



Captioning for Children

Historical and Empirical Perspectives

Nathalie Mälzer / Maria Wünsche / Saskia J. Schulz

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Umschlagabbildung: Still frame from a Closed Captioning demonstration by Torindkft
utilyzing the *Felix the Cat* cartoon “The Goose that Laid the Golden Egg” (1936) –
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List of abbreviations

Ø ST/min	Average number of subtitles per minute
ANN	Video clip from <i>Annedroids</i> , TV series
ARD	Arbeitsgemeinschaft der öffentlich-rechtlichen Rundfunkanstalten der Bundesrepublik Deutschland (Consortium' of the public-law broadcasting institutions of the Federal Republic of Germany), Joint organisation of Germany's regional public broadcasters
AV	Audiovisual
CG	Control group (hearing children aged 8 to 12)
CGpilot	Control group in the pilot study
CGeye	Control group in the eye-tracking study
CHI	Video clip from <i>Chi Rho</i> , TV series
cps	Characters per second
CR	Comprehension rate
CRPD	UN-Convention on the Rights of Persons with Disabilities
DFF	Deutscher Fernsehfunk (German Television Broadcasting), Former state television broadcaster of the GDR
DGB	Deutscher-Gehörlosen-Bund (German Federation of the Deaf), current German association existing since 1927
EG	Experimental group (d/Deaf and hard of hearing children aged 8 to 12)
EGpilot	Experimental group in the pilot study
EGeye	Experimental group in the eye-tracking study
EIN	Video clip from <i>Schloss Einstein</i> , TV series
EIT	Subtitles with early in-time
EMOJI	Subtitles including icons, symbols, or emojis
ERDF	European Regional Development Fund
GSV	Gehörlosen-und-Schwerhörigen-Verband (Association of the Deaf and the Hard of Hearing), former association in the GDR
HIGH	Subtitles with typographic highlighting of words

IBA	Independent Broadcasting Authority
IFA	Internationale Funkausstellung, trade show for consumer electronics and home appliances
IRT	Institut für Rundfunktechnik (Institute for Broadcast Technology), former research center of German broadcasters, closed in 2020
IYD	Video clip from <i>In Your Dreams</i> , TV series
M	Mean value
MDR	Mitteldeutscher Rundfunk Brandenburg (Central German Broadcasting Brandenburg), German public broadcaster
MOD	Modification type of the experimental subtitles
N	Number
NDR	Norddeutscher Rundfunk (Northern German Broadcasting), German public broadcaster
O	Omission, reduction strategy for subtitles
ORB	Ostdeutscher Rundfunk Brandenburg (East German Broadcasting Brandenburg), former german public broadcaster
ORF	Österreichischer Rundfunk (Austrian Broadcasting Corporation), Austrian public broadcaster
P	Paraphrase, reduction strategy for subtitles
PFE	Video clip from <i>Die Pfefferkörner</i> , TV series
PILOT1	First part of the pilot study
PILOT2	Second part of the pilot study
RBB	Rundfunk Berlin Brandenburg (Berlin-Brandenburg Broadcasting), German public broadcaster
REG	Regular subtitles following existing guidelines
SC	Shot change
SD	Standard deviation
SFB	Sender Freies Berlin (Radio Free Berlin), Former german public broadcaster
SR	Saarländischer Rundfunk (Saarland Broadcasting), German public broadcaster
SRF	Schweizer Radio und Fernsehen (Swiss Radio and Television), Swiss broadcasting company

ST	Subtitle
SDH	Subtitles for the d/Deaf and Hard of Hearing
TAS	Video Clip from <i>Tashi</i> , TV series
TRI	Video Clip from <i>Trio</i> , TV series
W	Word
wpm	Words per minute
YAK	Video Clip from <i>Yakari</i> , TV series
ZDF	Zweites Deutsches Fernsehen (Second German Television), German public television broadcaster

