Mindfulness training for conference interpreters

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Introduction

A small but growing number of interpreting researchers are taking an interest in mindfulness. So are graduate interpreting students themselves. Evidence suggests that mindfulness practice can strengthen a number of interconnected abilities central to interpreting, such as metacognition and self-regulation of attention and emotion. In this way, mindfulness training may help working and student interpreters alike perform at their best, develop expertise, and experience greater interpreting-related wellbeing.

Mindfulness refers to awareness of what one is experiencing in the present moment with an attitude of acceptance and non-judgement. This quality of awareness is typically cultivated through meditation: purposely being still and dropping into one’s body so as to intentionally notice and fully experience the present moment. In that stillness, mindfulness is generally practised through two types of meditation: Focused attention (intentionally directing one’s attention to the breath and gently bringing it back whenever it wanders), which settles the mind and steadies attention, and open monitoring or open awareness (noticing and accepting the fact of whatever sensory perceptions, thoughts or emotions may arise, without getting caught up in them or judging them as good or bad (Cásedas et al. 2020). Like interpreting, mindfulness is a skill developed through sustained practice and experience of the effects of that practice. Mindfulness training programmes are thus typically at least one to two months long, combining teaching, guided meditation, discussion, and regular home practice.

Several research trends may explain the emerging interest in mindfulness in relation to conference interpreting: increasingly holistic perspectives in interpreting studies, empirical evidence of the effects of mindfulness practice, and the insights and confirmatory evidence afforded by advances in neuroscience. A growing body of interpreting studies research has revealed a number of ‘underlying’ (Johnson 2016) or ‘subtle’ (Albl-Mikasa 2014) abilities and mechanisms involved in expert performance and how novices learn to interpret. These include, among others, self-regulation of attention and emotion, metacognitive awareness, intuitive decision-making, acceptance, self-compassion and empathy. Mindfulness research provides compelling evidence that mindfulness training supports and strengthens these very abilities.
This chapter introduces mindfulness and conference interpreting as an emerging field of inquiry that examines the effects of mindfulness training on cognitive load, self-regulation, performance and expertise. First, I review what we know about cognitive processing and working memory in interpreting, the interactions between cognitive and emotional demands, the role of self-regulation of attention and emotion, and the implications of these interactions for learning, performance and expertise. Next, I provide an overview of the mindfulness constructs, models, research issues and findings on how mindfulness training affects self-regulation of attention and emotion and structurally changes the brain. I then present the one theoretical model thus far proposed of how mindfulness training may affect performance and interpreting-related self-regulation of attention and emotion, and the empirical research to date specifically on mindfulness and interpreting. The chapter concludes with promising directions for future research in this domain.

Attention and emotion in interpreting

Through a half-century of conference interpreter training and interpreting studies research, our field has come to a holistic appreciation of what expert interpreting actually involves. Early linguistic-transfer models of the 1960s gave way to information processing models in the 1970s, and then to cognitive and cognitive-adaptive models that account for self-regulation. As noted in the chapter on expertise (see Moser-Mercer, Chapter 28, in this volume), the development and maintenance of expert levels of interpreting performance rest not just on talent and practice, but also on such underlying psychological factors as motivation, focus and perseverance. Clearly, information-processing models of interpreting do not suffice. Borrowing the early conduit metaphor of interpreting, I might put it this way: There is recognition that the ‘black box’ of the interpreter through whom cross-lingual communication flows is not empty, neutral or static. Understanding, perception, expression and situational action necessarily form through the lens of the interpreter’s personal knowledge, experience and perspective in interaction with others (Albl-Mikasa 2020). Also, a complex and ever-changing internal ecosystem of mental, emotional and physiological states inevitably influences the clarity of the channel. It thus behoves us to examine and understand such inter- and intra-personal (internal) dynamics at play when one is actively interpreting. Rich threads of research in these directions already exist (Albl-Mikasa 2014; Herring 2019). This chapter focuses on the intra-personal aspects of interpreting, particularly metacognitive awareness and embodied self-regulation of attention and emotion.

Attention in interpreting

Interpreting research on attention took a practical turn in the 1990s with Gile’s ‘Effort models’, which identify the various efforts involved in simultaneous (Gile 1995) and consecutive (Gile 1997) interpreting and characterize interpreting as a cognitive management problem. Gile highlights the need for attentional control to balance these various efforts, given the limitations of human processing capacity. His ‘tightrope hypothesis’ proposes that many errors and omissions arise not because the source discourse is intrinsically difficult but because interpreters work at near-saturation of their capacity (Gile 1999). Findings show that, when experiencing mental overload, even expert interpreters become careless in their performance and less reliable judges of the quality of their own output, and that this seems to happen automatically without them noticing (Moser-Mercer 2000).

