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# STEPPING INTO OTHERS' SHOES: A COGNITIVE PERSPECTIVE ON TARGET AUDIENCE ORIENTATION IN WRITTEN TRANSLATION

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## Abstract

This paper suggests what might allow translators to orient themselves towards their target audience in the translation process. To shed light on translators' ability to put themselves into their target audience's shoes, I adopt a cognitive perspective by drawing on current findings from psychology, cognitive science and neuroscience. I depart from the notion of target audience as applied to written translation. Aspects to this concept and the terminology of audience in translation studies are briefly discussed. Then I turn to translation process research to examine two empirical studies and one theoretical paper for insights into researching translators' target audience orientation. Next, I introduce concepts from social cognition research that might contribute to give a cognitive account of translators' behavior towards the target audience. I then touch upon the relation of the functional neurocognitive network presumably supporting target audience orientation with other neurocognitive networks that seem particularly relevant to translation. As a complement, I present a research design for empirically verifying my claim about what enables translators' target audience orientation, and gaining further insight into the relations between target audience orientation, translation process and translation product. Finally, some conclusions about the benefits of this type of research are offered.

## Kurzreferat

In diesem Aufsatz theoretischen Zuschnitts wird die Grundlage der Zielgruppenorientierung von ÜbersetzerInnen im Übersetzungsprozess untersucht. Zu diesem Zweck wird eine kognitive Perspektive eingenommen und auf Erkenntnisse der Psychologie,

der Kognitionswissenschaft und der Neurowissenschaften zurückgegriffen. Zunächst werden unterschiedliche Facetten des Begriffs der Zielgruppe in seiner Verwendung in der Übersetzungswissenschaft beleuchtet. Anschließend werden zwei empirische Studien und ein theoretischer Artikel aus der Übersetzungsprozessforschung eingehend besprochen und ihre Relevanz für die Untersuchung der Zielgruppenorientierung herausgearbeitet. Im darauffolgenden Abschnitt werden Konzepte aus der Forschung zur sozialen Kognition vorgestellt und auf ihre Eignung hin untersucht, eine mögliche Erklärung für die Zielgruppenorientierung von ÜbersetzerInnen auf kognitiver Ebene zu liefern. Dabei werden funktional definierte, der Zielgruppenorientierung möglicherweise zugrunde liegende neurokognitive Netzwerke und ihre Verbindungen mit anderen Übersetzungsrelevanten neurokognitiven Netzwerken diskutiert. Zusätzlich zu diesen Überlegungen theoretischer Natur stelle ich ein Forschungsdesign vor, das erste Aufschlüsse erlauben wird über die kognitiven Grundlagen der Zielgruppenorientierung beim Übersetzen und über konkrete Manifestationen der Zielgruppenorientierung auf Produkt- und Prozessebene. Abschließend folgen einige Schlussfolgerungen darüber, welchen Erkenntnisgewinn das vorgestellte Forschungsprojekt und die in diesem Aufsatz beschriebene Perspektive erlaubt.

**Keywords:** Target audience. Empathy. Translators' personality. Translator behavior. Cognitive and neural processes. Translation process.

**Schlagwörter:** Zielgruppe. Empathie. Persönlichkeit von ÜbersetzerInnen. Verhalten von ÜbersetzerInnen. Kognitive und neurale Prozesse. Übersetzungsprozess.

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## 1. Introduction

It comes as a surprise that the cognitive and neural bases of translators' orientation towards the target audience in the translation process have received so little attention. As is apparent from the discussion below, theorizing about the target audience in translation studies has a longstanding tradition. And those traditions in translation studies that take an interest in the translation process and cognitive aspects of translation—translation process research and cognitive translation studies—have enjoyed unprecedented growth in the past years, as is manifest in recent surveys such as Göpferich (2008), Hurtado & Alves (2009), Alves & Hurtado (2010), Halverson (2010), Jääskeläinen (2011), Muñoz (2012) and Risku (2013). Researchers from these traditions have tackled new research questions, refined their conceptual frameworks, and implemented methodological innovation. Yet, despite this progress, only one proposal (discussed below) has been put forward to account for translators' target orientation in cognitive terms in some depth and detail.

In my ongoing research, I seek to close this gap by relating translators' observable behavior, that behavior's outcome (i.e., the target text), and translators' verbalizations about the translation process to certain mental processes I claim occur in translators' minds. The specific questions I am addressing are: On a (neuro)cognitive level, what is the ability that enables translators to orient themselves towards their target audience? How does translators' target audience orientation manifest itself in the translation process and product? What is the correlation between those mental processes that enable target audience orientation and certain features of the translation product and process? And: What do translators have to say about their target audience orientation?

