaft

Gefördert vom Bundesministerium für Bildung und Forschung