Attention is thus central to simultaneous interpreting, which is now understood to hinge on the central executive functions of memory that direct attention and control and coordinate
voluntary processing (see Hodzik & Williams, Chapter 26, in this volume). Sustained attention, attention switching, and other aspects of executive functioning have been widely researched in interpreting studies and found to evolve with experience (see, e.g. Liu et al. 2004; Mellinger & Hanson 2019; Timarova 2012; Wen & Dong 2019). There is also emerging evidence that interpreting flows most effectively when the interpreter is in a more receptive than active mental state and relying on a balance of intuitive and rational decision-making (Albl-Mikasa 2014; Hostettler & Keller 2015).

**Stress in interpreting**

Among other psycho-affective factors, researchers have particularly focused on the stress inherent in conference interpreting (e.g. Cooper et al. 1982; Dornic 1977; Korpal 2016; Kurz 2003), the positive and negative impacts of stress on attention and cognitive processing (e.g. Ferrer Fabregat 2018; Johnson 2016; Renois 2016), motivation (Renois 2016) and self-efficacy (Ferrer Fabregat 2018; Jiménez Ivars et al. 2014).

The research on stress in interpreting has previously been reviewed (see Johnson 2016). Here I will highlight just a few studies that have particular relevance for issues of mindfulness (see also Korpal, Chapter 29, in this volume). Kurz (2003) used pulse rate and skin conductance levels to comparatively measure the stressfulness of simultaneous interpreting in experienced conference interpreters and student interpreters (experts versus novices). She found that some student interpreters experienced more stress in a low-stakes classroom setting than experienced interpreters during a difficult, high-stakes assignment. More recently, Korpal (2016) also found that increasing the speaker’s speed of delivery during a simultaneous interpreting task significantly increased students’ stress, as measured by heart rate. In testing students’ frequent claim ‘I failed because I was nervous’, Jiménez Ivars and Pinazo Calatayud (2001) found significant correlations between state anxiety and consecutive interpretation exam performance.

The repercussions of stress and stress responses on cognitive functioning and interpreting performance, however, can also be positive, as clearly stated over a century ago in the law formulated by Yerkes and Dodson (1908). In short, performance improves with physiological or mental arousal, but only up to a point. When levels of arousal become too high, performance suffers.

For example, in one fairly recent Master’s thesis study, half of the graduate interpreting students reported experiencing their stress as predominantly negative (blocking) and half as predominantly positive (helped them advance and improve) (Renois 2016). Another study (Ferrer Fabregat 2018) examined stress (both positive and negative) and self-efficacy in undergraduate students in a compulsory introductory interpreting course. Students reported both positive anxiety that helped them be alert and perform better and negative anxiety that caused them to struggle more, perform worse, and that lingered afterwards (Ferrer Fabregat 2018). About two-thirds of these same students reported feeling lower self-efficacy when it came specifically to interpreting. Ferrer-Fabregat suggests a relationship between self-efficacy and stress: Novice students tend to lack confidence in their ability to interpret, this perception of low self-efficacy is stress-inducing (negative state anxiety), which in turn causes them to struggle and perform poorly, and perpetuates low self-efficacy related to interpreting.

In short, conference interpreting involves multiple stress factors that naturally elicit mental and physiological stress responses. Whether or not those responses positively or negatively impact performance appears to depend largely on one’s relationship to them, that is, how one interprets (appraises) the experience of stress and what one does with it.
**Emotion in interpreting**

Here it is important to highlight the interrelationship between the cognitive and emotional demands of interpreting. The central executive component of working memory orchestrates analytical reasoning and also manages emotions, desires and impulses (Feltz & Lirgg, 2001). In a study comparing self-regulation in expert and novice interpreters, Hild (2014) concluded that the attentional efforts (cold cognition) and emotional experience (hot cognition) of interpreting are intertwined and compete for limited attentional resources all regulated by the central executive function of working memory. She also found that expert interpreters had much more developed metacognitive and self-regulatory abilities, employing self-observation (mostly focused on monitoring accuracy) and emotion-regulation to optimize their performance. There were no instances of negative affect such as self-dissatisfaction or frustration. When the experts realized they had made an error, they were able to quickly re-focus on the task at hand. In contrast, the novices’ self-observations focused mostly on negative emotions (confusion, frustration, guilt, even distress) and self-criticism. As Kurz summarizes, “[t]he novices experienced difficulties in coping with the stress and in modulating the intensity of the responses evoked by their own suboptimal performance” (2003: 138) (see also Korpal, Chapter 29, in this volume).