To explore these issues conceptually and empirically, I draw on insights from general translation studies, translation process research, cognitive translation studies (including the emerging neuroscience strand), psychology, cognitive science and neuroscience. From general translation studies, which for the purpose of this article includes everything that is not translation process research or cognitive translation studies, I derive important conceptual

knowledge about the notion of target audience in translation. Since the level of analysis that I am interested in is the (neuro)cognitive level, findings from psychology, cognitive science, neuroscience and the neuroscience strand of translation studies are highly relevant as well. Because of the object of study and the methods chosen, my research project clearly falls into the category of translation process research. It provides me with tried and tested empirical methods to conduct my own quasi-experiment, and allows me to build on previous studies pertinent to my research. Recently established links between research into the personality of translators and process research also figure into my project.

In the second and next section, I make some remarks about the notion of target audience in general translation studies and include a note on the terminology of audience. After that, in the third section, I present research from translation process research dealing with the target audience's role in the translation process. The fourth and fifth sections consider research from psychology, cognitive science and neuroscience, and neurocognitive research about translation. Potentially interesting links between the postulated neurocognitive target audience-orientation network and other concepts relevant to translation are also explored. In the sixth section, I introduce a research design to empirically investigate target audience orientation during the translation process, and relate it to prior theoretical considerations. In the seventh and final section, conclusions about the benefits of the sort of research outlined in this paper are drawn.

Before moving on to section two, I would like to meditate briefly on what it means to adopt a (neuro)cognitive perspective on target audience orientation. First, it simply refers to the fact that in this article I combine insights derived mostly from *cognitive* and psycholinguistic research in translation studies with insights on complex cognitive processes heavily informed by findings at the *neural* level. Second, the concept that may cognitively (and neurally) underpin target audience orientation in translators is most productively and most widely being explored in disciplines that employ the tools of neuroscience and in their explanations refer to neuroanatomy and neurophysiology. And, third, even though I do not use neuroscientific research techniques myself, drawing on findings from studies and fields characterized by this kind of methodology is enormously helpful. As will become evident in the later sections of this paper, taking seriously biologically-grounded models of cognitive function encourages a more nuanced consideration of the research object and drives careful decision-making about one's research design. Adopting a (neuro)cognitive perspective is also beneficial when data need interpretation

and explanation, and tentative models might be posited. Reference to what is known about the underlying neural substrates of cognitive functions helps avoid pitfalls at this stage because biological constraints on cognitive function can be taken into account, and the data can be checked for neural plausibility.

## 2. Target audience in translation studies and in my research

In this section I would like to comment on the idea of target audience in translation studies and offer clarifications on how I use the term *target audience* in my research.<sup>1</sup> It can be argued that it is almost commonplace to integrate the notion of audience in one's translation theory, even more so in didactically oriented translation studies. For instance, Nord's (2005) model for translation-oriented text analysis provides a toolkit for analyzing the source and target context of translation, including the texts' audiences. Functional approaches like Nord's might actually be the first to come to mind when thinking about the role assigned to a translation's *target audience*.<sup>2</sup> Other notable names here would be Vermeer (1978), Hönig & Kußmaul (1982), Reiß & Vermeer (1984) and Holz-Mänttari (1984). But there are many researchers coming from various other traditions who attach importance to the role of the translation's target audience as well. They include scholars such as Nida & Taber (1969), Dressler (1974), Jäger (1975), Coseriu (1981) and Koller (1998).<sup>3</sup> Why is there such an omnipresence of target audience in translation studies? It seems to me that translation theories failing to take account of a translation's target audience would most likely exclude a highly important part of the translation process and therefore be inadequate as (descriptive)

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1. The premodifier *target* is used to stress my research focus on one aspect of the translation process and audience orientation. It investigates the basis of how translators take into account the text's *new* audience. The implicit opposition to the source text's audience should not be construed as an exclusion of the source side *per se*. Beside *target audience*, there are other terms frequently found in translation studies research, including *addressees*, *receivers*, *readers*, *recipients*, *receptors* and *(end-)users*.
  2. It should be noted, though, that in these approaches *target* orientation is but *one* option that can be implemented by the translator and other actors involved in the translation process.
  3. The relation of target audience to other concepts is of course very different in the traditions mentioned above. The underlying translation concept, that is, what beliefs translators hold about what translation is and is not, does seem relevant. For example, translators holding a broad view of translation—including what others might already call *adaptation*—similar to the translation concept of, say, Skopos theory (source text's dethronement, source text as information offer, allowing for different functions of source versus target text) might be more likely to orient themselves towards the target audience during the translation processes. I will come back to this later.

theories. What appears to be missing from these works, though, is a (neuro) cognitive explanation of *how* translators orient themselves towards the target audience. Also, by today's standards, many of them could be said to lack an empirically sound basis.

