

Chapter 1

Affect and emotion in translation process research

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1. Introduction

A few years ago, I was lucky enough to meet and compare notes with a colleague in psychology. As I was trying to explain my work in translation process research (TPR), I stumbled across a question that startled me, that is, ‘do you actually study behaviour or cognition?’ Few scholars in translation studies today would argue against the fact that TPR is deeply rooted in psychology (See O’Brien 2013; Jakobsen 2017; Zhu 2020; Hubscher-Davidson and Lehr 2021). But this question I stumbled across back then has made me re-examine the relationship between TPR and psychology and it is within this wider context that I contemplate about the evolution of affect and emotion in TPR to date and beyond.

To be more precise, this chapter aims to unpack the evolution of translation affect and emotion as a subject of investigation in TPR and argues that such evolution coincides with the continuous formation of TPR as a sub-discipline within translation studies, particularly in relation to its methodological advancement, which also aligns with conceptualisation deeply rooted in psychology.

2. Attitudinal and affective factors in think aloud protocol studies

There is no doubt that cognitive psychology plays a very important role in TPR. The translation process is often referred to as a cognitive process, cognitive activity, strategic behaviour or cognitive behaviour (see Jakobsen 2017). In the early 1990s, TPR was at its infancy. Its customised data collection method was centered around the use of think aloud protocols (TAP) (See Kussmaul 1997, Krings 2001). Also known as concurrent verbal reports, TAP was a data collection method directly borrowed from cognitive psychology where subjects verbalised their thoughts. In the methodological history in cognitive psychology itself, TAP was in fact once considered to be an innovative form of the verbal report, which differentiated from retrospective and introspective ones. This was because the retrospective report was conducted after a task was completed and the introspective report was conducted in short intervals during a task, but TAP was the only verbal report method conducted simultaneously during a task, having the advantage of timeliness, minimal data loss and minimal subjects' self-analysis (See Ericsson and Simon 1984).

A qualitative data collection method by nature, TAP was regularly employed in small-scale case studies which featured translators' individual differences and idiosyncrasy. It was perhaps no surprise that 'affect' presented itself in a handful of early TAP studies. Early TAP adopters, such as Laukkanen, Jääskeläinen and Tirkkonen-Condit found many evaluative comments in their TAP data. They were referred to as 'attitudinal and affective factors' in the translation process (Laukkanen 1996). It was reported that these evaluative comments were largely related to translators' self-image, their own translation performance or even the quality of dictionaries they chose to use, etc (ibid). Tirkkonen-Condit (1997: 69) later named these evaluative comments 'expressives' and hypothesised a positive correlation between the proportion and specificity of 'expressives' and translation proficiency. In other words, the more and specific a translator is able to articulate or express oneself through evaluative comments (in TAP), the

better s/he is likely to be able to translate. Analysing her TAP data, Jääskeläinen also (1999: 241) reported very similar results, although she described them as translators' personal involvement either being implicit or explicit. Both Tirkkonen-Condit and Jääskeläinen's studies appeared to lean towards the concept of 'meta-cognition' and its value to translators' performance. Nevertheless, TAP as a research method was not without its controversy (See Jakobsen 2003). For instance, while reflecting on the validity of TAP as a research method, Hansen (2005) alluded that it was absurd to claim that TAP was a concurrent verbal report of thoughts. Given the 'firing' speed of neural operations, it was simply not possible to concurrently verbalise one's thoughts. Instead, 'What is verbalised is a conglomerate of memories, reflections, justifications, explanations, emotions and experiences, and it seems likely that these cannot be separated from each other...' (Hansen 2005: 519). Interestingly, Hansen's comments probably represented one of the earliest indications and direct acknowledgement that emotion cannot be separated from cognition.

But even though these early TAP studies offered some interesting observation about translators' affect, by and large, 'affect' or 'affective factors' represented an 'offshoot' of translators' idiosyncratic characteristics and occupied a peripheral position in the field (See Bednarova-Gibova and Majherova 2023: 102), which was in stark contrast to the majority of TAP studies that primarily focused on translators' cognition, particularly in relation to their problem solving and decision making strategies.

