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Ahead of Print

Coordination in telephone-based remote interpreting

Rahaf Farag and Bernd Meyer
Leibniz Institute for the German Language | University of Mainz

Telephone-based remote interpreting has come into widespread use in multilingual encounters, all the more so in times of refugee crises and the large influx of asylum-seekers into Europe. Nevertheless, the linguistic practices in this mode of communication have not yet been examined comprehensively. This article therefore investigates selected aspects of turn-taking and clarification sequences during semi-authentic telephone-interpreted counselling sessions for refugees (Arabic–German). A quantitative analysis reveals that limited audibility makes it more difficult for interpreters to claim their turn successfully; in most cases, however, turn-taking occurs smoothly. The trouble sources that trigger queries are mainly content-related and interpreters vary greatly in the ways they deal with such difficulties. Contrary to what one might expect, the study shows that coordination fails only rarely during telephone-based remote interpreting.

Keywords: telephone interpreting, turn-taking, trouble sources, Arabic, German, dialogue interpreting

1. Introduction

Information and communication technologies (ICT) such as the telephone or comparable devices provide access to interpreting services irrespective of the interlocutors' physical locations (i.e. remote interpreting). Given the frequent lack of alternatives, telephone-based remote interpreting (TI) has become an increasingly common practice in care and counselling settings to facilitate communication with refugees and migrants, also as a consequence of brain-gain initiatives, economic migration, massive worldwide refugee movements and, most recently, the COVID 19 pandemic. The limited availability of qualified local interpreters for specific languages often prevents individuals having access to in-person face-to-face interpreting services. For example, the German government agency for

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job-seekers und unemployed persons uses remote interpreting services for specific communicative purposes some 4,000 times a month (Jürgen Stahl, personal communication). Despite such widespread use, the linguistic-communicative requirements of remote dialogue interpreting have hardly been explored. This is especially true for turn-taking and turn allocation, where facial expressions and gesturing play a key role in face-to-face interpreting, in addition to such initiatives to ensure (mutual) understanding as queries, repetitions, and explanations.

The central question posed in our study is: To what extent does the lack of co-presence affect turn-taking and mutual understanding in interpreter-mediated counselling sessions conducted via the telephone? To respond to this question, we focus on the way in which telephone interpreters apply certain strategies to facilitate turn-taking and also on the sources of "trouble" (Fox et al. 2013; Schegloff 1991: 157–158) which trigger instances of repair and clarification sequences. The study does not set out to evaluate the quality of the telephone-based interpreting itself; this could be done only if the performance of all the participants were scrutinised and compared with similar empirical data from various interpreting settings (i.e. face-to-face vs technology-mediated).

Studies of consecutive dialogue interpreting reveal that interpreters play a crucial role as *involved actors* in triadic exchanges to facilitate communication with persons with limited linguistic resources when the language barrier is non-permeable (e.g. Angermeyer & Meyer 2021; Apfelbaum 2004, 2008; Bolden 2000, 2018; Knapp-Potthoff & Knapp 1986; Martini 2008; Mason 2009; Merlini 2015; Meyer 2002, 2012; Roy 2000). In her seminal work on dialogue interpreting, Wadensjö (1992, 2002, 2015) distinguished between *implicit* and *explicit coordination*. Baraldi and Gavioli (2012a) have developed this distinction further by proposing the concept of *basic* and *reflexive coordination* (linking the latter to intercultural mediation). This is intended to avoid a sharp distinction between the various rendition types and discussions about their closeness to the original. The overarching objective has been to shift attention to effective communication and the collaborative achievement of understanding. *Implicit* or *basic coordinating moves* are closely linked to the task of relaying and the turn-based reciprocal progression of talk as action. In contrast, *explicit coordinating moves* do not have a counterpart in a preceding sequence by a primary interlocutor (i.e. non-renditions). Explicit coordinating moves may vary in form and function, but they serve principally to organise a continuing communicative process (including interpreting activities) and to smooth its flow. Merlini (2015) classifies such manifest coordination as a "metacommunicative activity, whose aim is [also] to resolve communication problems by, for instance, clarifying, expanding, repairing, questioning, or formulating understanding of the meaning of conversational actions". In the light of this classification, it is clear that interpreting is "a complex activ-

ity that cannot be understood as the straightforward rendering of other people's talk in another language" (Bolden 2000: 415). Bolden shows how "interpreters' actions are shaped not only by other people's talk, but also by their own independent analysis of the ongoing activity and the specific requirements it poses for the participants". Clarification-seeking and information-eliciting actions in the dyadic exchanges with one of the interlocutors (e.g. question–answer sequences) are therefore regarded as an integral part of the interpreting process that help to achieve the goals of a communicative event (Bolden 2000: 391–393, 414–415).

What is evident here is that all coordinating actions depend on the use of verbal and non-verbal resources to which the participants in telephone conversations have only limited access, such as back-channels or non-verbal cues. Therefore, in this article, we explore and quantify selected aspects of turn-taking and the processes aimed at dealing with various trouble sources to achieve mutual understanding in a defined setting, namely, counselling refugees on their residency status, family reunification, language courses, etc. The present study draws on recent findings of interaction-oriented interpreting research informed by conversation analysis.

According to Sacks, Schegloff, and Jefferson (1974: 696, 727), turn-taking is a system that regulates speaker change and its recurrence. It is locally managed by the participants themselves with respect to turn order and turn size through interactive collaborative work. Moreover, it builds on the co-participants' alignment with the speaker's action to ensure a smooth progressive flow of conversation following a simple set of rules (e.g. "one speaker at a time"; smooth turn transitions, preferably without gaps and overlaps). Our goal was to investigate the ratio between successful and unsuccessful turn-taking. In addition, we were interested in the ways in which clarification sequences and explicit coordination are organised in remote settings. We wanted to determine the extent to which clarification sequences can be traced back to problems specific to telephone-based mediation.

We start by briefly reviewing recent research on telephone and video remote interpreting in community settings (Section 2) and describing the data-collection process and our data curation (Section 3). We then move on to the methodological framework, explaining the categories we analysed (Section 4), which are illustrated with examples. Finally, we report on the quantitative findings of this study (Section 5) and summarise the implications for practice and further research (Section 6).

2. Previous research on telephone-based interpreting in bilateral community settings

Audio-based interpreting refers to various solutions that enable and facilitate bilateral encounters over long distances by providing access to an interpreter off site. This could entail connecting them via the telephone (or a similar purely auditory medium) to one or more of the primary interlocutors, whom they cannot see directly – whether they are all located in different places or not. We consider the matter of spatial distribution to be conceptually insignificant. Therefore, in TI a remote interpreter need not be located in the same place as one of the interlocutors; and the interlocutors can all be located remotely. In our study, the interlocutors and interpreters used traditional landline telephones to communicate (Section 3.1). Consequently, we use the term *telephone-based interpreting* (TI) to designate remote interpreting via telephone (i.e. telephone-based dialogue interpreting) or comparable means (e.g. mobile phones, software applications) as opposed to *telephone conferencing* (Braun 2015a: 352–353; Kelly & Pöchhacker 2015: 413; Rosenberg 2007: 68; Spinolo et al. 2018: 13–14).

The telephone was the first telecommunication system to be used for remote interpreting in the 1970s, initially in (medical) emergencies, then in numerous community-based institutional settings. It then started being incorporated into research in the 1980s and 1990s in response to the increasing demand for borderless communication and efficient audio-visual solutions (e.g. video-based services).[1] Yet, scientific research on the interactional dynamics in telephone-mediated dialogue interpreting remains rather sparse. Aspects which continue to be focused on include:

- measures to deal with challenges or to minimise shortcomings – for example, Bischoff & Grossmann (2006), Kelly (2008a, 2008b), Wadensjö (1999);
- feasibility, suitability, fields of application, identifying research needs for the practice – for example, Kelly (2007, 2008a), Langer & Wirth (2014); Ozolins (2011);
- experience questionnaires, field reports, (self-)assessments (e.g. expectations vs. real-life practice) – for example, Angelelli & Ross (2021); Gutiérrez (2021); Kelly (2008b); Kelly & Pöchhacker (2015); Korak (2012); Locatis et al. (2010); Wang (2018).

