



# **HOW NEUROSCIENCE CAN CONTRIBUTE TO THE APPLICATION OF INTERCULTURAL TOLERANCE, EMPATHY AND COMPASSION**

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### **INTRODUCTION**

“Tolerance”, “empathy” and “compassion” are important concepts in intercultural competence. To a certain extent, they are used liberally and interchangeably. This is because all three concepts partially refer to an approach towards those who are different from a person’s point of view. In this paper, these concepts are critically reconsidered with insights from interdisciplinary studies. Contribution from research in health care and neuroscience provide significant elements to the understanding and application of those concepts.

### **REVISITING TOLERANCE**

#### ***Tolerance definition***

As a concept in the medical field, tolerance implies a diminished response to a drug, generally a toxin or a poison, after repeated uses that make the body adapt to this alien’s presence. Specially, in the Miller-Keane Encyclopaedia and Dictionary of Medicine, Nursing and Allied Health (Saunders, 2003), it is defined as a “decreasing response to repeated constant doses of a drug or the need for increasing doses to maintain response”.

In the same dictionary, “tolerance” is also defined in a more general context as “the ability to bear something potentially difficult”. In its classical sense, tolerance does imply a negative connotation of “put up with”, “endure” and “permit” what we find different, wrong or objectionable. We tolerate what we disagree with, because this attitude is considered critical for living with diversity in values and practices (Vogt, 1997).

#### **The negative implication of tolerance in the context of intercultural competence**

In the context of intercultural competence, tolerance is often regarded as useful implications to view differences within a society, as UNESCO declared it to be “the virtue that makes peace possible”.

However, by referring back to the original meaning of tolerance, it is understandable why this positive view is not shared by everyone.

Firstly, tolerance may imply that we allow living in plurality but not in equality. There is a subtext of hierarchy in which the dominant cultures tolerate the inferior. This goes hand in hand with (un)conscious permissions and laws that limit the rights of others, as one can see in the tolerant tradition of the Ottoman Empire and later in the Republican Turkey (Inset, 2019). Further, Wemyss (2006) pointed out that this inequality means “those higher up that hierarchy of belonging have the power to grant or withdraw tolerance and who is made the subject of that tolerance”.

Next, it’s argued that it is not tolerance that minorities need and deserve. In essence, it is appreciation and respect (Pareck, 2000; Bergsieker et al., 2010; Shnabel & Nadler, 2015). A study from Cvetkovska and colleagues (2020) suggested that tolerance is associated with higher well-being than discrimination, but *lower* than acceptance. Another study with mixed finding is also reported by Bagci et al. (2020), in which the authors showed evidence of the detrimental role of *both* tolerance and discrimination. As Verkuyten and colleagues (2020) argued in their theoretical argument, tolerance and its negative implication can result in complex psychological consequences at the personal, interpersonal and intergroup level.

## **FROM TOLERANCE TO EMPATHY**

### ***Empathy and intercultural competence***

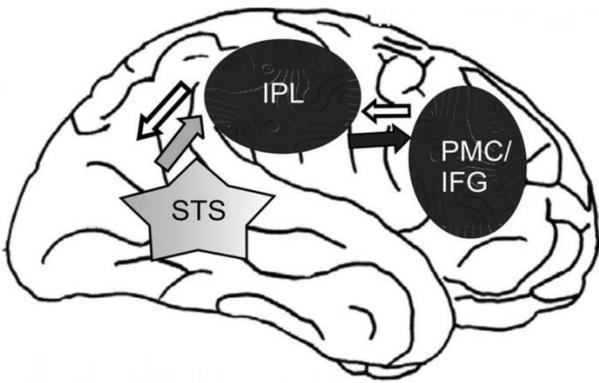
Empathy and tolerance are often regarded as stepping stones to reach each other. For example, people learn tolerance by empathy, “examining their own preconceptions” – a process in which “emotions play an important part in permanent shifts in attitudes” (Monroe & Martinez-Marti, 2016). But it goes the other way around as well, from tolerance to empathy. While tolerance can be seen as somewhat detached position, moving to empathy means a “complete absorption of other’s position” (Shady & Larson, 2010). Taking into account the criticism of tolerance as discussed in the previous session, empathy is promising in the sense that it does not imply inequality and a lack of respect and appreciation. Instead, empathy involves perspective-taking, or as proposed by Theodor Lipps, by “inner imitation” (Montag et al., 2008). This helps us not only tolerate other people’s differences, but also be “one” with their emotional and cognitive perspectives.

Intercultural empathy is often understood in a wider context, with different levels of empathy. For example, Trevisani (2005) defined not only emotional empathy but also relational, cognitive and behavioral empathy. Clark (2010), on the other hand, outlined three forms of empathy as subjective, interpersonal, and objective empathy. Other authors such as Starosta and Chen (2003) referred to empathy as a form of sensitivity. These definitions, as argued by Broome (1991) are not useful in the intercultural context, because of their overemphasis on accuracy, or empathy as a rote set of techniques. While definitions and taxonomy differ, intercultural empathy is generally referred to the ability to imagine the situation of others from an intellectual and emotional point of view, to connect emotionally with other people, showing compassion, thinking in more than one perspective, and listening actively (Deardorff, 2009; Chung & Bemark, 2002; Pedersen & Pope, 2010).

### ***The neuroscience of empathy***

Empathy is a neurobiologically-based competence (Riess, 2010), demonstrated by unconscious mimicry of the postures, facial expressions or emotions of others (Carr et al., 2003; Morrison et al., 2007). We mirror the actions of others in the brain with the activation of the exact same motor and sensory areas as the person we are observing. For example, if a needle is used to trigger pain on the hand muscle of an individual, the same motor and sensory areas are stimulated in the brain of the observer (Avenanti et al., 2005). We can physically feel the pain of others just by watching them suffering from pain. However, this pain we feel exists in an attenuated form (Carr et al., 2003).