1 Introduction

1.1 Point of departure

For many years now, Germany's public broadcasters have been trying harder to enhance the accessibility of their television programming: subtitles for people who are d/Deaf or hard of hearing (SDH), for instance, can be added for example via videotext for large parts of their linear programming.¹ Audio descriptions for people who are blind or visually impaired are also being offered more frequently. Those services are also provided via their media libraries on the broadcasters' websites (Lindner 2016: 315). These positive developments can be attributed to changes that have taken place in the legal framework in Germany over the past two decades. For example, in 2008 the UN-Convention on the Rights of Persons with Disabilities (CRPD) came into force, which in Article 30 recognises the right to equal cultural participation for persons with disabilities and places an obligation on the signatory states to ensure access to cultural life, including explicitly to television programmes and films (CRPD 2008: 30 §1). The decision to restructure how public broadcasting in the Federal Republic of Germany (FRG) is financed has also helped promote measures that enhance accessibility. This new arrangement is based on changes in the license fee regulations (Rundfunkbeitragsstaatsvertrag, RBStV). With this new regulation, almost everyone in Germany, including people with sensory disabilities, have to pay a license fee. This of course urges public broadcasting services (e.g., ARD and ZDF) to expand accessibility for their programmes by providing interpreting into German Sign Language, subtitling, and audio description. In 2020, another amendment came into force, the Interstate Media Treaty (MstV 2020), which extended the previous requirement for barrier-free access for people with disabilities from the public service sector to all private broadcast-

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1 Since 2012, the number of subtitled programmes on ARD has steadily increased. On Das Erste, for example, it has doubled from 49% in 2012 to 98% in 2019 (Source: BR/DasErste.de 2019).

ers (MstV 2020: §7 [2]), and from the broadcasters' linear programme to their online platforms, i.e. media libraries (MstV 2020: §21). However, this updated version of the Interstate Media Treaty does not require broadcasters to fully implement such accessibility measures immediately, which is met with negative feedback by target group associations (Krümpelmann 2020). The treaty only points the way to a steady and gradual expansion: Every three years, private providers must, for instance, report to state media authorities on the measures they have taken (MStV 2020: §7 [2]) and telemedia providers are now required "to support barrier-free access to television programmes and television-like telemedia within the scope of their technical and financial possibilities" (MStV 2020: §21)².

1.1.1 Broadcasters' subtitling practices

Currently, public broadcasters subtitle between 43% (Phoenix) and 98% (Das Erste) of their linear programme; the subtitling rate of the regional broadcasters, the so-called *Dritte Programme* ("third programmes"), is between 75% and 88% (Lindner 2021). Broadcasters also make most of their programme available online in their media libraries, which users can access at their convenience. More and more of these online programmes are subtitled as well.

For creating subtitles, most broadcasters use a mostly standardised set of guidelines (ARD/ORF/SRF/ZDF 2020). For many years, these guidelines did not distinguish between different formats or target groups, apart from a note about subtitle presentation rates for youth programmes, i.e., the subtitling speed (ARD/ORF/SRF/ZDF 2015). There was thus a need for subtitling standards for the target group of children. A simple transfer of the guidelines developed and tested mostly for d/Deaf and hard of hearing adults appeared problematic, especially with regard to subtitle presentation rates. This is partly because 8-year-old children are still at a stage in which they are building their reading skills. Thus, in all likelihood, they cannot read as quickly as the average adult. Furthermore, several studies indicate that d/Deaf and hard of hearing

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 2 The original German quote is: "im Rahmen ihrer technischen und finanziellen Möglichkeiten den barrierefreien Zugang zu Fernsehprogrammen und fernsehähnlichen Telemedien unterstützen".

children often have more difficulties reading than hearing children of the same age³ (Wauters et al. 2008; Hennies 2010; Herman et al. 2017). This seems to be especially true when it comes to reading subtitles (Cambra et al. 2010): Since they can only be viewed for a limited time, subtitle users have to quickly grasp the meaning of the text.