1. Its use was first proposed in the 1950s (Nestler 1957). For an insight into the beginnings of remote interpreting services, their boom and the common fields of application, see, for example, Andres & Falk (2009), Braun (2015a, 2015b), Kelly (2008b) and Kelly & Pöchhacker (2015).

To date, empirical and granular analyses of linguistic interactional practices during the interpreted encounters are outnumbered by rather normative and evaluative studies such as those listed above. In recent years, linguistic-communicative practices involving coordination, turn-taking management, and resolving problems of understanding have increasingly been in the spotlight of scientific interest. This trend was stimulated by the shift towards a descriptive approach in interaction-oriented interpreting studies (e.g. Apfelbaum 2004; Baraldi & Gavioli 2012b; Roy 2000; Wadensjö 1992) together with the boom in holistic multimodal analyses of communicative activities (including interpreters' performance) in remote constellations (e.g. Amato et al. 2018; Davitti 2019; Pöchhacker 2020).

Organising turn-taking is a basic task of the dialogue interpreter's coordinating role, which is assumed to be hampered by the conditions of working at separate sites and having to use a medium to interact (i.e. technological solutions). The lack of a physical co-presence caused by a split spatial set-up is often blamed for imposing constraints on the auditory and visual access to one another. This, in turn, apparently reduces the interpreter's ability to engage with the participants and manage the ongoing communicative process – even more so when using unsuitable equipment or when facing any kind of network disruptions or further (unpredicted) impairments of a technical or situational nature that cannot be (quickly or easily) remedied (Davitti & Braun 2020: 283; Hansen & Svennevig 2021: 145).

Earlier micro-analytical studies on TI provide examples of the effects of these extraordinary circumstances. The cases presented are mostly fraught with problems, therefore reflecting poorly on telephone-mediated dialogue interpreting as a whole. Wadensjö (1999) compares TI and face-to-face interpreting during two real-life Swedish–English police interviews that involve the same participants discussing the same case. She considers face-to-face interpreting to have an advantage over TI because:

- it creates an enhanced "sense of immediacy";
- the exchange of turns is smoother;
- participants get to capture more "communicative cues" and therefore have better opportunities to synchronise their collective activities;
- overlaps with speakers' talk (e.g. back-channelling) are usually perceived as cooperative, not as disruptive, if at all audible;
- turns and moments of transition are mostly of shorter duration, also owing to the speakers' faster speed;
- the interpreter seems more assertive in performing their coordination tasks; and
- the communication flows seamlessly.

Nevertheless, Wadensjö states that the loss of visual impressions does not necessarily affect the quality of the interpreting as much as it does the reduced sense of timing and immediacy, which, in comparative terms, cannot be compensated for in TI encounters (Wadensjö 1999: 254, 262).

Recent studies also investigate the effects of interactional problems. What they all have in common is that they often correlate the quality of the interpreting with communication management. Wang and Fang (2019), for instance, examine the accuracy of the interpreting conducted by professional Mandarin–English interpreters in one on-site encounter and two telephone-mediated encounters that were simulated based on authentic social services' cases and transcribed for the purposes of their exploratory study. They quantified different types of interpretations (close renditions, additions, omissions, distortions). "Unjustifiable" actions of the telephone interpreters, such as deviations from the original utterances, were ascribed to interpreting difficulties, cognitive overload, fatigue, and turn-taking problems as well as to the interpreter's inability to act "proactively" or to come through when necessary – aside from the (inevitable) technologically induced hurdles. Moreover, several additions and omissions were classified as strategic moves of coping with such difficulties (Wang & Fang 2019: 57).

Together with descriptive studies on various types of remote interpreting, a need to discuss its consequences for teaching has emerged. Coordination, turn organisation and managing the opening and closing of the calls have become an essential part of training courses, some based on general assumptions or individual reports, others on a collection of critical instances (cf. Amato et al. 2018; Rodríguez & Spinolo 2017). Amato (2018) has also investigated the dynamics of communication and the techniques used in remote settings from a pedagogical perspective. Her data set comprises conversation-analytic transcripts of 25 recordings (15 healthcare service calls, four calls to the police and six tourist service calls). All the participants (including the telephone interpreter) were located remotely (so-called three-point telephone interactions). The organisation of turn-taking proved to be difficult. Her data show "no instances of the interpreter trying to regulate the length of the speaker's turns" (Amato 2018: 85). But there are instances where interactions were coordinated, especially the turn allocation. A recurring pattern was producing requests addressed to the primary interlocutors to take the floor and requests to hold on until they have completed their interpretation to avoid disruptions in case a speaker was trying to win back their turn. Moreover, Amato (2018: 86) points to coordinative actions at a content-related level, such as speeding up the calls by helping to collect information (e.g. personal details) without or before being asked for it by the specialist. It is also interesting to look at her approach to the analysis of "comprehension problems" and "interpreting problems". "Comprehension problems" in her data are traced back

to poor sound quality, a speaker's unclear or improper pronunciation and their insufficient background knowledge. Proper names and culture-specific items were identified as frequent trouble sources. "Interpreting problems", on the other hand, seem to cover all difficulties and misunderstandings that are not related to specific acoustic phenomena; these included inaccuracies and missing the use of referential pronouns. However, the nature of the problems and the main causes were not systematically quantified or described. Amato's qualitative analysis provides examples for trainees and students that should help them to prepare for the particularities of the TI setting.

Other researchers argue that interpreting off site is not necessarily more stressful or difficult than interpreting on site. Ko (2006) and Xu, Hale and Stern (2020) do not emphasise the effects of physical separation on the accuracy of interpretation and interactional management as much as they do the interpreters' skills, the adequate working conditions and the user's experience with, first, interpreter-mediated interaction and creating a triadic communicative event in general, second, taking on a more active coordinating role when required to do so and, third, with making up for the lack of visual and contextual cues (e.g. by explaining the missing cues and providing the interpreters with additional information). These studies, however, are based on the researchers' observations (as in the case of Xu et al. 2020) or on surveys and field reports of the interpreters' opinions (as in the case of Ko 2006, who could not record any data due to privacy policies). Rosenberg (2007: 74–75) conducted more systematised analyses of 1,877 calls conducted over a 14-month period in different settings and with different constellations (interpreter-mediated telephone conversations, interpreter-mediated face-to-face conversations with speakerphones, telephone passing); this study showed that the constellations and situational factors have a greater impact on the communication and interpreting process than the inherent difficulties of telecommunicating without a shared frame of reference per se.

Accordingly, one would assume that video-based interpreting would clearly have an edge due to the visual input. The results of empirical studies suggest otherwise, though. According to de Boe (2020: 95–98) in a comparative study on the impact of telephone- and video-based interpreting on quality in (authentically simulated) healthcare settings as opposed to face-to-face interpreting, the number of "problematic issues" occurring at the interactional level (miscommunication, turn-taking, overlaps, false starts, etc.) was clearly higher in the remote constellations. Interestingly enough, video-mediated encounters, not telephone-mediated encounters, had the highest number of "communication breakdowns", which required increased engagement in communication management and great skill in dealing with the technical challenges. The participants in TI calls, on the other hand, exercised more "caution" when taking turns to talk (e.g. waiting for

turn-yielding cues, creating longer gaps between turns, increased "moments of silence" between utterances and renditions, producing longer turns), thus promoting a more organised communication flow. Yet, in retrospect, these participants perceived their interactions as quite slow and less fluent at times (de Boe 2023: 221–228). These results are in line with those of Wadensjö (1999). Despite the alleged "shortcomings" of TI, the results of the study are rather positive, the author stating that the challenges which emerged were manageable:

> Given the willingness of participants to collaborate to arrive at a mutual understanding, as well as the progress of technology, [remote interpreting] can be considered a viable interpreting method – alongside [face-to-face interpreting] –, provided that its specific characteristics are acknowledged and taken into account. (de Boe 2023: 240)

In the studies outlined above, linguistic-communicative practices are often described based on their impact on content-related aspects of the communication, which is in itself subject to various situational and technical factors. Particular emphasis is placed on interactional issues such as the organisation of turn-taking when they prove to be relevant to the quality of an interpretation or to the enactment and the effectiveness of certain actions, often simply by analysing individual sequences in detail. In the light of these findings, we would like to explore from a descriptive point of view to what extent the turn-by-turn development of an interaction and the negotiation of understanding are actually impaired by the particularities of TI in dialogic encounters. Therefore, we combine qualitative and quantitative analyses to ascertain problems and to determine both their frequency and their overall significance to the interaction. However, before we introduce and explain the categories that we want to quantify and examine, we must first describe our data set and the nascent TIGA Corpus (*Telephone Interpreting German–Arabic*; Meyer & Farag 2023).