In any case, the notion of audience is certainly a complex one. Drawing on concepts from communication studies and literary theory—mainly reader response criticism and reception theory—translation scholars such as Pym (1992), Mason (2000), Rosa (2006) and Mossop (2009) make insightful observations about different types of audiences, what position and agency they have, in what way the audience is implied in the text, whether the audience is given or invented, etc. However, in my research, not all of the distinctions brought up by these scholars seem relevant. I would therefore like to provide a few clarifications. When I use the term *target audience*, I mean the abstraction translators have in their minds during the translation process. In a given situation, translators will have no, few or many clues as to the target audience's actual make-up. They may be able to work with an explicit description of the target audience provided to them or have to infer its characteristics from information available through the source text, translation situation and/or communication with other parties involved in the translation process (Nord 2000: 196). For the neurocognitive network supporting target audience orientation, it should make no difference. It is probably active in any case, as long as translators are thinking about an individual person or a group of people during the translation process.

Since I focus on the target audience as an abstraction in translators' minds, an affordance for guiding the translation process, I deliberately exclude from the purview of my current research the translation products' assessment by actual target audience members. Still, it would be exciting to look into correlations between instances of target audience orientation and the reactions of actual target audience members (assuming that subjects could infer an actual, realistic target audience from my quasi-experiment's implicit instructions) as part of a follow-up project. To investigate this type of correlation, data on target audience reaction could be gathered through surveys (e.g., Nobs 2006), eye-tracking studies (e.g., O'Brien 2007) or other usability methods (e.g., Nielsen 1994; Straub 2007; also cf. Göpferich 2008: 244–251).

Another important clarification is that, in my research, *target audience* refers to the mental model of the translation's *end-users*. I deliberately set aside other actors who might contribute towards the final version, like proofreaders or source text writers, and who could be considered part of a translation's larger audience. Before moving on to the next section, where I consider how

target audience has been treated in a different translation studies tradition, I would like to offer one more clarification: I do not claim that translators always produce target-oriented translations. What I do claim is that whenever translators try to tailor their translations to the perceived needs of the target audience, certain (neuro)cognitive processes are involved. And it is these processes that are of interest to me in my research.

### 3. Target audience in translation process research

In this section of the paper, I would like to address the issue of target audience in what has come to be termed translation process research. *Translation process* in this tradition is understood as “the cognitive activity of producing a target text in one language, based upon a source text in another language” (Englund 2010: 406; for a recent conceptual and terminological discussion, cf. Chesterman 2013). Since I am interested in how target audience orientation is achieved in the translator’s mind during the translation’s coming into being, insights into target audience orientation obtained from translation process research offer two advantages: In contrast to those derived from the largely product-based research traditions referenced above, they also refer to the behavior of translators in the translation process and are grounded in empirical data.

It can be said that translation process research has always had a place for the translation’s target audience in its various translation competence models and inventories of strategies.<sup>4</sup> For example, the addressee perspective is mentioned by name in Krings’ model of inverse translation (1986: 481–482), where it functions as an important touchstone for evaluating the appropriateness of tentative translation equivalents. Another early and fairly well known model of the translation process is the one elaborated by Hönig (1995: 51, 54–57). One of the elements in his ideal translation process model is the macrostrategy, which encompasses, among other things, the translation’s function, medium and target audience. The important role of the target audience can also be discerned in translation competence models, like the revised PACTE model (e.g., 2003) or Göpferich’s TransComp model (2009). In PACTE’s model, for instance, the concept of target audience can be found most clearly in the knowledge about translation sub-competence, which

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4. I am aware that the notion of *strategy* as normally defined has recently been criticized for being too unspecific and difficult to distinguish from *tactics* and other concepts (e.g., Gambier 2010). However, I will be using the term because it is employed in most of the relevant literature.



comprises, among other knowledges, translators' knowledge about different translation users (but is perhaps also reflected in its other sub-competences and components).

Now I would like to delve into two fairly recent and comprehensive accounts of the translation process. Even though the research under discussion does not center on target audience orientation, it neatly illustrates how the studies' subjects deal with the target audience in the translation process and how they use the notion of target audience in post-hoc explanations.

The first of these two monographs to touch upon the issue of target audience orientation is Englund's (2005). As hinted at in the book's title, her two main categories of analysis are expertise and explicitation. In the following paragraphs, I will relate them to my central concept, target audience orientation. Let me start with explicitation. In the book's theoretical part, Englund mentions the category of pragmatic explicitations, which "[...] are caused by aspects of the communicative situation and anticipated difficulties for the TL [target language] reader [...]" (2005: 37). These instances of information made more explicit seem to be due to differences in culture and world knowledge between source and target audience, and target text function(s). Translators might thus use—or fail to use—strategies to clarify certain concepts, names or expressions to facilitate comprehension for the new, future readers (Englund 2005: 37). According to Englund's empirical material, adaptation to the target audience may happen during any of the (analytically distinguished) stages of the translation process: In the pre-writing stage, reading the source text might involve seeing the text from the target audience's perspective and already lead to plans for changing some stretch of text's degree of explicitness (Englund 2005: 138). Target audience orientation may, of course, also occur during drafting (Englund 2005: 127). And in the post-writing phase, the translator may evaluate the draft against the (perceived) needs of the future target audience, which involves a comparison between what has been accomplished and what should be accomplished (Englund 2005: 131).