**Self-regulation in interpreting**

Self-regulation, viewed broadly as including metacognitive, motivational and affective processes that control aspects of human behaviour, such as “keeping … one’s attention focused on a task or inhibiting irrelevant thoughts and emotions” (Hild, 2014: 130), thus does appear to develop with interpreting experience and constitute an aspect of expertise. However, that does little to help students just learning to interpret.

Pointing to the specialized literature, Herring defines self-regulation as involving two closely connected processes: *monitoring* and *control*. She describes real-time or ‘online’ *monitoring* during performance as “the mechanism by which the need to adjust or modify some aspect(s) of performance is detected” (Herring, 2019: 285) and *control* as the mechanisms of actually making those adjustments or modifications. This suggests that students may benefit from practices that enhance their ability to observe and adaptively respond in the moment to what is happening as they are interpreting.

To summarize, the quality of interpreters’ performance (and their own experience of interpreting) can only benefit from greater awareness of their own internal mental and emotional states and attitudes and a greater ability to regulate them. This explains a relatively new turn in interpreting studies as researchers aim to go beyond the descriptive to examine how interpreters (novices in particular) can build the attentional abilities and emotional stability they need to interpret effectively (Johnson, 2016). The question is, what might help student and experienced interpreters alike to notice what is happening in their own mind and body and intentionally respond in ways that will support their interpreting performance and well-being? In other words, how can they gain a sense of agency and not fatalistically assume that such factors are beyond their control, or figure they have to just wait for them to develop some day? Greater metacognition, awareness and self-regulation of attention and emotion can be learned. The following review explains why interpreting researchers have become interested in mindfulness training as a compelling approach that seems to strengthen and support these domain-general abilities.
Mindfulness: constructs, models and findings

The term ‘mindfulness’ originated as a translation of the Buddhist concept of *smṛti* (in Sanskrit) and *sati* (in Pali), the “capacity to retain an object in the mind”, and the present-moment attentive awareness this capacity implies (Guendelman et al. 2017). Mindfulness-based interventions gained traction in the West in the 1980s particularly as empirical evidence of beneficial outcomes emerged from the eight-week Mindfulness Based Stress Reduction clinical programme (commonly known by its acronym, MBSR) developed by Jon Kabat-Zinn in the late 1970s. Mindfulness Based Stress Reduction originally aimed to help relieve suffering associated with pain, stress and illness in patients deemed terminal at the University of Massachusetts Medical Centre (Kabat-Zinn 2003). It has since become a common form of complementary medicine and mental health therapy and widely implemented in workplaces, the military, sports, and education, from primary school to higher education.

In the context of Mindfulness Based Stress Reduction and similar mindfulness-based interventions, ‘mindfulness’, as a construct in Western psychology, has come to mean paying attention to one’s present moment experience on purpose and without judgement (Kabat-Zinn 1994). In 2004, a group of psychologists operationalized the construct as involving two components: (1) “self-regulation of attention so that it is maintained on immediate experience”; and (2) adopting an orientation of “curiosity, openness and acceptance” towards that present-moment experience (Bishop et al. 2004). A single definition of mindfulness has nevertheless remained somewhat elusive as researchers endeavour to reconcile traditional Buddhist conceptualizations of mindfulness with those of Western mindfulness-meditation (Khoury et al. 2017) and to disambiguate the construct from psychologist Ellen Langer’s use of the term ‘mindfulness’ as meaning ‘the simple act of actively noticing things’ (Langer 1989), without any relation to meditation. Additionally, the construct varies, depending on whether it is being used to refer to mindfulness as a trait, state or practice.

**Trait (or dispositional) mindfulness** is a mental trait or stable characteristic of personality, which can vary between and within individuals across time (Guendelman et al. 2017). It is influenced by genes, biology and experience, and has been found to positively correlate with emotion and attention regulation (Creswell et al. 2007). Multiple validated self-report scales operationalize mindfulness as a trait. Variations in dispositional mindfulness are studied through cross-sectional surveys in healthy populations. These variations are then correlated with other variables of interest, such as personality traits, affect and mood, behaviours, medical and mental conditions, or treatment outcomes.

**State mindfulness** refers to an individual’s subjective experience of “receptive attention to and awareness of present moment events and experience” (Brown et al. 2007: 212) in a particular context and moment in time. It, too, is typically measured with self-report scales, and correlated with task performance and other psychological states and traits (e.g. perceived stress, performance anxiety, positive and negative affect, self-efficacy).