At this point, I would like to share an anecdote when I was a relatively young academic in early 2000. Out of blue, I was contacted by a postgraduate translation student with a request to fill in a questionnaire. This was of course nothing unusual. What stuck in my mind was the fact that this postgraduate student wanted to know why I thought TAP had fallen out of fashion as

a research method in TPR. This anecdote highlighted TPR's gradual transition at the time from the non-digital research methods to the subsequent explosion of digital research instruments widely used in TPR. This brings out the discussion of the next section.

3. The peripheral position of affect at the eve of digital instrument adoption

Ironically, affect appeared to fall out of favour among TPR scholars when digital research instruments, such as keylogging and eye tracking software, were initially introduced to the field. A plausible reason might be that the notion of 'attitudinal and affective factors' is firmly attached to TAP data and that TAP was considered out of date at the time. Yet, a curious question arises: why the introduction of these early digital research instruments did not seem to spark any interests about affect and emotion in TPR? To answer this question, one may have to look into what these early digital research instruments were and what they represented.

Keylogging software, such as Translog, Inputlog, and Scriptlog, represented the earliest digital research instruments adopted in TPR. As the name literally suggests, keylogging software was designed to log keyboard activities. Among these keylogging softwares, Translog (see Jakobsen 2014) was probably the first and the only digital research instrument not directly borrowed from other adjacent disciplines but specifically created in TPR to capture the translation process. In Jakobsen's (2017: 28) own words, 'Translog was developed partly in response to concerns about think aloud data', as controversy exists about how reliable (or scientifically accurate) TAP data could be (See Bernardini 2001; Sun 2011). Translog was therefore developed by Jakobsen to triangulate the cognitive data produced by TAP. While keylogging software represented an exciting advancement into the digital era for TPR, it was not without its shortcoming. This was because as a stand-alone data collection method, the

main source of cognitive data in keylogging software peculiarly relied on the passive or ‘non-behaviour’ of translating, i.e., pauses, rather than the active or more visible typing behaviour. (See Immonen 2006). As Leijten and Van Waes (2013: 1), the developers of Inputlog, admitted, ‘while [keylogging] allows for ecological data collection, it is often difficult to connect the fine grain of logging data to the underlying cognitive process’. On the surface at least, the translation process being observed or the data being captured by keylogging software was predominately behavioural rather than cognitive. This probably planted a seed that even though TPR had been known to be the cognitive process of translation or cognitive translation studies, it was challenging to ‘tease out’ cognition from behaviour in most TPR studies. The truth was that by default cognition was ‘twinned’ closely with behaviour in TPR studies. This was why I was startled when the psychologist asked me whether TPR was about behaviour or cognition, given that behaviourism and cognitive psychology belonged to two distinct sub-disciplines in psychology and each following very different theoretical traditions. To be fair and as mentioned before, keylogging software was rarely used alone in TPR. This was probably why Translog-II (See Carl 2012), an updated version of the original Translog, was later developed to be used specifically in conjunction with other data collection methods, primarily eye trackers (See Hvelplund 2017). The combination of Translog-II and eye tracking has been a match made in heaven, as Translog-II logs the behaviour or rather ‘non-behaviour’ of keyboard activities, i.e., the production process in translation, while eye trackers capture their eye-movement (or cognition) on the computer screen, i.e., the comprehension process in translation. This was known as the CRITT methodology developed by Copenhagen Business School (See Carl, Schaeffer & Bangalore 2016), which has been widely adopted in many TPR studies to date. It is worth noting here that unlike keylogging software, eye tracking as a research instrument has a stronger theoretical basis between the data captured (i.e. eye movement) and cognition, due

to the renowned ‘eye-mind hypothesis’ (Just and Carpenter 1980), which is widely accepted in cognitive psychology in that eyes are believed to focus on what the mind is processing.

Perhaps it was due to the excitement (or some may argue ‘complication’) of adopting these new digital research instruments from another discipline, and the overwhelming prospect of studying many new aspects of the translation process, affect and emotion did not seem to draw much attention among TPR scholars at least initially. From the perspective of a wider context in the field of translation studies, this was an exciting period when TPR, whose characteristic was interdisciplinarity, had begun to blossom into a sub-discipline of translation studies. Being an inherently interdisciplinary sub-discipline, TPR scholars were acutely aware that they were in constant battles of grappling with new (digital) research instruments particularly at this time when they were first introduced into translation studies. Jääskeläinen (1999: 3) described it as ‘trying to sit on several chairs at the same time’. While this was what drove many TPR scholars to explore the new frontier in translation studies, it became a necessary preoccupation for most TPR scholars to contemplate and critically examine how these new digital research instruments could be better adopted in TPR and what they meant in the field as a whole (See Jääskeläinen 2011).

