The International Journal for Translation & Interpreting Research
trans-int.org

Praxis and process meet halfway: The convergence of sociological and cognitive approaches in translation studies

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DOI: 10.12807/ti.114202.2022.a03

Abstract: In translation studies, a range of different approaches and traditions has emerged to explain the numerous factors that influence the translation decision process. While the sociology and cultural studies approaches look at the social *practices* in and around translation, their psychology and cognitive sciences counterparts concentrate on the cognitive *processes*. In this paper, we analyse and discuss two claims in particular, namely (1) that some sociological and cognitive approaches in translation studies are converging with respect to accounting for the factors that influence translation decision processes, and (2) that these approaches complement each other well, since the former increasingly take account of the individual within the social and societal dimensions, and the latter expand the focus from the individual to the extra-individual and social dimensions. We retrace the various theoretical frameworks that have been used to describe translation as a process that is embedded in a set of norms, social fields or actor networks. We then compare these primarily sociological frameworks to the distributed cognition approach developed in the cognitive sciences. Based on a discussion of the compatibilities and incompatibilities between actor-network theory and distributed cognition, we demonstrate ways of making this debate productive for translation studies research. To back up this primarily theoretical discussion, we take a closer look at two examples from our own empirical research on work processes in translation project management.

Keywords: Translation praxis; translation process; sociology of translation; cognitive translation studies; convergence

1. Introduction

Since the 1980s, translation studies have increasingly focused not only on translations (as products) but also on translation processes and translators (as persons). A range of different approaches and traditions has emerged to explain the numerous factors that influence the translation decision process. Behind them all lie the questions of how and why translators reach specific results and choose specific solutions in specific circumstances, and what effects their actions may have. In this paper, we compare some of the different approaches that scholars are currently drawing upon to try to explain translation processes and/or activities. In doing so, we will analyse and discuss two claims in particular, namely:

(1) that some sociological and cognitive approaches in translation studies are converging with respect to accounting for the factors that influence translation decision processes, and
(2) that these approaches complement each other well, since the former increasingly take account of the individual within the social and societal dimensions, and the latter expand the focus from the individual to the extra-individual and social dimensions.

Our aim thereby is to demonstrate that – as far as the factors that influence translation processes are concerned – there is no scientific basis for a hierarchization or prioritization of these approaches: neither the cognitive nor the sociological approaches can be considered more universal or fundamental than the other.

We thus seek to stimulate a theoretical debate about possible cross links between the often-distant areas of cognitive and sociological translation research. To do so, we will first retrace the various theoretical frameworks that have been used to describe translation as a process that is embedded in a set of norms, social fields or actor networks. We will then compare these primarily sociological frameworks to the distributed cognition approach developed in the cognitive sciences. Based on an interdisciplinary discussion of possible avenues of convergence, but also some (as yet unresolved) incompatibilities, which we will discuss specifically in a comparison of actor-network theory (ANT) and distributed cognition, we will demonstrate some ways of making this debate productive for translation studies research. To back up this primarily theoretical discussion from an empirical perspective, we will then take a closer look at two examples from our own empirical research on work processes in translation project management. Both examples are interpreted from the perspective of the two above-mentioned theoretical approaches: actor-network theory (ANT) and distributed cognition.

2. Focus on practices and processes

Since the 1980s, a main focus of translation studies has been to examine how translations are created. While the sociology and cultural studies approaches study the social *practices* in and around translation, their psychology and cognitive sciences counterparts concentrate on the cognitive *processes* in translation. According to Schatzki (2002), social practices are the smallest social unit and incorporate an assemblage of what is said and done. The term 'process' (as used in translation process research) stems, in contrast, from psychology, where it is basically used to designate a procedure or longer-term change (Wirtz, 2018).

Holz-Mänttäri (1984), Venuti (e.g., 1995) and Simeoni (1998) all considerably influenced translation studies by placing the focus on the translator. They suggested that translators are usually almost invisible and work in the background. The person of the translator was indeed missing both in the perception and discussion of translation in social, cultural and literary contexts and as a research focus and object in translation studies. This opened up a lively debate on the agency of translators, i.e., on their practices and possibilities for action (e.g., Milton & Bandia, 2009; Kinnunen & Koskinen, 2010).

Buzelin (2005, 2007) pointed in this context to the many transformations that have been seen in the translation industry over the last decades: the translation process is increasingly shaped by multiple actors, instruments and entities in increasingly longer supply chains and increasingly more complex production networks. She maintains that it is now all the more important to

study how translators and the other parties involved make, negotiate and justify their decisions. The current parameters of translation work exacerbate the often-precarious situation of translators and raise the topicality of sociological and actor-centred approaches and research questions (as confirmed by Abdallah and Koskinen's (2007) research on translation production networks in the modern network economy). These developments suggest that the individualist notion of the translator needs to be revised: a completed translation can be – and in practice usually is – the work of a whole group of actors (made up, for example, of in-house and/or freelance translators, translation managers, proofreaders and layout experts). Studies in this field confirm that translators – although they might seem to sit alone in front of their computers doing their translations – are in fact embedded in social networks (Buzelin, 2004; Risku, 2016; Risku et al., 2016; Kolb, 2017; Yu, 2017). Translation work inevitably leads to the emergence of complex networks of relationships, and translators are thus influenced by social conventions and by various pressures to justify their worth.