**Mindfulness as a practice** refers to concrete engagement in mindfulness meditation aimed at strengthening the qualities of mindful awareness. Mindfulness practice primarily includes focus meditation to settle the mind and stabilize attention, and open monitoring, that is, noticing— with open curiosity, kindness and acceptance—whatever sensory perceptions, thoughts or emotions may arise (Shapiro et al. 2006). Mindfulness practice also includes exercises aimed at integrating mindful awareness into one’s daily life (e.g. intentionally paying full attention to the sensory experience of a usually automatic activity, like brushing one’s teeth).

The two most referenced psychological models of mindfulness were proposed in 2006. The simplest, based on mindfulness as a practice, proposes that the therapeutic effects of
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Mindfulness practice occur through changes in intention, attention and attitude (Shapiro et al. 2006). According to this model, intentionally attending to observation of one’s present-moment experience with a heart-quality attitude of openness, acceptance and kindness leads to a significant shift in perspective. The greater clarity, objectivity and disidentification from one’s thoughts that come with this ‘reperceiving’ in turn lead to behavioural change and positive outcomes. A similar but more granular model of mindfulness proposes five factors: observing, describing, acting with awareness, non-judging of inner experiences and non-reactivity to inner experiences. These factors constitute the subscales of the Five-Facet Mindfulness Questionnaire (Baer et al. 2006). Neurocognitive models of mindfulness have also been proposed. These are based on neuroimaging evidence of the brain structures and neurocognitive networks associated with mindfulness. The model by Hözel et al. (2011), for example, identifies attention regulation, body awareness, emotion regulation and self-perspectives as being among the structures and networks associated with mindfulness.

The body of research on mindfulness and the effects of mindfulness training is now substantial, including several scholarly handbooks and compendiums (Brown et al. 2015; Gaudiano 2017; Toniolo-Barrios et al. 2020). In brief, the evidence base shows a range of physical benefits (e.g. decreased stress-related illness and pain, enhanced immune-system functioning, lowered blood pressure and cholesterol levels, decreased levels of cortisol), cognitive benefits (e.g. enhanced focus and concentration, ability to deal with stressful stimuli, perceptual discrimination, cognitive flexibility, efficient executive processing), emotional benefits (e.g. decreased anxiety, depression, perceived stress, anger, aggression; increased resilience and coping skills, empathy, emotional intelligence and regulation), and behavioural benefits (e.g. better impulse control, decreased reactivity, acceptance of and adaptability to change).

Mindfulness and interpreting

Here I will summarize key mindfulness findings pertinent to attention and emotion, highlight a few studies not discussed in the prior interpreting studies literature and describe a first model of the mechanisms of mindfulness as they relate to interpreting. For more extensive reviews, see Johnson (2016) and Hostettler and Keller (2015), which each trace the interconnections among Gile’s Effort models, cognitive load theory, embodiment theory, expert performance and neuroplasticity as a foundation and framework for exploring mindfulness as applied to interpreter training.

Mindfulness and attention

Empirical studies have shown mindfulness practice to strengthen multiple aspects of attention that are of relevance for interpreting: attentional focus (Tang et al. 2007), sustained attention (Chambers et al. 2008; Jha et al. 2007; MacLean et al. 2010; Semple 2010), perceptual discrimination (MacLean et al. 2010), cognitive flexibility (Moore & Malinowski 2009), and efficient executive processing (Jensen et al. 2012; Tang et al. 2007). Van Vugt’s overview of the cognitive benefits of mindfulness meditation (2015: 191) usefully includes a conceptual overview figure of how the two main forms of meditative practice (focused attention and open awareness) are associated with different parts of the cognitive system.

Various studies have analysed the attentional abilities of experienced mindfulness practitioners compared to control groups using the computer-based Stroop task (Wheeler et al. 2017). Experienced mindfulness practitioners made fewer errors, had less interference, and had better attention control and focus (Moore & Malinowski, 2009; Teper et al. 2013;
Wenk-Sormaz 2005). These improved attentional capacities are associated with greater cortical thickness in brain areas that are involved in attentional control (Lazar et al. 2005). Stroop studies have found that experienced mindfulness practitioners had faster unconscious error detection, and lower emotional reaction to errors (Teper et al. 2013). As discussed by Wheeler et al., “[i]t appears that mindfulness practitioners were not only better able to attend to and detect errors, but were also better able to detach their experience of the error from any emotional reaction associated with making the error” (2017: 1477). Of particular interest for conference interpreting, Kilpatrick et al. (2011) also report heightened auditory discrimination in meditators compared to their counterparts and suggest this may be due to less intrusion from the visual cortices while attending to sounds.