Another possible reason was that this was also a time when notions of the first generation cognitive psychology (in contrast to notions in the second generation cognitive psychology) were prevalent in the field of psychology itself. At the time, cognitive psychologists were largely ‘deal[ing] with the mental processes between the occurrence of a stimulus and a behavioural response.’ (Reber 2019: 25). They assumed that the human brain resembled a computer and postulated that human cognition consisted of three components: input (i.e. stimulus), central processor (i.e. memory system) and output (i.e. behaviour). Incidentally, this

was exactly how most eye tracking experiments were modelled upon, i.e., stimuli, eye movement, behaviour. The research focus was on understanding the less observable mental process or cognition that occurred within the central processor. This was also why in TPR, the research efforts largely centered around exploring the ‘black box’ (Holmes 1988: 72), i.e., cognition, and its corresponding and consequential behaviour.

To sum up, there are several possible reasons why the study of affect and emotion still lies in the periphery when digital research instruments were first introduced to TPR. It was partly due to the fact that TPR scholars were pre-occupied with the initial adoption of digital research methods and how such methods could be better utilised for the investigation of translation cognition (to a lesser extent) and translation behaviour (to a larger extent). In a wider context outside translation studies, this was also a period when the predominant concept of cognitive psychology, from which TPR regularly borrowed concepts and research methods from, largely subscribed to the triad of stimuli, cognition, and behaviour.

4. Translation emotion at the turn of the century and beyond

As mentioned before, behaviour and cognition were two pivotal themes constantly investigated by TPR scholars. This was why the translation process was often referred to as a cognitive activity, strategic behaviour or cognitive behaviour (see Jakobsen 2017). For many years, such terminologies revealed a taken-for-granted and underlying assumption in TPR, which was that behaviour represented a direct result of cognition. However, at the turn of the century, some TPR scholars began to seriously question this assumption: was this really as straightforward as it was assumed to be? Could a behaviour be the result of physical discomfort, reflex, or even mere reflection of one’s emotional state? Did translators’ decisions always make logical sense?

Did we assume that because the (more observable) behavioural data were collected at the same time as the cognitive ones, they must explain and compliment each other? All these assumptions were probably right, to a large extent. But what they did not account for was other underlying factors, i.e., affective ones that may be at play during the translation process. In other words, some TPR scholars began to consider translation affect and emotion in addition to behaviour and cognition.

On the one hand, this was also a time when cognitive psychologists gradually moved away from the ‘classic’ analogy of viewing human brain as a computer, known as the first generation cognitive psychology, and shifted towards motivation and emotion, arguably the driving force behind human cognition and behaviour (Reber 2019: 40-58). Parallel to this, in TPR, Muñoz Martín proposed a model or as he preferred to call it, ‘a paradigm of cognitive translatology’ or 4EA, which stood for embodied, embedded, extended, enactive and affective approaches (See Muñoz Martín 2010a, 2010b, 2016: 1-20). What Muñoz Martín has done was to advocate an encompassing and paradigmatic archetype for TPR that incorporated concepts from the second-generation cognitive psychology, e.g., embodied cognition, situated cognition and distributed cognition, etc. (see Clark 1997; Wheeler 2005), as opposed to those of the first generation cognitive psychology. For example, the concept of embodied cognition was essentially linking the study of mind (i.e., cognition) and the study of a physical body (i.e., physical brain). This was in fact the most important theoretical foundation for a new sub-discipline in psychology, cognitive neuroscience. This will be referred to later due to its methodological significance to the study of emotion. In the same vein, the concept of situated cognition indicated that cognition should be considered in situ or in its situated environments, which was connected to the ethnographic approach in TPR (See Risku 2017). Similarly, the extended and enactive cognition emphasised the sociological aspect of translation activities