Until recently, such insights would not have had much of an impact on study designs and research questions in translation process research, which had hitherto often concentrated on situation-independent translation behaviour such as the generic differences between the translation processes of students and experienced translators (for an overview, see e.g., Jakobsen, 2017; Alves & Hurtado Albir, 2017; Muñoz Martín, 2017). However, with the growing theoretical interest in situated models of cognition, cognitive translation research now increasingly acknowledges the fundamental role of the social dimension in cognitive processes (see, e.g., Zhu's (2020, pp. 68-69) call for a more holistic perspective that integrates both what she refers to as social-psychological and cognitive-psychological frameworks). In this regard, Muñoz Martín (2016) stresses the interdependency of social and environmental factors on the one hand and cognitive processes on the other. He criticizes the frequent distinction that is made between (a cognitive) "act" and (a social) "event" as artificial and describes them as being essentially "two sides of one and the same coin" (Chesterman, 2013, p. 157). Prunč (2008, p. 28), in turn, even discusses the situated, embedded cognition approach in translation process research under the heading "Translation as Social Process".

The steadily growing body of research on sociocognitive aspects of translation and interpreting indicates that the commitment to the situatedness and embeddedness of translation has established itself both on a theoretical and an empirical level. A good example of such research is Ehrensberger-Dow and Englund Dimitrova's (2016) special issue on the situational interface of translation/interpreting, which delves into the intricacies of social and contextual embeddedness of cognitive processes in translation. As one of the first cognitive translation process researchers to observe translators directly at the workplace, Ehrensberger-Dow (2014) recognised that decisions in the field – unlike those in a lab – are influenced by implicit and explicit social expectations, hierarchical relationships and assessments of the respective organisational culture. The decision making of translators is thus not predetermined solely by the source text or by learned translation strategies; it is influenced to a large extent by social factors. This also has consequences for our understanding of translation quality: Abdallah (2012) calls for the pressures and asymmetries (in agency, information, etc.) that translators face in the workplace to be incorporated into the ongoing debate on translation quality. According to Abdallah, a more thorough understanding of translation quality can only be reached when it is framed in a context that not only includes *product* quality but also extends to the quality of the *process* and the *social* quality of a translation environment. In this respect, she embraces a holistic approach that brings together both individual and social perspectives. In a similar vein,

Koskinen (2020, p. xii) draws our attention to the affective side of translation and interpreting "taking both individual and social aspects into account", while avoiding definitions that stress *either* body *or* mind. Ehrensberger-Dow and her colleagues (e.g., Ehrensberger-Dow & Hunziker-Heeb, 2016; Ehrensberger-Dow et al., 2016) maintain that ergonomic research (i.e., the study of translators' wellbeing) should consider not only the physical and psychological aspects but also the social aspects of a workplace. Kotze (2019, p. 335) emphasizes Toury's claim that the different "functions, processes and products" of translation are inseparable and interdependent (Toury, 2012, p. 5). She refers to the "mutual embeddedness" (Kotze, 2019, p. 335) of the different areas of empirical translation studies and ontological levels of translation, describing translation "as both system and process" that is "shaped by the interplay between its individual and its social existence" (p. 336). All these insights illustrate what Hokkanen and Koskinen (2016, p. 75) stress in their analysis of "the perception that translators have of themselves, based on lived and embodied experience" (i.e. the "self as a sociocognitive interface", *ibid.*), namely that lately "researchers interested in translators' cognitive processes and those studying translation as a socio-historical, contextualized activity have increasingly found themselves on shared ground" (p. 78; for a similar discussion in interpreting studies, see Liang & Lv, 2019).

Several approaches and concepts in translation studies offer appropriate means of determining mental and social factors of influence that allow this shared ground to be studied in more detail. In the following sections, we will briefly outline those approaches and concepts that we consider particularly promising for the discussion on the convergence of social and cognitive perspectives.

2.1 Norms

In the 1970s, Toury (1977) developed his concept of translation norms in the broader context of descriptive translation studies. He defined *norms* as "the translation of general values or ideas shared by a community […] into performance 'instructions' appropriate for and applicable to particular situations" (Toury, 2012, p. 63) and described them as (usually implicit) codes of practice that reflect a society's values and ideas. As Yannakopoulou (2008, pp. 3-5) explains, this concept of norms is viewed nowadays with increasing criticism, since Toury:

> 1. assumes relatively stable norms that could actually be recognised objectively in a translation field;
> 2. assumes scientific research can unequivocally reveal existing, objectively given norms;
> 3. bases his assumptions on a very static understanding of translation (history);
> 4. gives precedence – an important aspect in our context – to the systemic dimension over the agency of individuals and (smaller) social groups; and
> 5. does not include enough room in his concept for deviations from the norm.