The fact that the guidelines did not distinguish between different target groups (even if, in practice, subtitles for children's programmes may on occasion have lower subtitling speeds) may also be because subtitle users have frequently called for verbatim subtitles, that is, subtitles that are nearly literal (Romero-Fresco 2009: 111f; Hezel 2009: 187; Luyckx et al. 2010: 23). Since hearing people are usually responsible for subtitling, which may often entail selecting information assumed to be important and omitting elements deemed irrelevant as well as simplifying the original text, non-verbatim subtitles bear the risk of being perceived as patronizing (Hezel 2009: 187). The reduction of the subtitle speed may appear to be well-intentioned and practical even, since it is open to doubt whether subtitles with a high presentation rate are still read all the way through. However, "edited subtitles" (Luyckx et al. 2010: 3), in contrast to verbatim subtitles, edit out information that the target group cannot verify elsewhere, unless they can infer what is being said based on lip-reading. This gap between what is actually said and the text presented may inspire mistrust amongst the target group. Siegmund Prillwitz summarises the subtitling dilemma as follows:

Able to compare the lips movements with the text, d/Deaf people who are skilled in lip-reading can recognise quite well to what extent the written translation corresponds to verbal expression. If there is a strong deviation, the affected persons have the feeling that they are not being adequately informed. At the same time, especially with an exact 1:1

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3 However, it should be noted that although correlations between reading competence and hearing status were found, no causal relationships between the two were proven. It can be assumed that factors such as the primary language used and the educational context (e.g., the question of early intervention) have a strong influence (see, for example, Hennies 2010; Hennies/Hofmann 2017; Wünsche 2022).

translation, the subtitles often have to run so fast that many deaf people have trouble following them (Prillwitz 2001: 84).⁴

In the case of live subtitling, it can also be objected that a complete and exact transcription of the spoken language by the subtitler is nearly impossible because of time constraints. Since live subtitles are supposed to be broadcast with as little latency as possible, the subtitlers (or, in this case, respeakers) have only a few seconds to create a live subtitle. Moreover, because of the differences between spoken conception and written conception in language (Koch/Oesterreicher 2012 [1985]: 443), an exact transcription is not desirable anyway, e.g., because of sentence constructions with errors and pauses that may occur in spontaneous speech. When it comes to subtitling fictional formats, the situation is rather different: Programmes that are produced in advance are not subject to the same time constraints that live programming imposes on respeakers. Subtitlers have up to six weeks to create them for non-live formats (Lindner 2016: 323). They also do not have the difficulties related to the synchronous transcription of dialogues, or spoken language. This is because pre-programmed, fictional formats involve a feigned or fictive orality (Goetsch 1985)⁵ or a scripted language (Remael 2008), i.e., dialogues that are spoken but are based on a written script and show only a few characteristics of spoken language (Remael 2008: 66). Thus, it can be assumed that even if the oral dialogues are fully transcribed as verbatim subtitles, the subtitles remain, in principle at least, more easily readable. The same does not necessarily hold true, however, if the target group for subtitling is children, for whom the “question of a reading speed that ensures comprehension” (Mälzer/Wünsche 2019: 337)⁶ is of more critical concern. It has therefore been necessary to take

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- 4 The original German quote is: “Aufgrund des Mundbildvergleichs können im Lippenlesen versierte Gehörlose recht gut erkennen, inwieweit die schriftsprachliche Übersetzung den mündlichen Äußerungen entspricht oder nicht. Bei starker Abweichung haben die Betroffenen das Gefühl, nicht adäquat informiert zu werden. Auf der anderen Seite müssen gerade bei exakter inhaltsgetreuer 1:1-Übersetzung die Untertitel oft so schnell laufen, dass viele Gehörlose ihnen nur mit Mühe folgen.”
- 5 In German: “fingierte Mündlichkeit”.
- 6 The original German quote is: “Frage nach einer verständnissichernden Lesegeschwindigkeit”.