which included the use of external tools and resources, such as the ergonomical approach in TPR (see Enrensberger-Dow 2017). Even though Muñoz Martín did not explicate at length about the A (i.e., affect) in his 4EA paradigm, the fact that it was included in a marked position at the end of the 4EA revealed a tell-tale sign of growing interests in affect and emotion in TPR. These growing interests have been manifested by a swathe of more recent studies that tapped into translators' personality traits (Hubscher-Davidson 2013), emotional intelligence and regulation (Hubscher-Davidson 2016, 2018; Hubscher-Davidson and Lehr 2021), positive/negative effects of emotions on translation (Lehr 2014a, 2014b; Rojo & Ramos 2016), effects of emotional texts on the allocation of cognitive efforts (Lehr and Hvelplund 2020), and resilience and coping strategies of subtitlers (Perdikaki and Georgiou 2023), to name a few. All these studies (the most important of which will be reviewed in detail later in this section) have rooted strongly in the concepts of motivation and emotion in psychology.

On the other hand, in terms of the digital research instruments used, more recent TPR scholars have begun to venture into many newer varieties of digital research instruments used in psychology and its adjacent disciplines, from neurological, e.g., fMRI, fNIR, EEG (See Tymoczko 2012; Ren et al 2019; Zheng et al 2020) to physiological ones, e.g., ECG, EDA/GSR (See Gieshoff, Lehr and Heeb 2021) and even facial expression analysis software. While these digital research instruments can be used to further examine translators' cognition and behaviour or indeed the intertwining relationship between the two, they also open up an excellent platform to step into the study of emotion, as many of these instruments, particularly the physiological ones, are known to be typical measurement for emotions in psychology. For instance, emotional arousal (high vs low) can be readily measured through bodily reactions (Zachar and Ellis 2012). The basic assumption behind this type of measurement is that the cognitive and behavioural process, particularly the one with salient emotion, manifests itself through

physiology (Cacioppo et al 2007: 14). For example, pupil dilation (elicited from eyetrackers) is believed to be linked to one's emotional response. Similarly, skin conductance (e.g., electrodermal activity, i.e., EDA or sometimes known as Galvanic Skin Response, i.e., GSR) and cardiovascular biomarkers (e.g., heart rate, blood pressure) can all be used to measure the level of emotional arousal. Given the varieties of digital research instruments available, there has never been a better time for TPR scholars to tap into the study of emotion. Interestingly, a recent survey is done on existing research in translation and interpreting studies associated with stress, emotion or ergonomical demands using physiological instruments (Gieshoff, Lehr and Heeb 2021). While many of the studies can be considered interdisciplinary rather than translation and interpreting studies per se, the result from this survey suggests that a majority of these studies focuses on 'cognitive demands', and the most common physiological measurement adopted is pupil dilation (via eye trackers). This shows that while there are gradually more and more interests in studying translation affect and emotion using more varieties of digital research instruments, the use of eyetrackers and its relevant metrics (i.e., pupil dilation) still dominates the research landscape in TPR so far.

In contrast to the physiological instruments, the use of neurological instruments, such as EEG, fMRI and fNIR, are based on an entirely different theoretical assumption. This assumption is rooted in cognitive neuroscience, a relatively new sub-discipline, a cross between cognitive psychology and neuroscience. As Dolan (2002: 1191) puts it,

Emotion is central to the quality and range of everyday human experience. The neurobiological substrates of human emotion are now attracting increasing interest within neurosciences motivated, to a considerable extent, by advances in functional

neuroimaging techniques. An emerging theme is the question of how emotion interacts with and influences other domains of cognition ...

Dolan's statement above explains the emergence of 'cognitive neuroscience' and its increasing interests in emotion. Cognitive neuroscientists believe that the human brain is a biological and physiological representation of the human mind and cognition. In fact, some scholars call the brain 'wet mind' (Kosslyn and Koenig 1995). In other words, the brain and the mind are two sides of the same coin. One cannot understand human cognition fully without understanding its physiological and neurobiological construct and functions. TPR's recent adaptation of neurological instruments very much reflects this latest development in psychology, particularly in relation to the way interaction between emotion and cognition may be detected in human brain (see Seth and Barrett 2007; Storbeck and Clore 2007), although to the best of my knowledge, it is still very early days, given research is scarcely done on translation affect and emotion per se using neurological instruments so far.