As for Englund's second main analytical category, expertise: Overall, there appears to be a target audience-related difference in task performance between students and more experienced professionals, especially while planning the target text. Translation professionals' awareness of, and knowledge about, the target audience helps in their decision-making (Englund 2005: 150). In writing research, from which Englund and translation process research in general draw a lot of inspiration, target audience knowledge stored in long-term memory also plays an important role (cf. Hayes' 1996 model reproduced in Englund 2005: 20). In summary, Englund's study lends empirical support

to the intuition that translators often orient themselves towards the target audience and suggests the existence of different degrees of target audience orientation, related to membership in the *students* or *professionals* category. Aside from these important clarifications and findings, her cognitive exploration of target audience orientation is interesting from a methodological point of view as well. Explicitation patterns may indeed be manifestations of (neuro)cognitive target audience orientation processes to look for in product data (see below).

Another researcher who has produced a book-length treatment of the translation process is Hansen (2006). She analyzes students' translation processes and products to identify, and help them deal with, their errors and problem sources. One of her diagnostic categories is that of pragmatic errors, which comprises errors with regard to, for example, presuppositions, text type conventions and deictic markers (Hansen 2006: 114, 116). According to Hansen (2006: 119), presupposition errors occur because there is too little or too much information in the translation with respect to the target audience and the situation in which the translation is going to be used. It is no surprise, then, that Hansen's notion of translation competence includes the ability to take the information from the source text relevant to the assignment and reformulate it to suit the perceived needs of the target audience (2006: 26).

With regard to target audience orientation, what does Hansen find in her empirical material and how does she interpret these findings? During retrospection, a clear majority of her subjects say at least once that they are orienting themselves towards the target audience and situation, but Hansen finds that many students often do not actually put this into practice. She diagnoses a discrepancy between what students seem to know is expected of them—target orientation—because they are told so time and again in their translation classes, and the ability to actually implement target audience orientation by using strategies like reduction. Some of the participants in her experiment are aware of the target audience's situation and needs, and thus seem to possess *Einfühlungsvermögen* or empathy (Hansen 2006: 193, 195; my translation). However, they appear to lack the ability to act accordingly. According to Hansen, the students might not have the courage to reduce information present in the source text due to their limited concept of what translation or *a* translation is supposed to be. Another possibility is that the target audience does not seem specific enough for the translators to distance themselves from the source situation. Since *target audience* might be too vague a notion for them, they do not really know what to do. Also, the importance and relevance of certain source text elements with regard to the

target situation is apparently lost on the student translators. Hansen interprets the discrepancy between some sort of target audience awareness and inadequate implementation of target audience orientation as a lack of focus. The (new) audience apparently fades as soon as the students are confronted with other problems in the translation process (Hansen 2006: 192–196). What I take away from Hansen's study is the potential usefulness of the category *reduction* as a linguistic surface manifestation of (neuro)cognitive target audience orientation processes, the emphasis she places on the interaction of strategy use and subjects' translation concept (see below), and the difference she highlights between target audience orientation in the mind and actually implementing target audience orientation in terms of translation solutions.

Whereas Hansen and Englund do not *focus* on target audience orientation, the article discussed next does. In an insightful article fully dedicated to target orientation, and which abounds in cognitive concepts, Shreve introduces the notion of *metacognition*, that is, “[t]he ability to reflect upon, understand, and thereby modulate one's own cognition” (2009: 257), which is particularly relevant to complex cognitive tasks such as translation. He then links this concept to target orientation, contending that the translator's activity of adapting a text to the perceived needs of the target audience requires particularly high levels of conscious cognitive control (Shreve 2009: 257). Shreve asks a series of questions about the issue of translation pragmatics that he proposes could be partially answered by using models of metacognition (and executive control, which is a similar concept that also allows top-down modulation of cognitive processes). With regard to the translation's target audience, he is interested in how translators cognitively represent that audience's characteristics and take account of differences between source and target audience (Shreve 2009: 259). Referring to mutual knowledge, which again is related to the target audience, he asks: “How is a translator's predication of target audience related to assumptions of mutual knowledge and how does that assumption affect the relative explicitness or implicitness of the encoding of information?” (Shreve 2009: 259). As we have seen, the works of Hansen and Englund also suggested the strategy of making information more explicit (explicitation) or implicit (implication, reduction) as part of target audience orientation. The questions from Shreve's theoretical paper are very similar to the ones I pose in my research, and to which I seek to provide answers empirically. However, whereas Shreve adopts the notion of metacognition, I propose a different, yet complementary notion as a candidate for explaining the ability of target audience orientation (cf. Frith 2012 on the relation between metacognition and that candidate concept).