3. The TIGA Corpus: Data collection and transcription

3.1 Data collection

Our study assesses Arabic–German interpreter-mediated counselling sessions about general asylum-related topics (e.g. family reunion, search for employment, language acquisition, educational issues, flat-hunting, divorce proceedings). The data stem from 12 audio and video recordings (with a total length of approximately 7.5 hours) made during interpreter-mediated encounters between German counsellors (CS), Arabic-speaking clients (CL), and telephone interpreters

(TI).[2] The interpreters were located at a different site from the counsellors and the clients and so they had to be called in from afar. They were able to interact only audibly with the clients and the counsellors, who, in contrast, were co-located and physically co-present, as shown in the figure below (telephone-based remote interpreting). The clients and the counsellors communicated with the interpreters via a speakerphone. This setting, in which the interpreter is located at a different site from the main interlocutors, is typical of TI in social-service contexts in Germany. The participants' speech was recorded at their different sites:

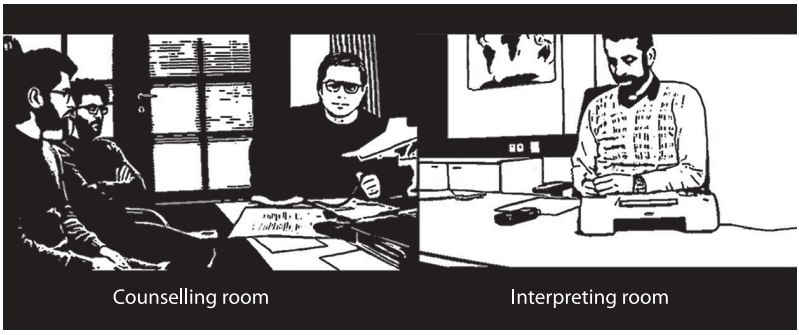


Figure 1. Screenshot of the recorded locations (i.e. counsellor's room and interpreter's room)

We explored triadic constellations (face-to-face encounters interpreted via a speakerphone), except for two four-party sessions with two clients (close relatives), as illustrated in Figure 1. All the interpreters and some of the counsellors were involved in at least two of these sessions. The audio and video recordings of the interactions include all the participants and locations of each interaction, in both the counselling and the interpreting room.[3] They provide a view of the participants from different angles. We brought together refugees with real counselling needs and counsellors from local authorities, booked the appointments and arranged the recording set-up. The settings can therefore be regarded as semi-controlled in this respect. The counselling sessions, however, were managed solely by the participants themselves. They had full control over the course of their interactions and their use of the telephone. Most of the clients were Syrian refugees; all of them were in serious need of advice. They did not have a (sufficient) command of conversational German, which is why they were as heavily

2. In this article we use English speaker abbreviations instead of the German tier labels in our corpus.

3. The participants provided their consent to be recorded in a written declaration.

reliant as the counsellors on the interpreting, which was performed in consecutive mode. The migration and integration counsellors could not resolve all of the concerns raised and therefore, as is often the case, referred the clients to the appropriate contact. The interpreters held a relevant university degree (BA and MA graduates). Most of them were sworn interpreters registered with the district court. All of them had several years of professional experience in working with the German authorities and communal institutions, but they lacked (solid) experience in working under remote conditions. Both the counsellors and the clients had scant experience with using TI services – and if they had any experience at all, it was limited to lay interpreting services.

We are aware that the semi-controlled setting, especially the presence of the recording devices, may have influenced the interaction to some extent (see Labov 1972: 61). Yet, the participants became so involved in the interactions that they gradually turned their attention away from these devices, and even began to forget that they were being recorded (see also Roy 2000: 48). The consecutive mode of interpreting may indeed have reminded them occasionally of the recording situation and the presence of the observer (i.e. the first author) in the counselling room. However, we assume that any potentially enacted or calculated actions do not have a significant impact on our analysis, since the relevant phenomena cannot be fully controlled, at least not consistently throughout the interaction. Besides, the participants were not informed about the main research questions in advance.

3.2 Data transcription

We processed and assessed the recordings qualitatively and eventually quantified the relevant phenomena, moving backwards and forwards between the working transcripts, the data analysis and the interpretation. We used the EXMARaLDA Partitur-Editor (Schmidt 2009; Schmidt & Wörner 2014) as a software tool to reconstruct the multidimensionality of the interaction process, which evolves cooperatively and successively. It was important to take into account two basic characteristics of spoken language communication[4] when we determined the conventions for the transcription: the first was the interactivity of talk-in-interaction, which is a product of multi-party collaboration and joint efforts by the participants; the second was the temporal-sequential structure of talk-in-interaction (see Farag 2019: 3–4).

4. This article is based on the concept of spoken language rather than that of orality. We use the term *spoken* instead of *oral* as long as the medium of communication or its form of realisation is not in focus.

In order to reconstruct these characteristics adequately, we largely followed the conventions of semi-interpretive working transcription.[5] The procedure is interpretive, expandable, and refinable, since it hinges on the epistemological interest of the transcriber, their analytical purposes and their conception of talk.

The talk itself undergoes manifold reducing actions when it is cut down to limitable phenomena in order to allow a more precise interpretation. Our analysis is mainly based on the audio recordings: we included descriptions of non-verbal actions only when relevant. A two-dimensional continuous score interface presents the events, which unfold linearly, horizontally along a left-to-right timeline. The score interface displays several annotation types and simultaneous activities vertically in tiers. It allows the transcriber to specify whether these activities are verbal, non-verbal or paraverbal, whether they are acoustic and/or visual and whether they occur collaterally or not – for instance, as faults in the telephone line or as disruptive background noises (Schmidt 2012).

What is crucial to the present study is the ability to synchronise entries in the tiers or segments with each other, just as in a musical score. The initial analyses indicated that difficulties experienced in taking and allocating turns – for example, the imperceptibility of (a) pauses for breath and thought, (b) verbal phenomena to claim the turn, (c) kinetic turn-related activities (e.g. gestural cues), and (d) facial reactions – are related, inter alia, to the physical absence of the interpreter and the lack of tactile and kinetic resources during the telephone call, as well as the limited audibility of the interpreter, especially when technical problems cause overlaps (Farag 2021; Farag & Meyer 2022).

A mere vertically and sequentially organised format – that is, a line-by-line display as in a theatre script – would not have made it possible to create an enriched basis for analysis, as was needed to achieve these results. Another reason for adopting these transcription conventions is that they embrace the particularities of talk-in-interaction but treat linguistic variation at the phonetic-phonological level mostly indifferently. Unusual pronunciation and articulatory features should be represented only if they seem valuable for the analysis and its dissemination or if they acquire a certain relevance. Steering a middle course by using a literary transcription has proven to be vitally important due to the diverse non-standard Arabic varieties, including Egyptian, Libyan, Moroccan, Syrian, and Yemeni Arabic, spoken by the participants. An extensive reconstruction would make it harder to formulate queries to the corpus and eventually hinder computer-aided evaluation.

5. *Halbinterpretative Arbeitstranskription* (HIAT); see Ehlich (1993); Rehbein et al. (2004); Schmidt (2011).

We transcribed all the audio recordings and produced relatively idiomatic, yet denaturalised[6] (i.e. unpolished) German translations of the Arabic sequences that will give non-Arabic readers access to the content of the utterances. English back-translations of Arabic utterances have been added for presentation purposes only. Three native speakers of Arabic (BA and MA students of Translation Studies) were also involved in the transcription and translation process, checking one another's work (following the four-eyes principle). They had profound knowledge of Egyptian, Jordanian and Palestinian Arabic, and Algerian and Maghrebi Arabic.