While the use of more varieties of digital research instruments offers promising avenues to study translation affect and emotion, it is not the only route to study emotion in TPR. In fact, one of the first monographs on emotion in TPR focused on the use of psychometric tests to study translators' emotional intelligence. In her monograph, *Translation and Emotion: a Psychological Perspective*, Hubscher-Davidson (2018) employed TEIQue test, which identified translators' personality traits in relation to their emotion perception, emotion regulation and emotion expression. She then attempted to link these traits to professional translators' job profiles, job satisfaction and career success. One of her key findings was that the length of literary translators' experiences, their emotion intelligence and their job satisfaction were somehow correlated.

Methodologically speaking, the use of IQ-styled psychometric tests as a research instrument may initially raise an eyebrow in TPR, probably due to potential mis-preconception about psychometric tests represented in the popular culture. Yet, it proves to be a unique methodological vantage point in connecting emotion, behaviour and cognition. There is also evidence to suggest that this methodology has inspired new generations of researchers to adapt psychometric tests in their own research design in translation studies (e.g., Coban 2019).

In relation to the personality traits, Hubscher-Davidson (2018) utilised the concept of ‘emotional intelligence’ as a trait (or psychological competence) that could be trained and harnessed by professional translators to enhance their wellbeing and to deal with potential difficulties faced in their professional and personal lives. With the global pandemic we all faced in recent years, the positive value and implications of emotional intelligence has never been more timely for translators’ professional development and training. The introduction of ‘emotional intelligence’ represented the most significant contribution about emotion to date in TPR. This term was first coined by psychologists, Salovey and Mayer (1990). It was then popularised by Goleman (1995) in his best-selling book bearing this term in its title. The central notion of emotional intelligence is that (deliberate) awareness, intelligent appraisal (i.e., cognition) and subsequent control of one’s emotion could regulate and lead to better behaviour. This was a very empowering notion, given its implication that a translator could be potentially trained to grasp such skills or competence, as demonstrated by Hubscher-Davidson and Lehr in their new book, *Improving Emotional Intelligence of Translators* (2021). They cited the method of ‘cognitive behavioural coaching’ (CBC) and its associated ABCDE model, originally developed by Albert Ellis (Carvalho et al 2018: 123; cf Hubscher-Davidson and Lehr 2021: 56). This model was essentially a way ‘to enhance awareness of one’s unproductive

emotions and beliefs and remove these barriers so as to help achieve one's goal.' (ibid: 55) The A refers to Activate an event or situation, B Belief, C to Consequences, D Dispute and E Exchange. This model was later extended to include an F, which refers to Future. In the same book, Hubscher-Davidson and Lehr also reported a single subject case study demonstrating how CBC might work in practice for an in-house professional translator as a coachee.

Incidentally, a more well-known psycho-therapeutic method than CBC is called 'cognitive behavioural therapy (CBT)' (Beck 2011: 12). Widely researched and practised in clinical psychology, just like CBC, the way CBT works is that it breaks the vicious cycle of negative thoughts so that emotion and behaviour can follow suit for the better as a result. Both CBC and CBT subscribe to a fundamental notion in psychology, namely, emotion, cognition and behaviour interact closely and constantly in a tripartite model. I believe that this tripartite model can be used to conceptualise what TPR scholars should strive for in the future. In other words, TPR should aim to demystify translators' affect (A), behaviour (B) and cognition (C) as a whole. As TPR continues its journey to maturity, it should not just aim to shed more light on 'affect' as a seemingly isolated subject of investigation, which is still relatively under-researched so far, but perhaps more importantly it should focus on how and to what extent each of the three components contributes to translators' work and how they interact with or even potentially compete with each other. Without doubts, there are so many questions yet to be answered in this regard. For instance, how does cognition affect translators' emotion and behaviour, particularly in the context of emotional intelligence? How does emotion affect translators' cognition and behaviour, not just when translators are translating emotional texts? Do interactions among affect, behaviour and cognition differ in different contexts and situations? To what extent does emotion impair translators' cognition and behaviour?

Ultimately, only by asking and answering these questions, are we able to sketch a fuller and richer picture of how and why translators think, feel, and behave the way they do.