Prunč (2008, p. 28) also criticises the fact that the norms concept was used in descriptive translation studies to portray the social space of translators "*ex negativo,* as a restrictive and reactive space, and not as a creative space of translator interaction" (our translation) – since the norms concept focuses on what is appropriate or not appropriate in a particular translation field and actors are assumed to follow these implicit and explicit codes of practice (or to accept the consequences).

While the norms concept allowed us to describe the position of translators and translations in the target culture, a growing need was also emerging to understand the motivations and backgrounds to the decisions behind specific individual solutions chosen by translators and to study the specific contexts and processes in which these decisions are formed. Wolf (2007), Heilbron & Sapiro (2007), Gambier (2007) and many others concluded from this that a sociology of translation was therefore needed that would allow translators to be described as decision makers in specific sociolinguistic situations.

2.2 Social field theory

Bourdieu's (e.g., 1979, 1980) habitus and social field theories are two of the frameworks that have been most prominently applied to sociologically oriented translation research. Originally developed in the 1970s and early 1980s, Bourdieu's theories seek to bridge the analytical divide between the social system and the individual capacity to act (or *agency*) and were first used in a translation studies context in the 1990s. His concept of *habitus* – i.e., a person's whole demeanour and type of social behaviour – serves here to explain translation decisions. Seen in this light, individual solutions at the translation micro level do not remain seemingly arbitrary and random but instead become understandable through the translator's personal and professional life history.

Yannakopoulou (2008) advocates a very specific application or extension of field theory, maintaining that neither social influences nor the *professional* habitus of translators should be the deciding factors in explaining translation solutions, but rather their *personal* habitus as the end results of their individual life histories. Field theory "might also help to give some insights in the translation process itself and the strategies each translator chooses to adopt, consciously or subconsciously, thus making us more aware of the motives underlying these choices" (Yannakopoulou, 2008, p. 28). However, it is precisely this goal – gaining insight into the deliberations that translators battle with during the translation process on the micro level of the text – that Buzelin (2005) and Sela-Sheffy (2014), among others, describe as something that cannot be adequately explained using Bourdieu's field theory.[1] Buzelin and others propose another theoretical framework for this purpose, namely the actor-network theory formulated (and later expanded) by Latour (1987, 2005) and Callon (1986) in particular.

2.3 Actor-network theory

Actor-network theory (ANT) places the focus on studying heterogeneous networks or assemblages of human and non-human actors (or actants). It assumes that "entities take their form and acquire their attributes as a result of their relations with other entities" (Law, 1999, p. 3). According to ANT, sociality is thus only created through situation-specific interactions (Latour, 2005, pp. 1-5). *The social* in ANT therefore "doesn't designate a domain of reality or some particular item, but rather is the name of a movement, a displacement, a transformation, a translation, an enrollment" (pp. 64-65). No explanatory societal or socially prescribed structures are therefore assumed;

[1] One of Bourdieu's critics, sociologist Bernard Lahire, calls for a "sociology at the level of the individual" (Lahire 2003) that tries to account for the "variations between and within individuals" (*ibid*., p. 351). Lahire's work could thus prove to be another possible candidate for bridging sociological and cognitive conceptualizations of the translation process. A discussion of Lahire's critique of Bourdieu's habitus concept from a translation studies perspective can be found in Vorderobermeier (2013, p. 52-54). See also Wolf (2007, p. 22-23) on the possible relevance of Lahire's work to translation research and Schlager (2021) on an empirical application.

ANT looks instead to study how and through what the social arises (in our case, for example, translation norms). To this end, interpersonal and also human-object[2] interactions are described on the micro level. In its application in translation studies (e.g., Hekkanen, 2009; Jones, 2009; Kung, 2009; Bogic, 2010; Abdallah, 2012), ANT offers the possibility to actually observe and explain translation decision processes at the level of the individual and his/her interactions with other actors (e.g., clients, agencies and technology). The observation of work processes in authentic workplace settings reveals how social units are maintained as networks through continual interaction, and how the actors as network nodes are thereby also changed themselves. Translation processes can thus actually be reconstructed without losing sight of the multitude of factors that influence them.

ANT has a strong parallel in cognition research, namely the distributed cognition (or cognitive ethnography) approach developed by Hutchins (1995a, 1995b), which places the focus on very similar sociocognitive dynamics as ANT and makes equal use of ethnographic or other participatory observation methods.

2.4 Distributed cognition and cognitive ethnography

The distributed cognition approach is one of a number of current approaches in cognitive science which assume that cognition is not just an internal mental operation but constituted through interaction with the social and material surroundings. Hutchins (1995a, 1995b) describes cognition as situated and embedded within the world through interaction. In this sense, it is 'distributed', i.e. to explain intelligent action, the situation must be observed as a whole *in situ*. Cognition draws on mental, bodily, material and social structures. The distributed cognition approach thus expands the boundaries of the unit of analysis of cognition to include events inside and outside the individual's skin.