Transcribing Arabic–German data presents serious challenges, principally owing to the particularities of Arabic scripting (character set, right-to-left writing system, spoken vs written language, language varieties), which substantially influence the way the research questions can be addressed. These challenges are partly of a theoretical-methodical nature (such as the forms of transcript layout, the way the readers are led to the curated data, the analytical path and the trains of thought as well as the process of translating[7] non-German utterances and making them accessible to non-Arabic readers), and partly of a practical text-technological nature.

As indicated in Farag (2019) and Farag & Meyer (2022), transcription and annotation techniques cannot simply be adopted to visualise and conserve spontaneous talk-in-interaction when different writing directions are involved. Technological reasons have ruled out any chance of integrating the Arabic script in multilingual analytical transcripts. This is because the opposing and (largely) incompatible directionalities hinder the correct display of the linear temporal structure (reciprocal, simultaneous, sequential progression of linguistic actions) and the multi-layered annotations of the interaction processes. We therefore chose a romanised transcription of the Arabic sequences, which enables a vertical synchronous arrangement and rightward navigation. The adopted system builds on the well-established guidelines of the German Oriental Society, known as the DMG romanisation, which date from 1935 (Brockelmann et al. 1935). This system holds on to the features of the spoken daily languages, unlike what was originally stipulated by the DMG and similar guidelines that focus exclusively and persistently on written, standardised languages and varieties (e.g. Modern Standard Arabic). This is why Farag (2019) resorted to dialectological and sociolinguistic work (e.g. Aldoukhi et al. 2014, 2016; Bassiouney 2020; Fischer & Jastrow 1980; Grotzfeld 1965; Harrell 1962; Hoogland 2016; Kuhnt 1958; Maas 2011; Woidich

6. For the term "denaturalised transcription", see Bucholtz (2000).

7. On the problem of transcript translation, see, for example, Belczyk-Kohl (2016) and Nikander (2008).

2006). She combined phonological and orthographic approaches in order to arrive at a phonologically oriented representation of deviations and non-standard phenomena (including back-channels and hesitation markers) in an attempt to develop literary conventions. The system heeds the principles of readability, comprehensibility, and consistency, while partly defying authenticity, in order to render the data practicable, analysable, and reusable (e.g. by making the corpus readily searchable).

In the following section we explain the analytical framework and define the categories used in the quantitative analysis presented in Section 5.

4. Categories of analysis

As outlined in Section 2, interpreter-mediated interaction via telephone is mostly argued to be quite challenging due to technical constraints (e.g. lack of visual access and a shared communicative radius, limited audibility) and the effects of physical separation on the interactional dynamics. Whereas previous studies have often adopted a qualitative approach to shed light on the critical cases, we seek to determine the number and extent of critical cases after having identified them in our corpus.

In this section, we define and provide examples of the categories to be quantified in the TIGA Corpus. Our analysis focuses on the dynamics of turn-taking and achieving understanding. The interpreters' actions are of primary interest. In order to analyse the flow of talk, we study and classify turn acquisitions and turn claims (Section 4.1). To identify the reasons for clarification or ratification requests, we are keen to ascertain the sources of trouble that prevent understanding (Section 4.2).

4.1 Turn-taking

In the light of the situational and technical particularities of telephone-mediated settings (Section 2), it would be safe to assume that telephone interpreters face difficulties organising the ongoing talk, in particular in acquiring access to the turn space and controlling turn transitions. Accordingly, speakers would not alternate smoothly in turns, causing the remotely located interpreters to have to struggle to induce turn transitions (i.e. to interpret, intervene, coordinate, etc.). Interpreters would therefore either succeed in taking control or fail at attempting.

4.1.1 *Types of turn acquisition: Smooth vs forced turn-taking*

The term *turn acquisition* refers to all successful takeovers, that is, situations in which a listener takes the turn from a speaker, claiming the speaker role for themself and succeeding in maintaining it (see Couper-Kuhlen & Selting 2018; Steensig 2012). We distinguish between *smooth* and *forced turn-taking* to describe the nature of an acquisition, or rather the method by which a takeover is induced and accomplished.

Smooth turn-taking

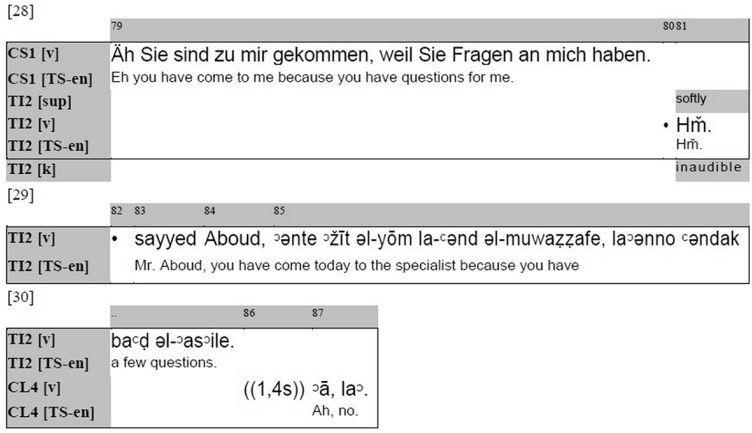
Our concept of *smooth turn-taking* covers all cases of self-acquired turns without particular effort or intervention:

a. turn transitions without a gap (i.e. a pause);
b. turn transitions with a (slight) gap;
c. turn transitions with a slight (non-disruptive) overlap which are induced prematurely when a turn – more precisely, a turn-constructional unit – seems to have almost reached its end, therefore indicating a turn allocation (syntactically, semantically, pragmatically or prosodically).

Excerpt 1 demonstrates an easy-flowing "speaker change" or a "smooth interchange of speaking turns between the conversational partners" (Cutler & Pearson 1985: 139; Sacks et al. 1974; also see Gravano & Hirschberg 2011: "smooth switches"). In score Section 28,[8] the counsellor (CS1) finishes her turn by encouraging the client (in German) to express his concerns and pose his questions. The interpreter confirms his understanding using an interjection ("Hm̆"); however, he does so using a soft pitch, which is therefore inaudible to the interlocutors in the counselling room. Then he acquires the turn after a micropause in score Section 29 and translates the utterance (into Arabic) for the client.

8. Following Schmidt et al. (2016: 68), we use the term "score section" as a translation of the German term *Partiturfläche* when referring to a structural unit in the transcript represented as a musical score (see Section 3.2). In other words, a transcript consists of a number of score sections, which are further divided into segments.

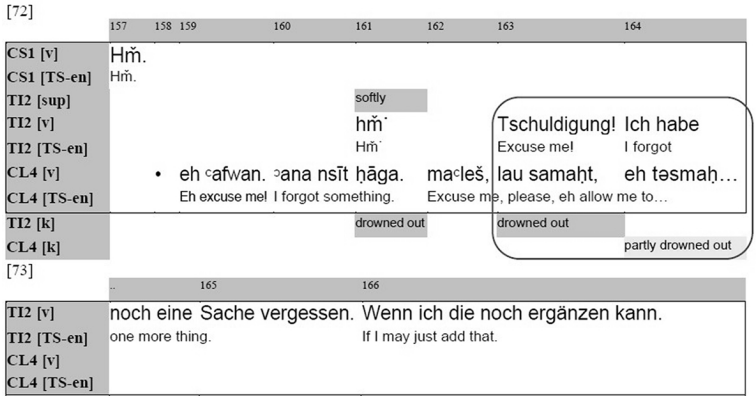
Excerpt 1.
Smooth turn-taking (TIGA4)



Forced turn-taking

In the case of forced turn-taking, the smooth flow of conversation is disrupted by irregularities such as interruptions and (longer) simultaneous sequences (harmful, problematic overlaps). We identified and counted all those instances in which the interpreters forcefully took over the turn even if the current (now previous) speaker had marked a pause. In other words, it does not matter whether the turn was obtained at a convenient and/or a vital juncture or not, as long as the premature self-selection by a listener (here: the interpreter) terminated an ongoing turn. As marked in Excerpt 2, the client (CL4) had not finished expressing his request when the interpreter (TI2) started translating into German, causing the client to give up his turn.