Jankowski and Holas (2020) tested the hypothesis that mindfulness improves attention switching in the presence of anxiety. They had 74 undergraduate women perform a pre-test switching task, randomly assigned them to one of three conditions—brief mindfulness training, worry induction, and free mind-wandering—and then conducted a post-test. Participants in the mindfulness condition showed statistically significant reduced overall reaction times compared with the other conditions. In the context of working memory capacity and processing speed theory, the authors conclude that “mindfulness may release attention resources otherwise engaged in the inhibition of task-irrelevant thinking associated with anxiety” (Jankowski & Holas 2020: 1150). Interpreting researchers will note the connections here with Gile’s Effort models (see Riccardi, Chapter 27, in this volume) and cognitive load theory (see below).

Cásedas, Pirruccio, Vadillo and Lupiáñez (2020) recently conducted a systematic review and meta-analysis of randomized control trials to ascertain whether accumulated evidence supports the claim that mindfulness meditation enhances executive control. They found an overall small-to-medium effect size of mindfulness meditation training enhancing executive control for both working memory and inhibitory control. It should be noted that in most of the studies analysed, participants were novice meditators who had undergone only brief mindfulness training. The authors conclude that mindfulness training may indeed effectively enhance inhibitory and executive control, likely due to reduced mind-wandering. These findings suggest that mindfulness training may help strengthen these cognitive abilities so central to interpreting (see Hervais-Adelman, Chapter 34, in this volume).

Mindfulness and emotion

It is now understood that emotion, once thought to be fixed, can be self-regulated (Wheeler et al. 2017). The effect of mindfulness practice on reducing stress is well established (Garland et al. 2011). Mindfulness meditation appears to help regulate emotions not just through top-down strategies like cognitive reappraisal, but also through bottom-up neurophysiological mechanisms that shift with strengthened direct sensory body awareness (Guendelman et al. 2017). Most empirical studies conducted on mindfulness have used Mindfulness Based Stress Reduction as an independent variable. Not surprisingly, many have focused primarily on stress and related affective constructs. Meta-analyses (e.g. Khoury et al. 2013) have generally shown mindfulness practice to be effective for reducing anxiety, depression and stress, with medium to large effect sizes.

Neuroscience has revealed the mechanisms behind these effects. As summarized by Ott (2013), mindfulness meditation appears to decrease grey matter in the amygdala while increasing it in the hippocampus, thus lessening arousal and strengthening emotional control, situational assessment, learning, memory and neuron production. Wheeler et al. (2017) note that emotion regulation and mindfulness implicate activation of the same areas of the brain.
Furthermore, functional and structural differences are observed in subjects who intentionally practise mindfulness compared to those who don’t. For example, studies measuring the default network when the brain is at rest have found that when meditators are thinking about themselves, processing tends to be more focused on interoceptive sensations being experienced in the present moment compared to the more dominant narrative processing observed in non-meditators (e.g. mind-wandering, rumination about the past, anticipating the future). Is it possible that an interpreter with a quieter, more sensory-attuned default network might more easily access the kind of receptive, intuitive state that conference interpreters have described as integral to their interpreting (Albl-Mikasa 2014)?

A study of 339 adults taking an 8-week mindfulness-based stress and pain management course found the stress-reductive effects of mindfulness to be mediated by positive reappraisal of stressful life events (Opialla et al. 2014). Similarly, a neuroimaging study comparing long-term meditators and people who had never meditated found that the meditators were less reactive to self-criticism and self-praise on the neural level and subjectively reported being less affected by either (Lutz et al. 2016). It is worth noting here the parallels with Hild’s study (2014) in which she found positive appraisal of errors (appreciation of one’s own coping strategies and problem-solving) to be a key characteristic of self-regulation of emotion in expert interpreters compared to novices’ preponderantly negative self-appraisals. Together, these studies suggest that mindfulness training may help novice interpreters progress towards such self-regulation during interpreting tasks.

Model of the mechanisms of mindfulness in interpreting

A first attempt at proposing a model of the mechanisms of mindfulness in interpreting represents the interrelationships of attention and emotion regulation, mindfulness, and interpreting within the framework of cognitive load theory (Johnson 2016). Cognitive load theory identifies three main variables (intrinsic load, extraneous load and germane load) that determine the level of demand (‘cognitive load’) that a task places on one’s capacity-limited processing resources (Moreno & Park 2010). As applied to interpreting, these loads can be described as follows: processing essential to understanding and conveying the message (intrinsic load); any internal and external distractors that do not contribute to comprehending and conveying the speaker’s message (extraneous load); and processing needed to acquire and automate content knowledge and interpreting skills (germane load). As schematically represented in Figure 40.1, experts have the same limited processing capacity as novices, yet the allocation of those resources is different. Having developed extensive schema and automated interpreting skills, experts experience less intrinsic and germane load, and thus can manage more extraneous load without decrements to their performance resulting from cognitive overload.