In the distributed cognition framework (Hutchins, 1990, 1995a, 1995b), human cognition is based on the ability to interact with and integrate bodily and external components into human activity and to create and use elements of this interaction-in-context as representations. These representations are external elements that can be transformed and manipulated to support cognitive activities such as thinking, navigating and problem solving.

Empirical studies based on the distributed cognition approach typically use ethnographic methods to observe and analyse human activities in their authentic contexts. Ethnography originates from anthropology; in ethnographic research, participant observation, interviews and artifact analysis are typically used to study the ideas, language, organization and resources employed by members of a given social group. Traditional ethnography thus offers insights into the ways of thinking in a cultural group (see, e.g., Westbrook, 2008). As Williams (2006) emphasizes, "cognitive ethnography extends ethnographic research in the direction of process analysis". It investigates the unfolding, moment-by-moment development of activities in different time scales and studies processes in which those involved create meaning, make decisions, and develop/use their ways of thinking, language and other resources. It extends ethnographic descriptions of knowledge to the ways in which activities unfold and knowledge is created. To explain intelligent action, the activities are observed as a whole *in situ* in order to capture the material and social circumstances in which they take place. Such studies often focus on how human beings interact with artefacts and with each other in a given work or learning context and how representations

[2] In ANT, an *object* can be more than a physical artefact. Latour (2005, p. 70) refers to objects as "matters of concern" as opposed to "matters of fact".

are created and propagated in these interactions. Hutchins, for example, examined cognitive processes as collaborative and artefact-mediated activities on large ships (Hutchins, 1990, 1995a), in airplane cockpits (Hutchins, 1995b), and in scientific laboratories (Becvar et al., 2008). In line with this approach, the micro level interactions in contexts in which translators act can be studied as cognitive processes of distributed cognitive systems, for example by examining the distributed character of translation processes in production networks, translation agencies and other collaborative constellations and the technologies upon which modern-day translators rely. Accordingly, the distributed cognition perspective can help to reframe cognitive processes as a collaborative, interactive endeavour (as, e.g., in online translation communities, Jiménez-Crespo, 2017, pp. 106-107).

3. Social and cognitive approaches: Friends or foes?

In their application in translation studies, ANT and the distributed cognition approach are the two approaches that are most clearly converging with respect to accounting for the factors that influence translation processes, since ANT takes account of the individual within the social dimensions, and the distributed cognition approach expands the focus from the individual to the social dimensions, as laid out in our two claims in the introductory section.

There are some notable parallels between ANT and the distributed cognition approach. Both place the focus on studying the situation-specific interactions of actors with their social and material surroundings. These interactions are seen as sources and constituents of sociality and cognition, not just incidents that indicate how pre-existent higher-order 'social' structures influence 'individual' interactions or how 'internal' mental processes are influenced by 'external', environmental factors. They stress the need to study processes and not (only) structures. The unit of analysis in both is thus a heterogeneous, contingent assemblage of human and non-human (or: biological and non-biological) entities that demonstrates sociocognition due to the reciprocal relations between the respective entities. Also typical of both ANT and the distributed cognition approach is their common assumption with regard to the primary role of interaction: We are not steered by *a priori* social structures and only capable of individual action in the framework of those structures, and we do not act as individuals and only resort to social and material resources when incapable of solving a problem unaided. On the contrary, the interaction with the social and material is where both sociality and cognition arise in the first place.

Another point at which ANT and the distributed cognition approach converge is the use of ethnography as a main research method. The particular advantage of ethnographic methods lies in the fact that they reveal how something actually comes to be, is constructed or works in a given situation. Flynn (2010, p. 118) points out that "ethnographies of translation can reply to the need for more context called for in other areas of translation research". While he refers here to corpus studies, this could also be substituted with translation process research. He goes on to say that ethnographies of translation "can also add to larger scale sociologies of translation (…) by providing 'thick' situated insights into translation practices" (for instance, how translators and other actors negotiate and maintain their positions). Ethnography therefore provides data that is highly useful for either of the research traditions discussed above.

The parallels between ANT and distributed cognition could be seen as a paradigmatic example of or leverage for the convergence of sociological and cognitive approaches to explaining human activity, also in translation studies.

Even Latour himself points to the parallels between ANT and Hutchins' distributed cognition approach (Latour, 2005, p. 11). However, this harmonization is also questioned by the "cognitive moratorium" that Latour (1987, pp. 246-247) himself proposed some years earlier:

> Any study of mathematics, calculations, theories and forms in general should (…) look at how observers move in space and time, how the mobility, stability and combinability of inscriptions are enhanced, how the networks are extended, how all the informations [*sic*] are tied together in a cascade of re-representation, and if, by some extraordinary chance, there is something still unaccounted for, then and only then, look for special cognitive abilities. What I propose here (…) is in effect a moratorium on cognitive explanations of science and technology! I would be tempted to propose a ten-year moratorium.

Latour thus seems to claim that there is an unjustified predominance of cognitive explanations in science and technology studies and that many of the explanations regarding the cognitive level are probably redundant since sociological theory might suffice to fully explain the research object. He seems to criticize an overly individualistic view of scientific and technological innovation in which success is attributed to the genius of a single researcher or inventor with "special cognitive abilities" (see above).