Excerpt 2.
Forced turn-taking (TIGA4)



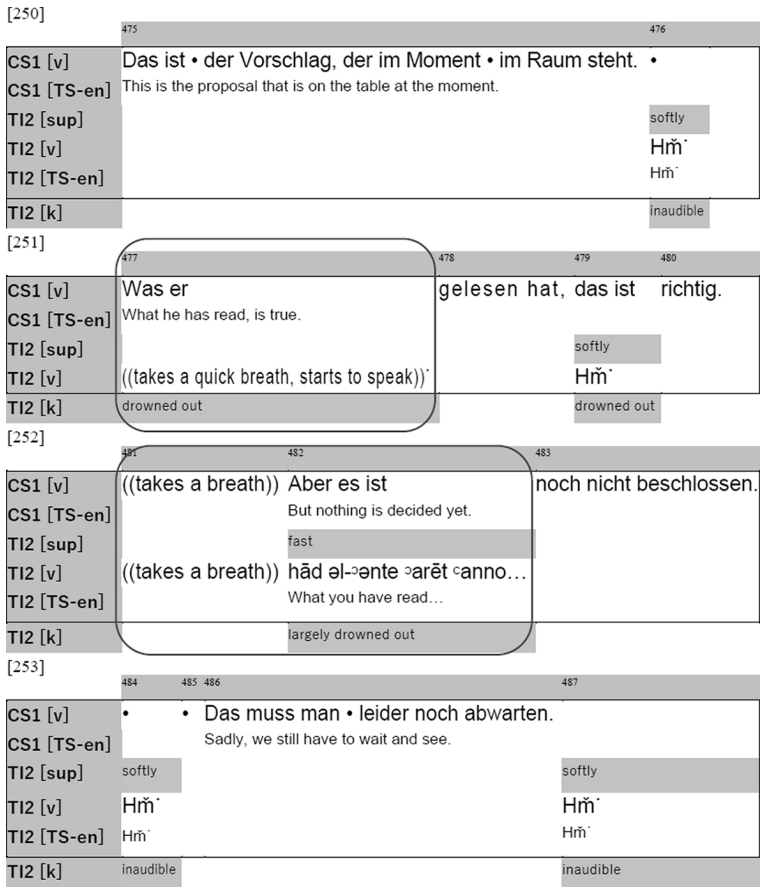
4.1.2 *Failed turn-taking (turn claims)*

We use the term *turn claims* to designate failed turn-taking and aborted takeovers, that is, situations in which a listener tries to wrest the turn from a previous speaker, but to no avail (see e.g. Duncan 1972, 1973; Mondada 2007). Before making a quantitative analysis of the interpreters' futile attempts to take over (i.e. turn claims), as presented in Section 5, we identified the causes and the timing of such attempts and distinguish between those that were made at a transition relevance place (TRP) and those that were made at a non-transition relevance place (non-TRP). Sacks, Schegloff, and Jefferson (1974: 707, 727) define "transition relevance places" as "possible completion points of the talk that occupies current turn". Selting (2000: 478) also views them as "points of possible completion of unit-types [i.e. turn-constructional units] […], which make turn transition relevant, but not necessary" – seen from the point of view of the participants who project completion or potential turn transitions by means of various (syntactic, prosodic, pragmatic, etc.) cues. Hopper (1992: 104–105) refers rather to a "span of time [during which] the floor is open for speakership bids", hence "an opportunity zone for a next turn beginning".

Claiming the turn at a transition relevance place

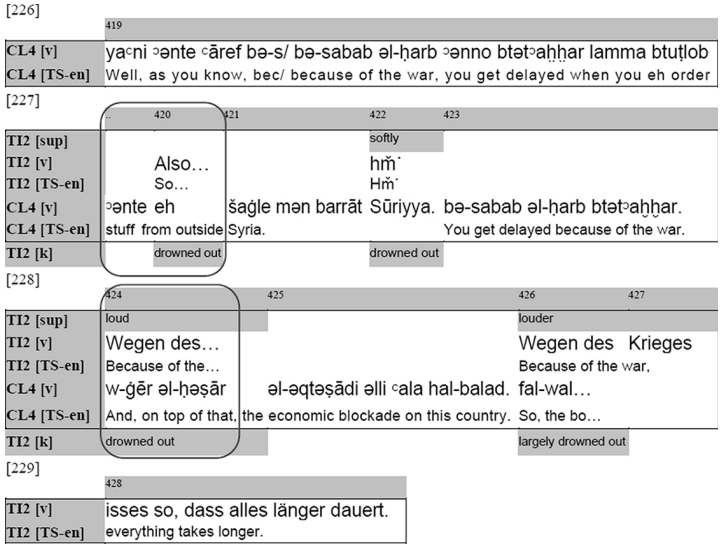
Excerpt 3 illustrates the interpreter's failed attempts to acquire the turn, although they are performed at a potentially convenient place to take over. First, he takes a quick breath after having ratified the counsellor's statement, starts to speak, but stops instantly when the counsellor continues her turn (score Section 251). Then he tries to obtain the turn by producing a lexical unit after the counsellor pauses for breath, but, again, without any success (score Section 252; aborted utterance). These attempts are interesting because they reveal a particularity of speakerphone-mediated interpreting: the limited audibility of the participants. Owing to the fact that we audio-visually recorded both interaction rooms, we had additional access to all the actions performed in the interpreter's and the counsellor's workspaces, unlike the participants. Going back and forth between both recordings helped us to estimate the audibility of the performed actions. As shown in Excerpt 3, the interpreter's failure to acquire the turn can be traced back to his largely inaudible or drowned attempts that the counsellor could barely perceive, bearing in mind the lack of visuals.

Excerpt 3.
Turn claim at a transition relevance place (TIGA3)



Claiming the turn at a non-transition relevance place
Contrary to Excerpt 3, the following example shows how the interpreter (TI2) is making an effort to take over and create a space for interpreting the client's war accounts and hurdles into German in his extended turns. However, he is clearly not intervening at the right time; thus, as shown in Excerpt 4, he is again being drowned out (i.e. inaudible due to overlapping talk) in the counselling room until he raises his voice and finally succeeds in forcing the client to stop his narrations and give up the turn (score Section 228, segment 426).

Excerpt 4.
Turn claim at a non-transition relevance place (TIGA4)



4.2 Trouble sources

Our qualitative analysis of question–answer sequences initiated by an interpreter or directed to them by one of the interlocutors revealed various trouble sources – that is, reasons for the requested clarifications, ratifications, and repairs that put the ongoing action on hold until the trouble was resolved (see Fox et al. 2013; Schegloff 1991). These created new interactive dynamics that disrupted the main course of action in part, yet which were essential to its progress and achievement (see Bolden 2018). We identified the following trouble sources in our corpus: (a) acoustic perception, (b) a lack of visual cues, (c) the use of dialect, (d) content and, (e) cognitive load. In the next section we provide examples of these types of trouble sources.

4.2.1 *Acoustic perception*

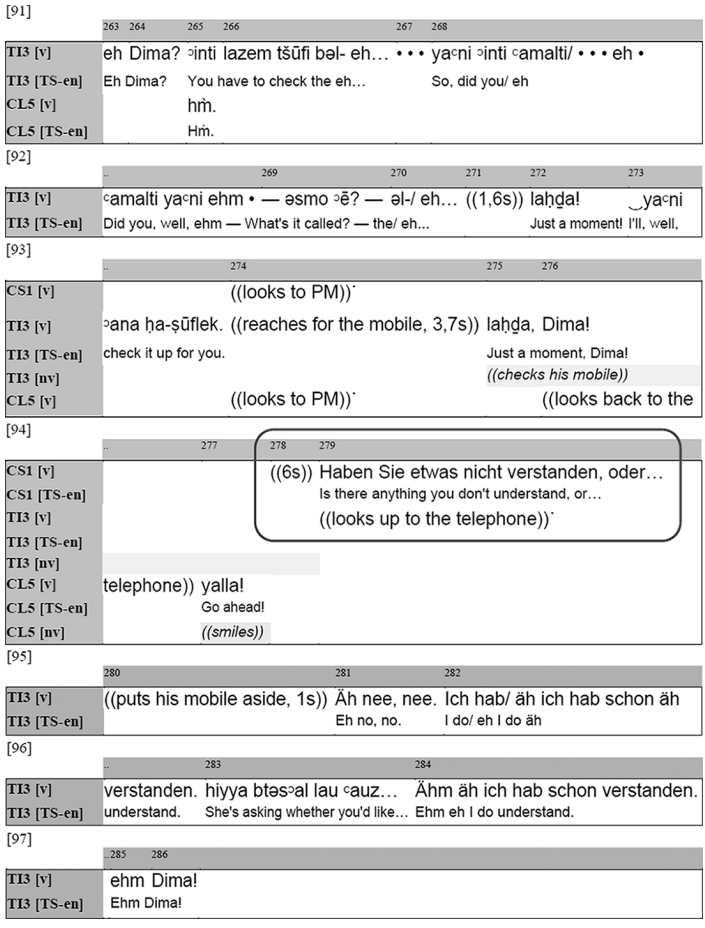
Some queries resulted from poor audibility owing to simultaneous talk, the lowness or softness of a voice, network disruptions or further unpredicted and/or uncontrollable technological impairments.