Finally, it is useful to point out that in psychology, newer neurological research instruments can be used to re-examine previous theories about cognition. For instance, in a neurological experiment that is designed to prove that emotion is constructed in a two-way process, i.e., bottom-up and top-down processes, as assumed in the first generation cognitive psychology (Ochsner et al 2009), participants are asked to conduct two tasks. One is a stimulus-triggered, i.e., bottom-up process, with photographs showing adversative events. The other is an appraisal process, i.e., a top-down process, with photographs showing neutral events but asking participants to think about adversative events. The brain imaging results show that these two processes activate different parts of the brain, proving that these two processes exist independently. While there are many appraisal theories in psychology, it is generally agreed that the top-down process or a conscious and deliberate appraisal process is an important factor in determining one's emotional state and outcome (Eysenck and Keane 2005: 637-648). This is also an example of how neurological research can be used to inform our understanding about emotional construct and to reinforce the wide application of therapeutic methods, such as CBT, CBC and the concept of emotional intelligence/regulation as adopted by Hubscher-Davidson and Lehr (2021) from psychology to translators' continuous professional development.

5. Affect and emotion

So far, researchers have used both the terms, affect and emotion in TPR. As shown in the previous sections, the term affect or affective factors was first used in the 1990s but more recently the use of the term emotion appeared to be more in favour. Hubscher-Davidson (2018:

11-12) claims that she does not wish to distinguish the terms ‘affect’, ‘emotion’ or ‘feeling’, even though she seems to use the term ‘emotion’ more than the other two terms in her publications. While categorically outside the sub-discipline of TPR, Koskinen (2020) in her monograph, *Translation and Affect*, put forward an extensive argument with regard to why she prefers to use the term ‘affect’ over ‘emotion’. She contends that ‘affect’ is a broader term that ‘can function as ... [a] bridge concept, crossing over the various orientations in translation studies and also cutting through different contexts and modes of translatorial action.’ (2020: 3)

When contrasting these two major monographs respectively by Koskinen (2020) and by Hubscher-Davidson (2018) in translation studies, I have found that the former positions itself in the context of cultural studies and social science, and the latter in TPR, psychology and natural science. The disciplinary division probably explains the reasons and preference for the choice of the terms in each monograph. Interestingly, in psychology, just like what Koskinen has argued, affect is considered to be a more holistic concept that encompasses both emotion and mood (Eysenck and Keane 2005: 636). To be more precise, emotion is a more intense and immediate reaction to a given situation whereas mood or feeling is considered to be a potentially more mellow and prolonged state of mind. As a result, it can be more difficult to measure or gauge into (the reasons behind) mood than emotion. This is why it is generally easier to measure and detect emotion in psychological experiments. Generally, emotional construct is understood to consist of two dimensions: valence and arousal. Valence refers to a spectrum of emotional state from being very positive to being very negative and arousal refers to the intensity of emotional response. As mentioned before, many physiological research instruments, such as EDA, GSR or ECG, etc. can only measure the arousal, i.e., the intensity of emotional response rather than the valence of emotion. A triangulation of other research instruments (such as facial expression or retrospective interview) is therefore often required to determine the type of emotion or the valence of the emotion. This may be an important

consideration for future TPR researchers when designing studies with physiological instruments. To put it in another way, given the magnitude of intensity and temporality in emotion measurement, it is crucial to carefully plan the suitability of relevant stimuli so that enough emotional responses are triggered. Otherwise, an experiment could run into the risk of collecting little data and producing inconclusive results. This in itself exposes some inherent limitations of physiological research instruments (and indeed many other psychological instruments) as research methods. First, it may not be possible to capture every single type of emotion, particularly when the intensity of emotion is less prominent. Second, ecological validity may be compromised, given strict controls of stimuli, variables and experimental conditions are required in order to generate valid and reliable data (See Shih 2023).