The theoretical model illustrated in Figure 40.2 shows how mindfulness can reduce the cognitive load of interpreting (and learning to interpret) by reducing extraneous load. These mechanisms, based on empirical findings (Johnson 2016), include shifts in attitude (detachment, self-acceptance and self-compassion) and stronger self-regulatory skills (notice, breathe, refocus).

Empirical studies on mindfulness and interpreting

Only a handful of empirical studies have thus far been conducted on the effects of mindfulness training as applied to interpreting. Of these, some are unpublished Master’s theses. Nevertheless, collectively, they provide a basis for future research and have inspired new studies already underway.
The first study on mindfulness and interpreting compared the attentional effects of relaxation and focus-meditation on interpreting exam performance (Jiménez Ivars & Pinazo Calatayud 2013). The dataset included the consecutive and simultaneous exam scores of 371 undergraduate students batch tested in labs both in simultaneous and consecutive interpretation during the final year of their interpreting program. Students randomly experienced one of three conditions in the booth immediately prior to their exam: (1) listen to an 8-minute focus-meditation recording; (2) listen to an 8-minute guided relaxation recording; or (3) no recording, just a few words of encouragement from the professor before starting the exam (control group). Participants were unaware of the study condition they would experience, but none would come as a surprise since the same focus-meditation and relaxation recordings had been regularly used at the start of each class session all year. The focus-meditation group outperformed both the relaxation and control group. These results, corroborated by a follow-up study (Jiménez Ivars & Pinazo Calatayud 2013), suggest that state mindfulness heightened through brief focus-meditation immediately before an interpretation may improve performance, whereas state relaxation does not.

As an extension of the studies by Jiménez Ivars and Pinazo Calatayud (2013) and Johnson (2016), Faccini Cabrera (2017) conducted a pair of studies for her Master’s thesis. The sample consisted of third-year students studying simultaneous interpretation. Study 1 examined whether students guided in brief mindfulness meditation just prior to their exam would perform better than a control group. As hypothesized, the mindfulness group outperformed the control group (large practical effect size). Study 2 explored the correlations between exam performance and mindfulness, trait anxiety, attention and auditory memory. Based on cognitive load theory and Gile’s Effort models, Faccini Cabrera hypothesized that simultaneous exam performance would negatively correlate with trait anxiety (confirmed), and positively correlate both with auditory attention (confirmed) and mindfulness (partially confirmed). On average, high-scorers in the exam also had the highest mindfulness scores. These results seem to provide further evidence that interpretation performance diminishes with greater anxiety and
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improves with greater attention and mindfulness. The correlations, however, were only rough according to high, medium, and low exam score groupings and would need to be confirmed with more fine-grained analysis.

Other studies have investigated mindfulness in interpreting more broadly. Hostettler and Keller (2015) examined whether mindfulness meditation might support the development of abilities liable to accelerate progression from novice to expert. This question emerged from research on the ‘subtle dimensions’ of expert interpreting, such as stress management, social and emotional intelligence, empathy and intuitive decision-making (Albl-Mikasa 2014).

Hostettler and Keller hypothesized that the increased mental calm shown to arise with mindfulness meditation would give interpreters greater access to their intuition, thereby facilitating progression towards expert performance. To test this hypothesis, they conducted a small quasi-experimental mixed methods case study of the five German-native conference interpreting students enrolled in the same second-semester Master’s-level English-to-German simultaneous interpretation course. The experimental group consisted of the three participants who agreed to take a concurrent 10-week ‘workplace mindfulness training’ (Training Achtsamkeit am Arbeitsplatz, TAA) deemed appropriate for this study because of the high stress interpreters

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**Figure 40.2** Mechanisms of mindfulness in a Cognitive Load Theory model of interpreting
can experience inside and outside of the booth. The training combines mindfulness, relaxation, and leadership principles (Hostettler & Keller 2015).

Within- and between-group differences in interpretation quality were measured using recorded performances during regular interpretation class sessions. These performances were blind scored as ‘insufficient’ to ‘very good’ by an AIC interpreter, together with the researchers, according to eight standard quality parameters (accuracy, completeness, cohesion, terminology, fluidity, style/register, voice/accent/diction/intonation, and overall impression/professionalism/credibility). A questionnaire administered in class immediately after each interpretation performance captured participants’ emotional state, perceived stress, perceived engagement, self-evaluation, problem-awareness while interpreting, strategies employed, and rational or intuitive decision-making. Additionally, open-ended interviews were conducted with each mindfulness training participant.