The assumed convergence of social and cognitive research traditions and perspectives has awakened a lively debate, especially in science and technology studies (STS). Therefore, to avoid jumping to any overly optimistic conclusions about a harmony of the social and the cognitive in translation studies, we would first like to summarize this debate outside translation studies by offering a couple of examples of the many statements that have been made and positions that have been taken.

Giere and Moffatt (2003) are representatives of the optimistic view of the convergence of social and cognitive research approaches. While they would not go as far as to describe ANT and distributed cognition as interchangeable, they do point to the possibility of reconciling the two frameworks. By way of example, they discuss the topic of external representations (e.g., illustrations, models or visualized knowledge representations) and artefacts – and their role in scientific innovation. They base this discussion on an article by Latour (1986) entitled "Visualization and Cognition: Thinking with Eyes and Hands" that clearly seeks to embrace cognitive aspects of why scientific revolutions take place. According to Latour, "[t]he invention of new forms of external representation and of new instruments for producing various kinds of representations has played, and continues to play, a large role in the development of the sciences" (*ibid*., p. 305). Researchers who follow the distributed cognition approach would certainly concur with this view. For them, the importance of these kinds of new representations and instruments would lie in the fact that they create new distributed cognitive systems. Following Hutchins, such representations and instruments would allow their developers (and others) to understand and develop knowledge that they would not have had access to without them. Only through manipulating such external representations and instruments and relying on social interaction are they able to acquire (or rather construct) and use such knowledge. Making the workings of an object (whatever it is that is being explained) comprehensible and visible by using external representations and instruments is what makes the knowledge understandable, acceptable, persuasive and veracious for others.

However, as Giere and Moffatt (2003, p. 305) point out, Latour offers a different explanation of why new knowledge (e.g., scientific inventions) becomes accepted. According to Latour, new knowledge becomes attractive and

powerful because its external representations (e.g., scientific papers, patents, new technology, etc.) are stable and mobile and can thus be collected in centres of knowledge (like universities). What makes such new knowledge powerful, however, is not that it is persuasive *per se* or because of users' convincing experiences with it (as suggested in Hutchins' distributed cognition approach), but because the centres of knowledge (like universities), where these external representations are gathered, are influential – and because their power is then attributed to these external representations.

In both approaches, the mechanisms and processes of acquiring new understanding and knowledge are thus described as the interaction of the whole hybrid unit of humans and their environment. Looking beyond this common ground, however, we see a typical disparity in the cognitive and sociological explanations. The explanation provided in the cognitive approach – distributed cognition – underscores the generation of human understanding in order to make sense of and be able to navigate in the world (and does not focus on power relations), whereas the sociological approach (ANT) emphasizes the power and authority of individuals and institutions over others. In other words, the "scaffolding" provided by external representations, instruments and social interaction is used to explain human activity and understanding on the cognitive side of the debate, while the power and position of individuals and groups that eventually "persuades others of their veracity" serves on the sociological side as the explanation for new forms of knowledge (*ibid.*). Combining both perspectives to a sociocognitive view would assume that the two phenomena can be indented: The interactive manipulation of representations or objects for a better understanding may coincide with the social persuasion by influential centres of knowledge.

The voices in science and technology studies that promote a convergence of ANT and distributed cognition thus claim that the two approaches simply look at the same processes from two different perspectives and thus draw different consequences from the interactive and social view on human thinking, learning and action. Despite – or perhaps even because of – this, they are still compatible and complement each other, thus providing an example of epistemological pluralism (for more on epistemological pluralism in cognitive translation studies, see Marín García, 2019).

As already mentioned above, Giere and Moffatt (2003, p. 308) see major areas of agreement between the ANT and distributed cognition approaches. Toon (2014), however, is far less convinced of the fruitfulness of any harmonization between these scholarly directions. He takes a closer look at the way in which Hutchins describes the significance of social interaction in his seminal book *Cognition in the wild* (Hutchins, 1995a) and states that even though Hutchins declines the understanding of human cognition as computation, he still uses this metaphor on the social interaction level. For Hutchins, the socially distributed system of decision making in a group or network of individuals computes adequate responses to the actual situation. Hutchins (1995b, p. 49) describes this as "the creation, transformation, and propagation of representational states", a computational system strongly reminiscent of the propositional, symbol manipulation view of the mind. Toon (2014, p. 117) maintains that this view is not able to explain "why a particular computation is being performed or why a specific representational system is being used to carry it out". Accordingly, he views distributed cognition simply as a "technical" (p. 122) approach that cannot reconcile the debate between the social and cognitive accounts.