While the reasons behind the use of the terms, affect or emotion, in each of the two monographs as mentioned previously, are entirely understandable, I am more inclined to agree with Koskinen (2020) that affect may serve as a more general concept in translation studies as a whole. Affect can certainly be a concept that goes beyond TPR, while emotion serves as a fitting notion of operational values particularly in empirical studies and experiments in TPR. Interestingly, while drawing attention to Clough and Halley's (2007) affective turn in cultural studies, Koskinen (2020: 7) states that she is not about to declare an 'affective turn' following the cultural turn in translation studies. I am, however, more optimistic about an 'affective turn' we are beginning to witness in TPR. Just like the early evolution of TPR as a sub-discipline when process was once upon a time investigated independently from product and later alongside product or performance using multi-method approaches, I envisage that it will become more and more difficult to simply ignore affect and emotion from behaviour and cognition in TPR studies, given modern psychology has informed us that affect, behaviour and cognition are not only inseparable but also constantly and dynamically interacting with each

other. With the advancement of psychological research instruments, TPR researchers are in a better position than ever before to take stock of the latest research instruments to examine when, how and why translators and their associated agents, including both human and digital ones (i.e., translation technology) interact with each other. But it has to be noted that when these research instruments become increasingly more sophisticated, it may be more and more difficult for TPR scholars to simply ‘do it alone’ by borrowing research instruments from other disciplines. Instead, TPR scholars will have to learn to work alongside psychologists, neurologists, computer scientists, statisticians, etc. in order to move forward in this sub-discipline.

6. Concluding remarks

This chapter has set out to unpack the evolvment of affect and emotion in TPR and its alignment with TPR’s methodological development as a sub-discipline in translation studies. This evolvment was also viewed from a wider context of advancement in cognitive psychology. It started off by tapping into the earliest research method, TAP, borrowed from cognitive psychology and its relevance to the investigation of affect or ‘affective factors’ when TPR was in its infancy. It then drew attention to the period when early digital research instruments, such as keylogging and eyetracking software, are first used in TPR where research on behaviour and cognition appear to be tangled together. On the outset, this period was also a time when notions in first generation cognitive psychology, including the trinity of stimuli, cognition and behaviour, were more prevalent. This was likely to be another reason why TPR scholars were largely preoccupied with cognition and its corresponding behaviour, rather than affect. But, at the turn of the century, when TPR began to embrace an explosion of many newer forms of digital research instruments, such as neurological and physiological instruments,

scholars began to recognise that affect and emotion may be the underlying link between cognition and behaviour. This was parallel to the latest development of the second generation cognitive psychology where human cognition cannot be understood without its environments, social contexts, physical bodies and perhaps more importantly, affect. Among the recent studies on emotion, Hubscher-Davidson's introduction of emotional intelligence and emotional regulation was discussed at length, given its pioneering importance in the study of emotion in TPR and in translation studies. Finally, reasons behind the use of the terminologies, affect and emotion were explained. It was suggested that affect could be considered to be a more holistic notion whereas emotion a more operational one, particularly in empirical experiments in TPR.

To summarise, studies of translation affect and emotion have evolved from idiosyncratic and evaluative comments in early TAP studies from the periphery to the centre of investigation where translation emotion is examined as an independent research theme. Koskinen (2020: 55) explains eloquently why it is more and more important to focus on translation affect in translation studies,

.. translation work will gradually shift towards an increased dominance of argumentative, persuasive and creative texts rather than technical and repetitive kinds of documents. This warrants the study of affect, as hitting exactly the right tone and affective valence cannot be left for the machine to figure out.

I will go one step further to state that while TPR should of course aim to study translation affect and emotion in all its glory, bias, and weakness in the short to medium term, it is even more pertinent to understand translation as a holistic phenomenon incorporating analysis from the affective, behavioural and cognitive perspectives in the longer term. This resonates with the

4EA concept advocated by Muñoz Martín, which moves away from the information processing model or brain-as-computer analogy and moves towards a holistic view of seeing translation in its embodied, embedded, enacted, extended, and affective contexts. Wherever possible, it may merit a revisit to some of the previous TPR studies with the lens of affect and emotion in mind.

Psychology as a discipline is sometimes seen as a cross between social science and natural science. Similarly, TPR is also in a unique position in translation studies where it can push the boundary and bridge the divide among humanity and natural science. This is particularly true with the latest adoption of neurological and physiological research instruments in TPR research. There is no doubt that TPR scholars will continue to face challenges in selecting, adapting and customising suitable research instruments and research designs from adjacent disciplines for the purpose of investigating the translation process. I share the same sentiment with Hubscher-Davidson (2018: 221) that it is high time for TPR scholars to have a direct dialogue with psychologists rather than simply having a monologue among ourselves. Going back to the conversation I had with the psychologist who partly inspires me to write this chapter, I know that this would not be the last conversation I had with colleagues in psychology.

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