Although inconclusive, the results of this Master’s thesis study do capture a number of potentially valuable observations that merit further research. All of the mindfulness participants reported greater awareness of their interpretation difficulties and intentional in-the-moment strategies to deal with them. Likewise, they became more aware both of stressors (e.g. speed, accent, topic, speaking style) and their own internal stress reactions (whether habitual or related specifically to source-speech stressors). Furthermore, they took adaptive measures to calm that stress (breathe, calm and deepen voice) and noticed or demonstrated a growing ability to let go of mistakes or rocky bits and focus on what was coming next. Contrary to expectation, these participants generally continued to experience losses of concentration while interpreting. What did change, however, was their ability to notice and accept such lapses and get back on track. Also, they reported being in a primarily passive/receptive mental state during passages that went well. Better interpretation quality objectively correlated with those performances where the participants reported a balance between rational and intuitive decision-making.

There are several plausible explanations for these subtle aspects of emerging expertise. They may simply have resulted from ongoing interpretation training and practice. They were also likely supported and reinforced both by the mindfulness training (focused on intentional present-moment awareness) and by the post-interpretation questionnaire, which prompted the students to metacognitively reflect on specific aspects of their experience interpreting.

Two of the cases are noteworthy. Experimental-group participant P3 was the least skilled among the five student interpreters. Of them all, she made the most consistent improvement over the three performances. She also seemed to benefit the most from the mindfulness training. Although none of her interpretations was assessed as ‘good’, she improved with each performance from unsatisfactory to solidly satisfactory. In the booth she intentionally applied what she was learning in the mindfulness training, finding that she could calm herself, consciously relax under stress, and better deal with difficulties. For her, the mindfulness training and the improvements she attributed to it made all the difference in progressing to adequate performance.

Control-group participant K2 was the most skilled of the five student interpreters. The study describes her as already having shown a talent for interpreting in her exams to enter the conference interpreting track. All three of her performances were consistently very good: accurate, complete, and convincing, with a fluid and pleasant delivery. Her performances also exemplified established and automated strategies and techniques (a hallmark of expert performance). She never consciously worked at cohesion or shifted her décalage or input/output attention split; she likewise did not recall considering the audience, or purposely adjusting her voice or register. Yet her interpretations were cohesive and convincing. K2 was aware of losing concentration at particular moments and consciously dealt with source-speech challenges by focusing
on following the speaker, generalizing, or taking a deep breath and starting in again (problem solving as experts do). Like other participants, she felt mentally passive when the interpreting was going well (which was most of the time), and she always made her decisions half intuitively, half rationally. Interestingly, K2 reported being nervous and stressed during all three interpretations. Those nerves, however, did not impinge on the quality of her interpretation (and may have even enhanced it). For interpreters like her, mindfulness training might not make a noticeable difference in interpretation quality but could help them relate differently to the repeated stress of interpreting and avoid burnout. This would be an interesting question to investigate among experienced conference interpreters.

The Hostettler and Keller (2015) findings are valuable in multiple regards. They suggest that, in different ways, both mindfulness training and pedagogical tools supporting metacognition (like the questionnaire in their study) may help interpreting students progress with greater ease towards expertise. Beyond mindfulness, the findings also provide tentative evidence of a positive correlation between a passive (receptive) mental state, a balance between rational and intuitive decision-making, and optimal performance for any particular interpreter, given his or her current skill level. Furthermore, this study offers a glimpse into what kinds of internal shifts are occurring as an interpreter’s performance objectively moves towards burgeoning expertise (e.g. automatized strategies, selective attention, balance between passive and active mental state).

Johnson (2016) explored the effect of short-term mindfulness training on consecutive interpreting exam performance in a published dissertation study. This mixed-methods study also examined the relationships among mindfulness, stress, aspects of attention and interpreting exam performance. The sample included 67 graduate interpreting students across seven language programmes at the Middlebury Institute of International Studies. The mindfulness (treatment) group \( n = 20 \) included all students enrolled in Introduction to Interpreting into English who also enrolled in the specially developed Mindfulness for Interpreters credit-bearing elective course. The control group \( n = 47 \) included all other students enrolled in the same introductory interpreting course for each of the seven languages. The mindfulness group underwent a 4-week (12-hour) mindfulness training that included home meditation practice, daily-life exercises, and a half-day silent retreat. All participants were administered pretests and posttests for consecutive interpreting exam performance, mindfulness, perceived stress, and aspects of attention. Qualitative data were collected from the treatment group via online weekly logs, a final written reflection and a focus group.