#### 4. (Neuro)cognitive target audience orientation processes in translation

My (neuro)cognitive perspective on target audience orientation is informed by research being conducted under the heading of social cognition (Kunda 1999), now mostly in cognitive and social psychology, cognitive neuroscience and social (cognitive) neuroscience. Investigating social cognition means “the study of how people make sense of other people and of themselves” (Friedenberg & Silverman [2005] 2012: 323). Social cognition research includes the study of joint attention, attribution, attitudes, impressions, stereotypes and prejudice (Friedenberg & Silverman [2005] 2012: 323–357). Other topics of interest to researchers in this area are people’s ability for reading faces, recognizing emotional expressions, responding to eye gaze, sensitivity to biological motion, perception into action, detecting agency, imitation, deception, interpretation of complex emotions, and morality (Frith & Blakemore 2005). Both sets of authors also list the concept of *theory of mind*, or *cognitive empathy* (other terms found in the social cognition literature are, among others, *mentalizing* and *mindreading*; for an overview and discussion, cf. Gordon 1997, Ravenscroft 1997, Stueber 2008, Marraffa 2011 and Goldman 2012). Cognitive empathy is understood as the ability to put oneself into the shoes of others, to adopt someone else’s perspective, to know what another person intends, believes or knows with at least *some* certainty (cf. Batson 2009). The term refers to the social and socially developed ability to understand the mental states of oneself and others. It allows us to perceive and interpret human behavior in terms of intentional states such as beliefs, desires, needs, purposes, goals or reasons.<sup>5</sup> Establishing a connection between cognitive empathy and target audience orientation in the translation process thus seems warranted and worth exploring.

To translate for an audience different from the source text’s audience might be predicated upon translators’ ability to anticipate the target audience’s reactions by putting themselves into the new audience’s shoes. This is also why I would argue that the cognitive empathy construct is more directly related to target orientation than other constructs such as, say, creativity, intuition, and emotional intelligence. These might contribute (greatly) to the translation process and the final product’s shape, but do not seem as inextricably bound

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5. Intentionality is a notoriously difficult and contentious notion, no doubt. It seems, though, that ascribing intentionality to actions and behaviors of oneself and others is an important part of our human folk psychology. In a trailblazing work from 1944, Heider & Simmel were able to show that human beings are prone to ascribe intentionality and psychological motivations even to lifeless, but moving, triangles.

up with target orientation as cognitive empathy. Creativity, for instance, might play an equally important role in producing a source text, form-oriented translation.

Fairly recent findings in neuroscience also enable us to relate the concepts introduced above to functional neural networks. Through lesion studies and neuroimaging, neuroscience appears to have identified the brain areas metabolically active during mental state attribution, and thus the neural correlates of cognitive empathy. According to a recent meta-analysis (Lieberman 2010; also cf. van Overwalle 2009), cognitive empathy seems to be supported, to different degrees, by the following brain areas: dorsomedial prefrontal cortex (DMPFC), temporo-parietal junction (TPJ), temporal poles (TP), posterior superior temporal sulcus (pSTS), precuneus/posterior cingulate cortex (PC/PCC) and medial prefrontal cortex (MPFC). Note that (de)activation of one or several of these areas depends on which specific aspect of cognitive empathy becomes relevant in a given task or situation. Before moving on to the next section, where I discuss interfaces between the presumed target audience orientation network and other neurocognitive networks relevant to translation, I would like to put the spotlight on translation studies work that employs cognitive empathy or similar notions from cognitive science or neuroscience: Tymoczko (2012: 94, 97) touches upon empathy and its role in anticipating the target audience's responses; Martín (2012) gives thought to the related concept of mental simulation; in Presas & Martín's corpus of translation students' implicit theories (this volume), empathy and the conceptual metaphor TRANSLATING IS PUTTING ONESELF IN SOMEBODY ELSE'S PLACE make an appearance; Annoni et al. (2012) invoke the notion of theory of mind in another recent article, derived from work carried out within the University of Geneva's *Translation competence and Theory of Mind* project. Finally, a recent article from interpreting studies (where the neurolinguistic paradigm has enjoyed a certain popularity for quite a while)—Setton (2013)—also refers to the relevance of theory of mind.<sup>6</sup>

Neuroscience or research at the neurocognitive level provides us with neuroimaging (e.g., PET, fMRI, NIRS) and electrophysiological techniques (e.g., EEG, MEG) for triangulating data gained through other well-established data-gathering methods in translation process research, and affords new insights into the translation process at a different level of analysis (O'Brien 2013: 9). Taking into account findings from cognitive and social neuroscience

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6. Tied to different traditions, empathy has also been invoked by translation scholars such as Dussart (1994), Kohlmayer (2003, 2004) and Collombat (2010).

research may also help us verify and refine existing translation process and competence models, and perhaps highlight the need to add to, restructure or even replace them. In particular, we might be able to check current cognitive accounts of translation with a view to their neural plausibility.