4.2.2 *Lack of visual cues, lack of transparency: Irritated interlocutors*

Some queries were traced back to the physical absence of the interpreter or the interlocutors and the lack of visual cues associated with it, as exemplified in Excerpt 5 during an interpreting turn.

There, the interpreter (TI3) was rendering the counsellors' utterances (CS1) into Arabic when the trouble occurred. He seems to have had difficulty in finding a term in Arabic: He reached for his mobile and asked the client (CL5) to wait until he had looked it up. But he neglected to inform the counsellor, making her wonder about the reason for the resulting long pause and causing her to ask if he was experiencing any problems. The interpreter's lack of transparency led to irritation on the part of the counsellor, which might not have been the case if he had been with the interlocutors on-site communicating face-to-face and if she had seen his actions.

Excerpt 5.
Lack of visual cues as a trouble source (TIGA5)

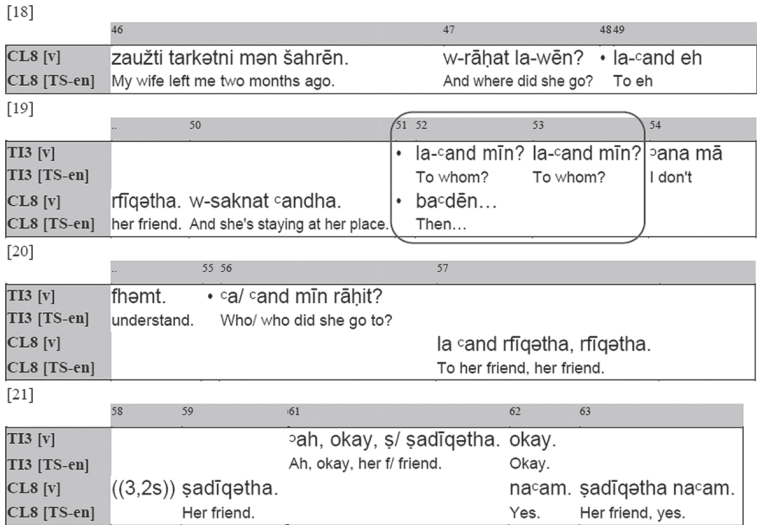


4.2.3 *Dialect*

The (almost always) different regional varieties spoken by the Arabic-speaking clients and interpreters caused trouble at times, especially when they lacked enough communicative reach, as in the case of Syrian Arabic and Moroccan Arabic. Given the missing supportive visuals (e.g. face and lip movements), this seemed to have been intensified on the phone, as is evident in Excerpt 6.

A Syrian client (CL8) has questions about the divorce procedures in Germany and the effects on his social benefits as a refugee. He is explaining to the counsellor that his wife, who wants to file for divorce, has left him and is staying at her friend's place. The Moroccan interpreter interrupts the client and asks about the person she is staying with (score sections 19–20). His difficulty in understanding is triggered by the word "rfīqətha", especially by the morpheme "rfīq" (Syrian Arabic for "friend"). Even if it does not deviate strongly from the standard "rafīq", it is presumably harder to understand because of the client's regional articulation and the assimilated personal deixis. The [h] in the pronominal suffix was silent in this case, but was included in the notation for the sake of comprehensibility. The client repeats the word twice in score Section 20. When he gets no reaction from the interpreter (after a lapse of more than 3 seconds), he uses a synonym "ṣadīqətha" (Eng. "her friend") in score Section 21. This lexical substitution resolves the problem. The interpreter confirms his understanding in the segments 61–62.

Excerpt 6.
Dialect as a trouble source (TIGA8)

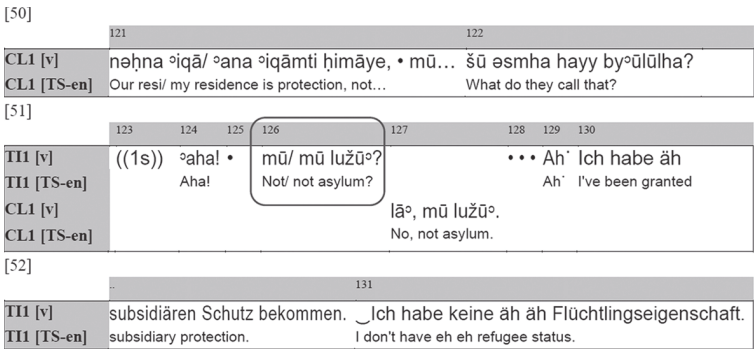


4.2.4 *Content*

The questions and concerns raised by clients during the counselling sessions are often complex. Understanding them and solving each issue one at a time is an interactive, collaborative task of all participants that, as already stated in Section 1, requires active engagement and coordination on the part of the interpreter.

Excerpt 7 serves as an example of the way the interpreter is helping the client to specify his residency status. In score Section 50, the client hints at the correct legal designation of his status, namely, "ḥimāye" (Eng. "protection"), but fails to recall it. The interpreter fills in the blank, then he asks him to confirm that he could not be granted asylum in Germany (score Section 51). Having resolved this issue, the interpreter starts rendering, using the correct legal designation ("subsidiary protection"), which he figured out on his own, and obtaining ratification from the client.

Excerpt 7.
Content as a trouble source (TIGA7)



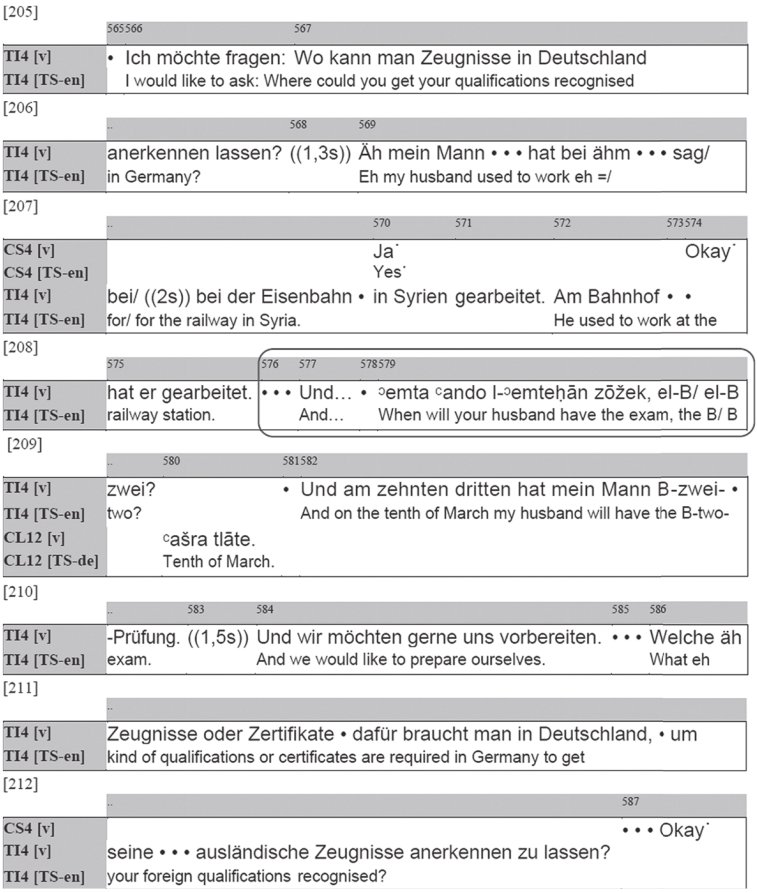
4.2.5 *"Cognitive load"*

Trouble that seems to be caused by an overloaded working memory is assigned to the category *cognitive load*. This category is somewhat imprecise as we are not attempting to measure any defined cognitive processes; rather, we assume that some trouble sources may be correlated with cognitive load and challenges such as remembering details of propositional content from previous stretches of talk. The queries posed in this context are usually short. They refer to a missing or a vague piece of information that was mentioned before by an interlocutor and which needs to be repeated or confirmed, as in Excerpt 8.