Toon (2014, p. 123) goes on to suggest that another cognitive approach might be better suited for reconciling the competing social and cognitive explanations, namely the extended cognition approach proposed by Clark and

Chalmers (1998). This view on cognition claims that external entities not only influence but also play a constitutive role in cognitive activities: they are constitutive parts of the cognitive system that extend it from the brain to the body and the world. Despite Toon's initial scepticism regarding the extension of cognitive systems into the world, he maintains that the social interactions are described here not only as computational but "in the same sense as internal, psychological processes, such as memory" (Toon, 2014, p. 122). He also states that the extended mind thesis "would seem to offer a way to bridge the gap between cognitive and social theorists" (*ibid*.), even though "further work would be needed to show that social processes are also cognitive" (p. 123).[3]

4. Empirical examples: Expansion of the scope of translation process research

To illustrate the potential for the cross-fertilization of social and cognitive approaches in translation process research, we would now like to discuss two examples from our own empirical research on cognitive processes in translation. For the purposes of this paper, we revisited our analysis of data gathered in a case study on translation project management (Risku et al., 2019; Milošević & Risku, 2020; Rogl & Risku, forthcoming). In this study, we investigated the cognitive preconditions of translation with the social embeddedness of translation processes in mind, in line with the social and sociocognitive expansion of the scope of cognitive translation process research (see e.g., Ehrensberger-Dow & Englund-Dimitrova, 2016). Our research focus lay on the situated cognitive processes that occur in translation processes and on the interactions of the translation project managers with the relevant actors and artefacts in their network. The research object was thus understood to be a dynamic assemblage of brains, people and external units – a form of technology-assisted production in a social environment (as described also by Dragsted, 2006 or Olohan, 2011).

The goal of this particular research project was to examine the long-term developments in the management of translation projects. Accordingly, the project was designed as a long-term study. For this purpose, we carried out participant observation in a translation agency in Austria for four weeks in 2002 (approx. 47.5 hours of observation), one week in 2007 (17.5 hours of observation) and four weeks in 2014 (170.75 hours of observation). Additionally, we conducted interviews with the project managers and the managing directors of the agency. While the interviews were part of the observation sessions in 2002 and 2007, ten additional, qualitative, semi-structured interviews – separate from the observation setting – were conducted with eight project managers and two CEOs in 2014 (with a total of 26.4 hours of recorded material). In all three data collection periods, the data were collected in one and the same translation company. The interview transcripts and

[3] Practice theory approaches (see Olohan, 2017, 2021 for an application in the translation studies context) could be another candidate with – in our opinion – strong reconciling potential in this debate. According to Reckwitz (2003, p. 282), there are three basic elements to theories of social practices: (1) an 'implicit', 'informal' logic of practice and anchoring of the social in practical knowledge and know-how; (2) a 'materiality' of social practices in their dependence on bodies and artefacts; and (3) an interplay of routine and systematically justifiable unpredictability of practices (see also Schatzki et al., 2001). It would seem that we have here a situated, embodied, extended view of social practices that would also merit a closer look if we want to 'befriend' the social and the cognitive.

observation protocols were then analysed using the qualitative content analysis method proposed by Gläser and Laudel (2010), with a combination of both deductive and inductive categories for data coding. Due to the large amount of data gathered (especially during the observation sessions), we relied on *MAXQDA* (a software tool for qualitative data analysis, Kuckartz, 2014) for software assistance during data preparation, analysis and visualization.

Needless to say, our data first and foremost revealed that things have changed considerably in the translation sector in recent years. The two examples below concern precisely these changes, namely the role of technology and the way work is structured. We chose these examples because they provide a particularly good illustration of interaction in heterogeneous networks of people and tools (a core concept in both distributed cognition and ANT). We would, however, also like to stress that rather than giving in-depth insights into the empirical findings gained during this case study, this paper is intended more as a thought experiment for the purpose of construct validation. Our aim here is to analyse what differences in conceptualization might arise or be gained by applying two different theoretical frameworks to the interpretation of the same set of empirical data. We thus seek to demonstrate that while both approaches can be used to explain similar aspects of – in our case – translation project management constellations, they will each suggest a different set of consequences.

4.1 Example 1: The conceptualization of translation technologies

The first example concerns translation technologies as artefacts. Which role do they play in the translation management process? How has this role changed over time and how would technological changes be conceptualised using either distributed cognition or ANT as the underlying theoretical framework?

Our observations and interviews in the translation agency revealed that, in 2002, artefacts were used above all to save and reuse existing data. The translation memory used by the company we studied allowed the reuse of existing translations – especially for repeat customers. Various databases supplied information, for example on terminology, clients, external translators and translation agencies. From a cognitive perspective, these technologies can be depicted above all as external supports for the human memory. When explored from a distributed cognition perspective in particular, they can be interpreted to also lead to the formation of new distributed systems. However, in our first observation period, these 'distributed systems' remained mostly limited to one user and the various tools she used.

Inspired by Latour's perspective (as discussed above), the way the managing director described the company's translation memories ("a treasure trove") at this time is interesting. She depicted them as information resources that – just as Latour described – are pooled in the translation agency. Since others have no access to these resources, they provide the company with a competitive advantage and commercial/social power.