Diamond & Shreve (2010) are among those select few who have already ventured into the world of neural and physiological correlates of translation and interpreting. They close their groundbreaking analysis of neural networks relevant to translation and interpreting by stating that “translation and other language mediation activities most likely involve many other systems, not all of which are language-specific” (2010: 309). In my opinion, the cognitive empathy network is a likely candidate for becoming recognized as such an important neural network relevant to translation. A research design and methods to test this claim will be presented after the next section (in section six).

### **5. Interaction of (neuro)cognitive target audience orientation processes with other translation-relevant processes**

Since a lot of research conducted on cognitive empathy is also situated at the neural level of analysis, links to other translation-relevant neurocognitive networks might be established at the same level. Before looking at other networks relevant to translation (and interpreting), perhaps the notion of neurocognitive network deserves a brief aside: In the human brain, activation of various distributed and interconnected neuronal populations is required for accomplishing complex cognitive functions and tasks; it should therefore not be assumed that there is just one, specialized neural network responsible for translation (and interpreting), nor that any of the supporting networks works in splendid isolation (although they can of course be analytically distinguished). So which neurocognitive networks relevant to translation (and interpreting) have already been identified in the literature? Drawing on (neuro)cognitive research, scholars such as Diamond & Shreve (2010), Muñoz (2011) and García (2013) have highlighted the relevance for translation (and interpreting) of, among others, the networks supporting (multiple) language(s), language switching, attention, and various forms of memory. I believe it would be well worth exploring the relation between neurocognitive networks like these and the cognitive empathy network. Let me examine just three such networks and their relation to the cognitive empathy network: the memory network, and the language and communication networks.

Cognitive empathy and social cognition in general seem to be associated with a particular kind of memory. Recently, such a special kind of memory for

holding social information has been postulated, called social working memory (Meyer & Lieberman 2012, Meyer et al. 2012). Since (working) memory use, depletion, etc., has been a major issue in translation (and interpreting) process research, and the relation between social working memory and canonical working memory is a complex, tricky one, we might ask ourselves how comprehensive and accurate our models of working memory are for dealing with target audience orientation and other social processes involved in translation (and interpreting). Also, ultimate performance in target audience orientation might be influenced by how empathy (and social working memory) interacts with working memory. To get a clearer picture of the cognitive and neural underpinnings of target audience orientation and to be able to draw more reliable conclusions from empirical data, it might make sense to administer a working memory test. In my study, I will be taking a look at how these two factors, cognitive empathy and working memory, interact by measuring both (see below).

The other networks I want to discuss in relation to the cognitive empathy network are the networks supporting language and communication. The relationship between the cognitive empathy and language network in human phylogenesis and ontogenesis has been widely discussed (e.g., Malle 2002, de Villiers 2007, Milligan et al. 2007). The direction of causality, that is, which of the two networks precedes and is necessary for the other's development, remains controversial, as does the possibility of co-evolution. Doubts also remain as far as the interdependence of the neural substrates supporting language, communication, and cognitive empathy is concerned. Researchers in (cognitive) neuroscience distinguish the language network per se from the neural network underlying human communication (Noordzij et al. 2009). The former corresponds to the classic language areas whereas the latter includes other parts of the brain responsible for pragmatically appropriate language use at the discourse level, comprising those related to cognitive empathy (e.g., Stemmer 2008, Balconi 2010, Ferstl 2012; also cf. Indefrey & Levelt 1999, and Rickheit et al. 2008 for models of text production and communicative competence that include the cognitive empathy network). Some sort of communication based on mental state attribution appears to be possible even when the language network is impaired or destroyed (Willems et al. 2010, 2011), but more sophisticated communication (including translation) obviously requires both, mental state attribution *and* language.