The client is asking about the steps her husband needs to take to have his qualifications recognised and be able to find a suitable job after passing the B2 German language examination. He used to work for the railway station in Syria. The interpreter starts relaying her request into German when he realises that he

did not write down the date of her husband's exam and therefore cannot recall it. So he asks her about it in score Section 208.

Excerpt 8.
Cognitive load as a trouble source (TIGA12)



4.2.6 *Mix of trouble sources*

The "mixed" category covers troublesome instances that are so complex that they can neither be allocated nor reduced to one single reason. This means that problems assigned to this category were traced back to at least two trouble sources: acoustic and dialectal problems; acoustic and content-related problems; acoustic, dialectal and content-related problems, etc.

5. Quantitative analysis

Having defined and exemplified the phenomena of interest, we now present the key findings of our quantitative analysis of the TIGA Corpus. We focus on the issues that the telephone interpreters might have faced while managing turn-taking (Section 5.1) and rendering the primary parties' talk (Section 5.2).

5.1 Turn-taking

5.1.1 *Interpreters' successes and failures at taking over: Turn acquisitions vs turn claims*

The results of our quantification of the interpreters' success and failures at taking turns are summarised in Figure 2. Contrary to our expectations, the number of all successfully acquired turns clearly outweighs the number of all failed takeovers (83% to 17%). Interestingly enough, most turn claims were performed at a transition relevance place – that is, at a seemingly convenient place to initiate speaker change, and yet the interpreters failed to win the floor (12% to 5%).

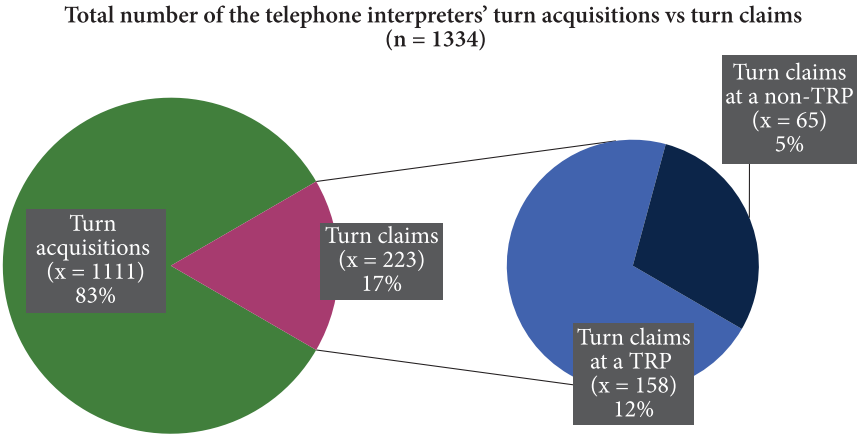


Figure 2. Telephone interpreters' turn acquisitions (successful takeovers) and turn claims (failed takeovers)

A closer look at the interpreters' turn acquisitions ($n = 1111$) and their nature indicates a smooth flow of talk in most cases: 91% of the turn transitions occur with or without a gap or with a slight, non-disruptive overlap. Only 9% of the successful takeovers exhibit an act of force, being produced prematurely, therefore cutting off the speaker.

5.1.2 *Limited audibility as a challenge to turn-taking*

While determining the timing of the interpreters' attempts to get the turn, the perceptibility, especially the audibility, of the interpreters' actions turned out to be a significant obstacle to inducing a turn transition, as presented in Figure 3.[9]

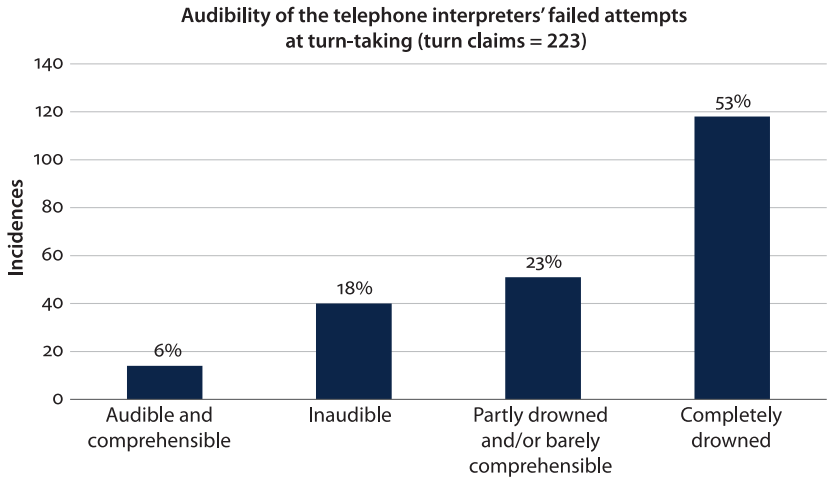


Figure 3. Audibility of the telephone interpreters' turn claims

To estimate the perceptibility of the turn claims, we switched back and forth between the audio and video recordings of the interpreters' and the counsellors' rooms. Of the claims, 76% were either produced simultaneously with the speaker or with another ongoing action (in-breaths, coughs, background noises, etc.), and so they were either completely or partly drowned (i.e. rendered inaudible or incomprehensible). 18% of the claims were not visible and/or audible for the other interlocutors, for example when produced with a soft voice during a breathing or thinking space. As a result, only 6% of the interpreters' attempts to take over were sufficiently audible to express or indicate a wish to speak.

9. We do not differentiate between transition relevance places and non-transition relevance places, as there was no significant difference between the counts based on the timing of turn claims and on their audibility. This runs counter to the assumption that verbal actions would be more inaudible and/or disruptive at non-transition relevance places than at transition relevance places.

5.2 Trouble sources

Questions posed by the participants to seek clarification, ratification and repair were ascribed to the following trouble sources: (a) poor acoustic perception, (b) a lack of visual cues, (c) incomprehensible regionalisms (lexical items), (d) content, semantic relations, facts of the case, and (e) cognitive load. The pie chart in Figure 4 shows the number of problem-solving question-and-answer sequences initiated by each participant.

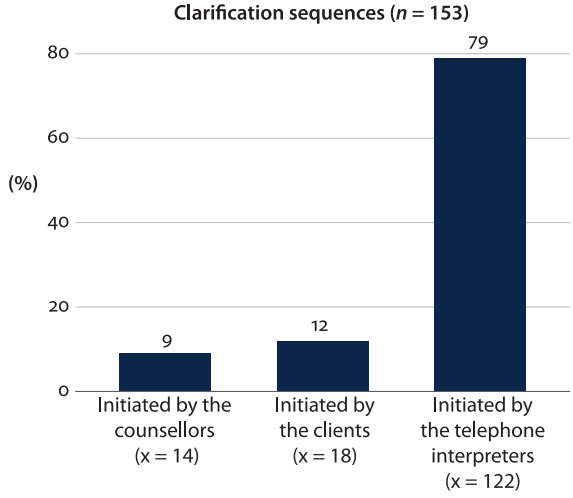


Figure 4. Total number of clarification sequences initiated by each participant

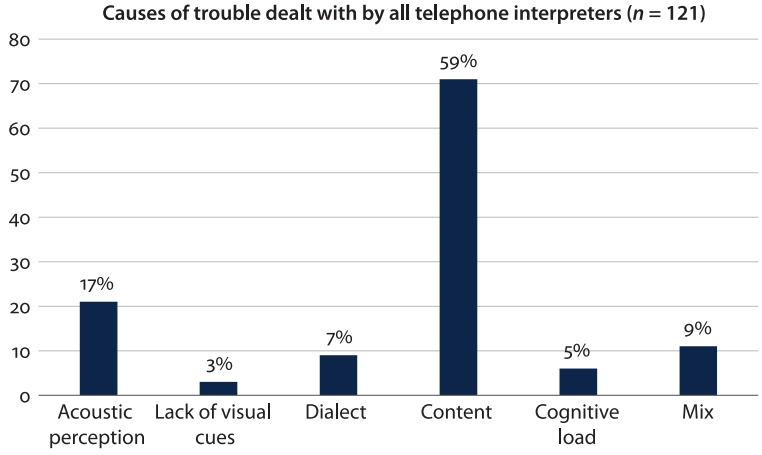


Figure 5. Types of trouble sources dealt with by the telephone interpreters

Figure 4 reveals that it was mostly the interpreters who sought clarification, ratification, repair, etc. – for the reasons listed and quantified in Figure 5.