By 2007, in contrast, a notable increase could be seen in the use of technology to manage processes. The project management software that had been introduced in the meantime set the steps to be followed for each project. In distributed cognition terms, this can be described as a typical cultural scaffold: the tools and technologies (artefacts) developed and used by people to augment their cognitive processes provide them with a supporting structure and thus also steer these processes. The distributedness of the cognitive process – in the sense intended by Hutchins (1995a, 1995b) – is especially visible here, as the translation management process is carried out interactively by humans and artefacts. The project management system is also a good example of the notion that artefacts – as Hutchins (1990) puts it (referring to his case study conducted

on a naval ship) – serve not only as mere "amplifiers of information-processing abilities or as intelligent intermediaries or agents who are also involved in the task performance" (Hutchins, 1990, pp. 198-199). They also fulfil a broader coordinating function. The project management software also distributes knowledge among the team members, thus making the team as a whole more "robust in the face of individual component failures" (p. 193). Examples of such "failure" in our case could be individual team members falling ill, personal notes getting lost or simply project progress being tracked by only one person on a standalone computer. As in Hutchins' study, the ability to work with the common, technology-assisted process can be seen in our case as a central component of translation competence/expertise. Hutchins (1990, pp. 205-206) himself conceptualizes this as follows:

> Clearly a good deal of the expertise in the system is in the artifacts, both the external implements and the internal strategies; not in the sense that the artifacts are themselves intelligent or expert agents, but because the act of getting into coordination with the artifact constitutes an expert performance by the person.

Since the technology is used here to coordinate the internal processes in the agency, it ultimately also has a connecting and identifying function within the company, which in Latour's terms (see above) would make it one actor in a *social* assemblage or association. From an ANT point of view, the period of time when the project management system was introduced in the agency would be of particular relevance, since following and observing innovation processes is one of the methodological strategies proposed by Latour (2005, pp. 79-81) to actually reveal an object's activity:

> [O]bjects live a clearly multiple and complex life through meetings, plans, sketches, regulations, and trials. Here [in the place where they are implemented], they appear fully mixed with other more traditional social agencies. It is only once in place that they disappear from view. This is why the study of innovations and controversies has been one of the first privileged places where objects can be maintained longer as visible, distributed, accounted mediators before becoming invisible, asocial intermediaries.

The project management software implies and strengthens a specific view of translation (management): in the sense intended by Latour (see above), it is a stable, mobile inscription and representation of translation. An analysis of the interviews with the agency management also shows that the aim of standardizing and technologizing the agency's processes was to strengthen its image and authority as an up-to-date and innovative language service provider.

Seven years later, in 2014, translation technologies had taken on another new role. Depending on the client, translator and work step, different common software packages or multi-user-group online platforms were now used. Project managers worked with some clients via an automated project management platform, while with others they only used a common software programme for review and validation processes. A feedback and query management programme connected them to both clients and translators. From a distributed cognition perspective, the cognitive system is thus no longer limited to one user and several artefacts but instead integrates a large group of humans and artefacts with different roles and functions. Competence/expertise is not (or no longer) only defined by the ability to use a certain tool, it is extended to the ability to connect with the different actors through different media and technologies.

Mastering a comprehensive set of tools and accepting the different systems implemented by clients had become standard work criteria for translation project managers. Whereas previously the agency defined its own state-of-the-

art tools, it was now the clients who had gained a major influence on the choice of the systems used (or not used).

Interpreting these observations against the backdrop of ANT, the complexity of the network with its variety of people, tools and procedures involved come as no surprise. As Latour (2005, p. 72) explains, what is new about ANT "is not the multiplicity of objects any course of action mobilizes along its trail", but rather that it takes this insight as a starting point to its quest to trace heterogeneous and often opaque forms of agency. ANT understands objects as "full blown actors" with a capacity that has long been denied them in the social sciences, namely the capacity to be "at the origin of social activity" (*ibid*.). Also, as Law (1999, p. 4) points out, "there has been much effort [in ANT] to understand how it is that durability is achieved. How it is that things get performed (and perform themselves) into relations that are relatively stable and stay in place". Thus, when applying this framework, we would not stop at the realization that, over time, some (human) stakeholder groups (in our case, the company management, the project managers, the clients, etc.) seem to have had more influence over the choice of tools than others. Instead, ANT would help us to go beyond this realization, look more closely at how the tools themselves become active and thus gain a more comprehensive and differentiated understanding of the causes for the observed shifts in power. In other words, we would be able to gain an insight into why some particular tools and courses of action are more readily dismissed than others, why some become established as the standard set of tools or procedures and why it might seem easier to reverse one particular development than another.

By observing over such an extended period, we were able to conclude that the role of technologies had changed from that of a memory aid and information resource to an internal office tool to manage activities and then to a 'socially' connecting object that also incorporates different groups of external actors (see Rogl & Risku, forthcoming, for a more detailed analysis). These observations can be interpreted through the lens of distributed cognition or ANT, either of which will place the emphasis on and highlight different aspects and consequences of the same distributed, situated and interactive activities.

4.2 Example 2: Understanding work organisation

Our second example concerns the changes in the way work is organised (which clearly has some connections to the discussion on the technologies used).