What does that spell for research into the role of target audience orientation in the translation process? In healthy human beings, it is knowing a



language (and even more so two languages; cf. Kovács 2009) at a very high level enough for target audience orientation, because superior language competence is supposed to be already built on high levels of cognitive empathy? Is language competence therefore enough for explaining the target audience orientation ability?<sup>7</sup> An objection immediately comes to mind: The cognitive empathy network's engagement during a translation task might not automatically also imply successful activation of the language network, since translators might succeed in putting themselves into their target audience's shoes without being able to come up with an actual translation solution, or linguistic expression. A way to test this assumption empirically would be to look at neural activation during an *authentic* translation task, but it will take some time before neuroimaging technology has become miniaturized and sophisticated enough to allow for ecologically valid research designs. Let me suggest another, far more feasible possibility: We could find out how measures of language competence and cognitive empathy correlate with target audience orientation. Or we might use homogeneous subject populations to exclude the unwanted influence different levels of language competence would exert on the translation process and product, so that the correlation between cognitive empathy and target audience orientation can be measured more reliably (for subject profiling in translation process research, cf. Muñoz 2009). In my study, I will be taking a look at how these two factors, language competence and cognitive empathy, interact by measuring both (see below).

Having established links between the cognitive empathy network and other neurocognitive networks relevant to translation and interpreting (studies), and having discussed some implications of that for translation process research and cognitive translation studies, in the next section I present selected aspects of a research design for investigating (neuro)cognitive target audience orientation processes.

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7. I do not want to call into question the importance for translation of other knowledges and competences beside language competence. Others have been postulated such as an "instrumental subcompetence" (PACTE, e.g., 2008: 106); PACTE has also postulated a (bi)cultural or "extra-linguistic subcompetence" (e.g., 2008: 106), which I would say is supported by the brain's long-term memory network (in PACTE's model, extra-linguistic competence is distinguished from bilingual competence with reference to the distinction between declarative/procedural knowledge). In my study, the impact of both, instrumental competence and extra-linguistic competence, will be controlled for by choice of source text and translation assignment.



## 6. Measuring (neuro)cognitive target audience orientation processes

In this section, I introduce and discuss a research design for indirectly measuring the role of (neuro)cognitive target audience orientation processes with regard to translation. Special emphasis is placed on methodological insights derived from theoretical considerations brought up in this paper.

As acknowledged above, I want to explore the claim that cognitive empathy helps translators orient themselves towards the target audience in the different phases of the translation process. How can we support or reject the claim that it is cognitive empathy that helps translators put themselves into the target audience's shoes? In order to find out more about this, I will be conducting a quasi-experiment that involves a translation task. Data will be gathered on the product, process/behavioral, and process/verbal levels; data will be collected through key and screen logging (Inputlog/BB FlashBack), cued retrospection (BB FlashBack), a product analysis, a translation concept questionnaire (PACTE 2008, see below), a working memory test (WAIS Working Memory Index), a language test (in all likelihood, the WAIS Verbal Comprehension Index) and a self-developed questionnaire on subjects' personal and biographical background. Taking a cue from translation process research's recently awakened interest in personality psychology (e.g., Hubscher 2009, forthcoming; Jääskeläinen 2012), I will also be asking my subjects to fill out a self-administered questionnaire that measures trait (cognitive) empathy. I will use the questionnaire developed by Baron Cohen & Wheelwright (2004), which calculates a metric called the Empathy Quotient. It has been psychometrically validated (Muncer & Ling 2006, Allison et al. 2011), also cross-culturally (e.g., Wakabayashi et al. 2007, Berthoz et al. 2008), and seems to be the most reliable instrument around for measuring (cognitive) empathy (Stueber 2013). Statistically significant correlations between Empathy Quotient scores and empathy-related brain activation also have been found, for instance by Lamm et al. (2007).

What I am interested in is if there is a positive correlation between Empathy Quotient (first variable) and frequency of target audience-related adaptations on the product level, target-audience related behaviors on the process level, and explicit or implicit references to the target audience in subjects' retrospective verbalizations (second variables for correlation). On the product level, my indicators for target audience orientation include explicitations and implicitations (or reductions)—a choice that seems justified considering Hansen's and Englund's results—, other non-obligatory shifts, word choice and changes of perspective. Note that the absence of this sort of shifts may not necessarily be an indicator of a lack of target audience orientation. As a result

of mental target audience orientation processes, translators may conclude that for a particular source text segment and translation assignment there is no difference in knowledge or values between source and target audience that would necessitate adaptation. On the process/behavioral level, I assume target audience orientation to show in pauses, recursivity or changes from previous versions. On the process/verbal level, target audience orientation can be expected to manifest itself in explicit or implicit mentions of the target audience. My hypothesis is that the higher a subject's Empathy Quotient is, the more target audience-related adaptations/behaviors/mentions that subject is going to make or show. In case positive correlations are indeed found, we would have evidence supporting the assumption that cognitive empathy plays a (potentially major) role in target audience orientation. It is no easy feat to conclusively link behavior to mental processes, but data triangulation should contribute greatly towards ensuring certain shifts/behaviors/retrospective verbalizations are in all likelihood related to (neuro)cognitive target audience orientation processes.