Regular course mid-term and final exams served as the interpreting performance pretest and posttest. The respective professors administered and scored these as they normally would, and reported results using a uniform scale for accuracy and delivery. While there was no statistically significant difference between the groups, students in the mindfulness group did, on average, score slightly higher on the final interpreting exam than on the mid-term, while students in the control group scored slightly lower, there being a small effect size difference in favour of the mindfulness group. The qualitative data suggested that this difference might have been attributable to the greater present-focus awareness, self-compassion, acceptance and self-regulation of attention and emotion that mindfulness-group participants reported having developed. In cognitive-load-theory terms, as illustrated in Figure 40.2, mindfulness training appeared to help these interpreting students optimize their learning and performance by strengthening their self-regulation of attention and emotion and thereby reducing the extraneous load of internal distractors, such as mind-wandering, self-criticism and nerves. In the process, they seem to have developed a sense of agency, an internal locus of control, which has been identified as an important interpreting skill (Hild 2014). Incidentally, the Mindfulness for Interpreters course
developed for this study has continued to be offered every semester since. At this point, over 100 interpreting students, most of them now working interpreters, have taken this training.

The above study was just recently replicated by Hsiao (2020) among undergraduate interpreting students. The aim was to explore whether Johnson’s (2016) results regarding interpreting performance, mindfulness and stress (in this study, ‘interpreting anxiety’) would generalize across different academic systems and cultures. As one would expect with such a small sample (n = 20), no statistically significant difference was found between the experimental group (n = 10) and the control group (n = 10). Hsiao’s results show effect size differences in favour of the mindfulness group on all variables measured. Corroborating Johnson’s results, there was a small difference for interpreting performance (d = .38). Similar to Johnson’s findings, qualitative data associated this difference with students in the mindfulness group feeling more focused and calmer while interpreting and experiencing less anxiety even when the content was fast or complex or they didn’t understand something.

Conclusion

In summary, this chapter has introduced mindfulness training and the mechanisms by which it can strengthen the kind of attentional and emotional self-regulation that interpreting requires. The handful of initial studies reviewed above suggest that stand-alone mindfulness training does transfer to interpreting tasks and can help student interpreters develop some of the attentional and affective self-regulatory abilities and metacognition that characterize expertise. For borderline students, even a small effect can mean the difference between passing and failing, and thus being able to continue along their trajectory towards expertise. The research to date also provides preliminary evidence that state mindfulness induced just before an interpretation can improve performance. Of course, much more research is needed for a solid body of evidence to emerge on the effects, efficacy and mechanisms of mindfulness training as they relate to conference interpreting. One such exploratory study further investigating correlations between interpreting, mindfulness, and stress has been conducted among undergraduate interpreting students at University of Alicante in Spain (Adroher Lluch 2021).

Other research questions also merit investigation: Do the apparent effects of mindfulness training among students persist once they are interpreting professionally? Does it make a difference if they have continued to practise mindfulness or not? Does mindfulness training help experienced working interpreters relate differently to interpreting-related stress and avoid burnout? What is the relationship between internal awareness and self-regulation, and an interpreter’s ability to bring similar awareness and adaptability to the interactive pragmatics of interpretation such as described in Herring (2018, 2019)? Also, self-compassion has been identified as an important aspect of mindfulness in general (Toniolo-Barrios, Brasil & Pitt 2020) but has yet to be examined in depth in the context of interpreting and learning to interpret. Similarly, interpreting studies have investigated the correlation between stress and self-efficacy, but the relationship between self-efficacy and mindfulness or mindfulness training has not yet been examined.

Except for Gile’s Effort models, all of the theoretical frameworks used to date in interpreting studies on mindfulness (cognitive load theory, expertise theory, embodiment theory, and theories from neuroscience) have been borrowed from other domains, which speaks to the complexity of the phenomena involved in conference interpreting. Several other theories and models used in interpreting and mindfulness research, respectively, could be equally enlightening (e.g. self-efficacy, attention control theory, emotion regulation theory, emotional intelligence). Models
developed in one vein of research often shed light on questions in another. This is especially true in the early development of a new domain of inquiry such as mindfulness as it relates to conference interpreting.

In concluding, I would like to highlight conference interpreting as a performative skill which, to be done well, requires a high level of skilled performance in unpredictable situations and in interaction with others who are expecting and relying on one’s “spontaneous, skilful execution” (Schön 1987: 25). This presupposes that the interpreter possesses not only the linguistic and technical skills required, but also the self- and pragmatic awareness to notice, moment-to-moment, exactly what is needed, all with the lightning speed of reflex and intuition. It also presupposes a self-regulatory adaptability to problem-solve and get back on track when things go amiss. Like the domain-specific skill of interpreting, such domain-general abilities can be learned through sustained practice. Mindfulness training for interpreters offers a promising avenue for doing so.

References


Herring, Rachel 2018. “I could only think about what I was doing, and that was a lot to think about”: Online self-regulation in dialogue interpreting. Unpublished PhD dissertation, University of Geneva.


Mindfulness training