In 2002, we observed various highly individual approaches to handling translations in the translation agency. Between 2002 and 2007, the work processes were harmonised, and the way translation projects were handled depended less on the individual preferences of the project managers and more on joint standards. Between 2007 and 2014, work processes had become more flexible again, yet not because of individual preferences but rather to meet the demands and possibilities of clients and the types of texts they sent for translation. Instead of following a unified standard, processes now differed depending on the client. Different teams and review methods were used, for instance, for different clients, and there were specialists for different types of texts. This meant that the processes for the translation of certificates or advertising texts, software localisation and subtitling differed greatly from one another. This flexibility was also evident in the interviews with and comments made by the project managers, as the following statements show: "I think like the client"; "I'm not just a document pusher"; "In the meantime, non-typical projects are now typical" and "That's the way that client wants things". This was an instance where translation project managers were required either to specialise on a certain type of text and translation or demonstrate a high degree of flexibility and adaptability. The process is negotiated and agreed upon in a

situated manner – sometimes *ad hoc* for one single translation, sometimes for a long-time, comprehensive client-vendor-translator relationship.

Applying a distributed cognition view to these changing approaches to work organisation could help in mapping out the different forms of cooperation on a micro level. From this perspective, the focus would lie on how activities, knowledge and expertise are distributed and coordinated in a situated way. Distributed cognition would not accord a steering role, for example, to generally applicable standards or client expectations. Instead, it would understand them as one of many *resources* involved. In trying to determine how work division is actually accomplished, this theoretical perspective would ask which tasks in the different project management processes are taken on by whom or externalised to what tool, what function they fulfil, how work is coordinated between the different actors (in our case project managers, clients, translators, proofreaders, etc.) and artefacts and what this means for the negotiation and coordination of knowledge and ability among the various instances involved. Also, as in Hutchins' analysis of cooperation on a naval ship, distributed cognition would help reveal the conflict between "nominal and real divisions of labor" (Hutchins, 1990, pp. 209-211) – something that soon became apparent in our observations as well – and shed light on the reasons why the predefined task distribution is sometimes ignored to avoid or overcome problems in specific situations.

Interpreted against the backdrop of ANT, the focus would lie not so much on the complexity of task distribution but on the reason why a particular constellation – in this case of work organization and cooperation – emerged in the first place and what makes specific constellations particularly durable over a longer period of time (Law, 1999, p. 4). This interpretation might sound similar to the points we discussed in the previous example. The reason for this is that an ANT analysis would not try to separate explanations of changes in technologies, changes in work procedures or changes in team constellations, since it does not (theoretically and methodologically) distinguish between human and non-human actors. ANT holds that it is not possible to attribute actors' influence on the network exclusively and homogeneously to something that could be described to pertain to *either* society *or* technology (Latour, 2005, p. 76). Adopting this framework, the questions we would pose to our data would instead be: what "invisible hand" (Latour, 2005, p. 44) makes the project managers do things (in a specific way), what might make a whole group of them act in a similar or collective way and what causes change? In this way, ANT would help to reveal complex forms of agency whose origin cannot at first be either clearly identified or ascribed to a single responsible instance (*ibid*.).

5. Discussion

In this article, we discuss the interplay between the individual and society, between cognitive and sociological questions. Jakobsen (2015) also identifies these – as he calls them – opposing force fields within translation process research, which he refers to as "centripetal" and "centrifugal" research foci: while some researchers test increasingly specific hypotheses about internal, mental or even neuronal translation processes – above all in lab settings – and thus circle ever closer around the core of cognitive processes, namely the brain, others study global interactions and their effects on translation decision processes by looking at translation workplaces. Hansen (2010) pleads in this context for an "integrative" view of the translation process, one that combines approaches from the natural sciences, the social sciences and the humanities.

In the seemingly so individual decision-making processes of translators, it frequently becomes apparent just how diverse and complex the influences of social and societal dynamics and phenomena are. The situatedness and social conditionality of cognitive processes allows the emergence of higher-order cultural structures as scaffolds and constraints (i.e., supporting and limiting parameters), whose own dynamics cannot, however, be reduced to the mental and individual level.

The assumption that translation processes are socially situated and contextually embedded is not a methodological but a theoretical argument: it does not automatically predetermine the use of specific empirical methods or research designs. The fundamental shift in translation studies (and not only in translation process research) is the idea that research objects like translation and interpreting are affected by this permanent and contingent bond of the social and the cognitive, no matter whether studied in labs, classrooms or workplaces. Irrespective of the mode of study, researchers who endorse the notion of sociocognitive situatedness are challenged to consider its consequences on their research.

Since the sociological orientations in translation studies are now gradually according more relevance to the importance of individual decision making, and the cognitive orientations have likewise recognised the importance of the social, nothing more now stands in the way of theoretical and methodological convergence, at least in the pursuit of explanatory compatibility sense. Practice and process meet halfway: the one – the social parameters and the effects of the networks – cannot be explained without the other – the cognitive dynamics and the effects of the individual actors (and vice versa).

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