A comparison of the different trouble sources indicates that the content of the topics discussed proved to be the main trigger of clarification sequences. In other words, Figure 5 suggests that the telephone as a medium is not always to blame for problems of understanding or turn-taking – or at least not entirely – since most trouble was due to content-related issues. With regard to the interpreters, clarifying content-related issues dominates their question-and-answer sequences ($x=71$; 59%), followed by problems triggered by limited audibility ($x=21$; 17%), the use of dialect ($x=9$; 7%), a mixture of at least two of the identified trouble sources ($x=11$; 9%), cognitive load ($x=6$; 5%), and, last but not least, the lack of visual cues ($x=3$; 3%). The same applies to the clients and counsellors who expressed a need for clarification, confirmation, etc. for similar reasons. The quantity determined did not show any notable deviation from the causes of trouble identified on the interpreters' side. Yet, given the variety in the corpus (different interpreters, various counselling topics, varying counselling duration), the types of clarification sequences differ from one session to another and from one interpreter to another, as can be seen in Figure 6.

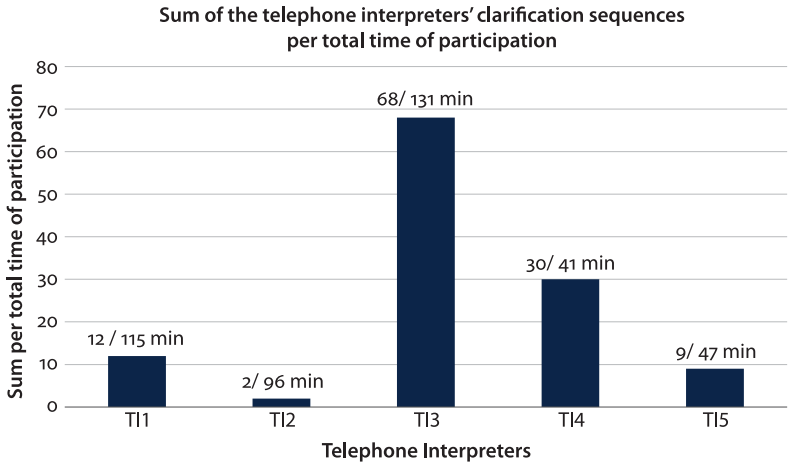


Figure 6. Sum of the clarification sequences initiated by each telephone interpreter per total time of participation

Figure 6 reveals differences in the frequency of clarification-seeking actions that have been identified throughout the TIGA Corpus. Apart from the situational factors, the ratios indicate differences of style between the interpreters. The frequency of the trouble sources differs from one interpreter to another depending on various factors, including the interpreters' techniques, interpreting style (e.g.

active, offensive, information-seeking, coordinating vs guarded, relaying in the strict sense), their expertise, their familiarity with the topics discussed, their spoken dialects, and so forth. The interpreters TI3 (Moroccan) and TI4 (Egyptian), for instance, stand out from the rest with regard to seeking clarification of the original utterances and achieving maximum understanding of the content to be rendered. It is important to note that TI3 was called in most to interpret and facilitated four counselling sessions. The other interpreters did not face as many content-related difficulties or did not seem to have the urge to coordinate the talk, to request explanations, or the like. The same applies to TI4 when compared to TI2 (Syrian), both of whom participated in two sessions, although it must be noted that the sessions TI2 took part in lasted longer.

6. Conclusions

Research on telephone-based remote interpreting often focuses on communicative problems that occur due to the lack of visual cues and the absence of a shared physical space. Our study, however, suggests that such problems are not as frequent as one might expect. In only a few cases are the implicit and explicit coordinative moves made by interpreters or other interlocutors either hampered or not successful. In most cases the active coordination of talk is successfully and cooperatively organised by interpreters and interlocutors, leading to a smooth allocation of turns and a manageable organisation of clarification sequences. Although we were not able to compare on-site and remote dialogue interpreting directly, our data suggest that the lack of visual cues does not seem to hamper coordination activities seriously. This is even more surprising as the interpreters were not (very) experienced in working via the telephone. However, perhaps their professional experience in on-site dialogue interpreting enabled them to handle remote situations without difficulty.

Another interesting result of the study is the variation among the interpreters with regard to clarification sequences and other coordination moves. Some of the interpreters seemed to be less in need of clarification than others and some claimed turns less actively. Therefore, these interpreters did not claim turns as much as their colleagues did, desperately trying to take over but sometimes failing owing to audibility problems or other factors. As a consequence, they faced fewer problems at an interactional level, such as unsuccessful turn claims. As the material in our corpus was largely comparable, our explanation for this uneven distribution of coordinative moves among our participants is that some of them applied strategies developed in on-site interpreting to the remotely mediated setting. Claiming the turn after short stretches of talk is problematic in remote settings and tends to

increase the number of unsuccessful turn claims. And yet, even in those conversations where the interpreters intervened more, and consequently failed more often, the overall picture is not as bad as one might expect.

The limitations of our study are the small size of the corpus and the lack of comparable data from face-to-face settings. Moreover, we did not investigate the quality of the renditions or the rendition types; nor did we determine the learning effects, that is, any changes over time when the participants became more experienced and better acquainted with the remote setting. Based on our observations, we can conclude that it is better to wait for the turn instead of constantly claiming it; and, in addition, that it is advantageous to initiate turn-taking only at transition relevance places. However, we suggest a cautious approach to normative generalisations such as these or any proposals to abide strictly by an ordered set of rules that disregard the dynamics of interaction and, thus, could affect the quality of interpreting.

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Address for correspondence

Bernd Meyer
Department of Intercultural Communication
Faculty of Translation Studies, Linguistics, and Cultural Studies
Johannes Gutenberg University of Mainz
An der Hochschule 2
D-76726 Germersheim
Germany
meyerb@uni-mainz.de

Biographical notes

Dr **Rahaf Farag** is an interpreting practitioner and educator and a postdoctoral researcher at the Leibniz Institute for the German Language, Mannheim, Germany. Until recently, she was a research associate in the Department of Intercultural Communication at the Johannes Gutenberg University of Mainz, Germany, in the Faculty for Translation Studies, Linguistics, and Cultural Studies. She graduated with a dissertation on computer-aided conversation-analytic transcription of Arabic–German talk-in-interaction using data from interpreter-mediated encounters. Her research interests include multilingual communication, intercultural communication, remote interpreting, interaction-oriented interpreting studies, sociolinguistics, conversation-analytic transcription, and translation.

Bernd Meyer is Professor of Intercultural Communication in the Faculty of Translation Studies, Linguistics, and Cultural Studies of the Johannes Gutenberg University of Mainz, Germany. From 1999 to 2011 he was a full-time researcher and principal investigator in projects on interpreting and multilingualism conducted at the Research Centre for Multilingualism in Hamburg. He is an expert in the analysis of interpreter-mediated interaction in institutional settings and in the application of such findings to interpreter training. His research focuses on language barriers in public service institutions and linguistic approaches to community interpreting.

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