Let me briefly address a few more issues, some of them already brought up above: Earlier, we came across the possibility that the cognitive empathy network and the communication network (including the classic language areas) overlap at the neural level. Assuming that it is impossible to find a homogeneous subject population with regard to language competence, I believe we could still find out whether a certain behavior is due to a lack of cognitive empathy or a lack of language competence in the target language. In case of an apparent failure in taking account of the target audience's perceived needs, the data obtained from the quasi-experiment through triangulation should allow us to find out if the subject really did not engage the neurocognitive target audience orientation network or failed to come up with a solution at the linguistic level. In the latter event, the subject would have realized the difference in presupposed knowledge or values between source and target audience, and hence the need for adaptation. He or she just would not have had the means to achieve the desired effect. Another indicator would be poor performance on the language test administered precisely for the purpose of distinguishing lack of target audience awareness from lack of language competence in the target language.

Let me quickly and generally remark upon the choice of source text and the nature of the instructions given to those participating in the quasi-experiment: The combination of source text and instructions should be such that target audience adaptations seem likely to occur and should reflect an authentic translation situation. The instructions should be subtle enough to

not give away the quasi-experiment's exact nature or push subjects too much towards target audience orientation. Yet, they should also be clear enough to allow subjects to form an image for what and by who the translation will be used.

At this point, let me stress the importance of taking into account subjects' translation concept in a quasi-experiment like mine. Why? As hinted at in Hansen's research (see above), the implicit theory of what (a) translation is or should (not) be might severely constrain the neurocognitive target audience orientation network. For example, it would be next to impossible for a translator who has internalized strong source text orientation and predominantly literalist translation strategies to bring to bear his or her trait cognitive empathy on a translation task. Again, if it is not possible to use a homogeneous group of pre-screened subjects, the impact of this important contextual variable should be monitored to be better able to account for the encountered data. To control for subjects' translation concept, I will use the questionnaire developed by PACTE (2008).

To conclude this section, let me offer a few remarks on some obvious limits of my research: My focus on the individual level could be criticized because translation is hardly a lonely activity, and target audience orientation might involve more parties; think, for example, of the discussions translators might be having with their colleagues or clients to better capture the perceived needs of the target audience. This extended nature has been reflected in pleas for the extension of translation process research's object of study, and the introduction of new methods for studying cognitive processes (Risku 2004, Hubscher 2011, Tiselius 2011, Risku & Windhager 2013, Risku et al. 2013; Risku, this volume; also cf. the notion of post-process in writing research, e.g., Atkinson 2003, and Wolf's sociology of a more widely understood translation process, 2007: 15–16). But then, cognitive empathy is a trait that has social roots. And since I cannot really build on much previous research, I have decided to begin at the individual level. As for the results' validity, caveats certainly apply to the validity of self-administered questionnaires (e.g., de Leeuw 2008), for participants in the quasi-experiment might only report what they *believe* to know about their empathy. Mixing methods and triangulating our data might offer a way out. For additional data triangulation in my study, one could think of conducting longer semi-structured, qualitative interviews to supplement data gained from the questionnaire and the verbal data. Conducting them would provide us with potentially richer statements about translators' cognitive empathy, and issues only touched upon during retrospection could be further explored. The limited number of subjects participating in our experiments

jeopardizes the generalizability of our results, but at this juncture it might make more sense to refine research designs and methods before conducting experiments on a large scale.

## 7. Conclusion

This paper set out in search for the cognitive and neural underpinnings of translators' ability to orient themselves towards the translation's target audience during the translation process. Clarifications were offered as to what target audience refers to in my research. Drawing on research on the translation process, broad analytical categories were identified that appear to capture cognitive target audience orientation processes on the product and process level. (Neuro)cognitive concepts such as long-term memory and metacognition invoked in relation to target audience orientation were reviewed. Building on current findings from psychology, cognitive science and neuroscience, the case was made for a different concept to account for translators' ability to put themselves into their target audience's shoes: cognitive empathy. The cognitive empathy network's relations to other functional neural networks relevant to translation were also explored. A research design was proposed to test the cognitive empathy network's relevance for target audience orientation and its impact on translation product and process.

What benefits might the sort of research described in this paper yield? First, it adds to the extant body of knowledge related to audience orientation in written translation by providing a (neuro)cognitive framework for explaining target audience orientation; second, it discusses target audience orientation in relation to translation process models and componential translation competence models, and could help establish the criterion of neural plausibility; third, it contributes to a tentative (neuro)cognitive translation model by combining insights about cognitive empathy with insights about translation from other studies situated at the neural level; fourth, it helps extend research designs and improve methods typically used in translation process research and cognitive translation studies.

I hope that in the future we will see more studies combining findings (and methods) from social and cognitive neuroscience, and personality psychology, with behavioral analyses of the type we have grown accustomed to from translation process research. This might indeed usher in an interesting new phase in the evolution of cognitive translation studies and translation process research.

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