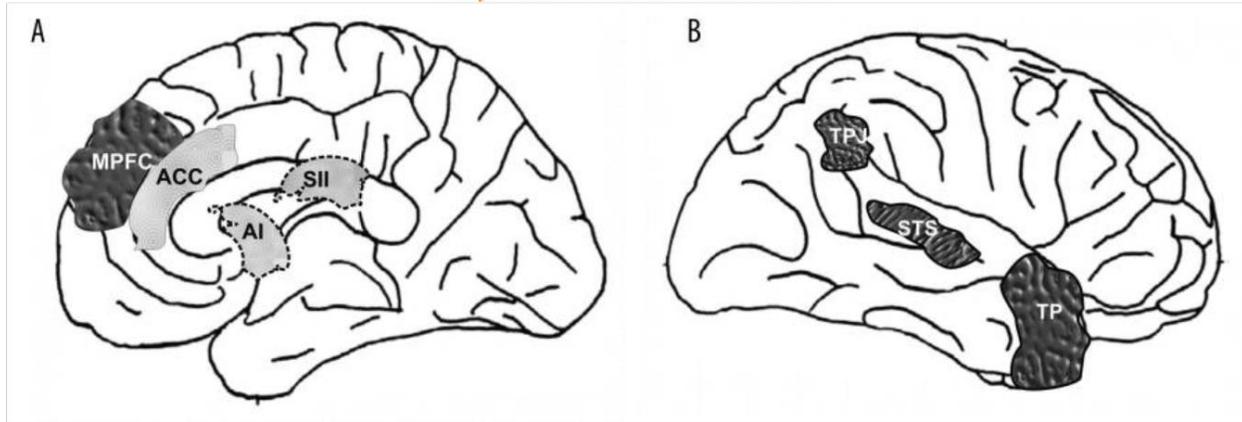
The brain on empathy generally follow two mechanism of processing. Firstly, the bottom-up processing or affective empathy, is an automatic mode of our perception of others' action, intention and emotion. This involves the so-called mirror neurons in the central promoter and parietal cortex, which "fire" in both situations, when we observe an action and we execute the action ourselves (Rizzolatti & Craighero; 2004; Iacoboni et al., 2005; Rizzolatti, 1996; Gallese et al., 2009). Such imitative behaviors are crucial for social learning and cognitive skills (Iacoboni & Dapretto, 2006). In various neuroimaging studies, this automatic bottom-up processing mainly tap on the activation of sensorimotor regions processing, including the superior temporal sulcus (STS), the anterior insula (AI), the amygdala, the inferior frontal gyrus (IFG) and the premotor cortex (PMC) (Figure 1) (Lamm et al., 2010; Carr et al., 2003).



*Figure 1: Neuronal basis of imitation (Jankowiak-Siuda et al., 2011)*

Secondly, the top-down processing of cognitive perspective-taking supports our ability to comprehend the intention, beliefs and thoughts of others, making a distinction between what belongs to self and what belongs to others (Hein & Singer, 2008), imagining how they feel, think, and believe. This cognitive empathy is the essence of mentalizing or Theory of Mind (Frith & Frith, 2003). Different from the automatic bottom-up processing of imitation, this top-down processing mainly involves the prefrontal cortex (Miller & Cohen, 2001; Hein & Singer, 2008), including the medial prefrontal cortex (MPFC), the temporo-parietal junction (TPJ), the STS, and the temporal pole (TP). Note that the AI cortex is considered as integrating both processes (Gu et al., 2014).

The top-down processing is important in the context of intercultural competence. The automatic knee-jerk reaction, including empathy, can be so quick in as few as 50ms, long before conscious thoughts come into play. Because of this evolutionary bias, cognitive empathy with the top-down processing must play a critical role when there is a lack of emotional empathy among those with diverse backgrounds in ethnicities, religions, gender, or abilities (Riess, 2017). In other words, when we try to understand other people's perspectives, the autonomic bottom-up processing might be inhibited (Figure 2).



*Figure 2: Key brain structures involved in empathy connected with 2 modes of processing information: bottom-up (light grey) and top-down (dark grey) interoception (Jankowiak-Siuda et al., 2011).*

Taking into account both processing modes and the evidence that during the bottom-up processing, we feel the pain of others only in an attenuation form, Riess (2015) suggested that the brain has evolved a mechanism to protect us from being overwhelmed with personal distress of self and other. Complementarily, the top-down processing mode might protect the brain from automatic execution of mimicry (Jankowiak-Siuda et al., 2011). This explains why adults integrate these two components, and not children (Levy et al., 2018).

### ***The negative implication of empathy fatigue***

However, the existence of empathy fatigue raises critical questions of how empathy can be overloaded and such brain's protection mechanism may fail to cope with. In the study of Singer et al. (2004), the author suggested that when we see our loved ones suffering, the pain network activated in our brain involved the emotional quality, but not the sensory quality. In other words, we may not suffer from the physical pain, but we receive the full spectrum of emotional pain. Using magnetoencephalography (MEG) imaging among mothers and children in a town 10km from the Gaza border, Feldman et al. (2019) reported that chronic trauma actually did not inhibit the integration of the sensorimotor and the AI. But as a double whammy, the chronic war-related stress resulted in a *decrease* of the mother's empathic behavior with her child.

Taken together, there is evidence that empathic emotional experience can lead to empathic distress of the observer, blurring the self-other distinction. Such a risk of empathy fatigue, or “secondary traumatic stress” as medical terms put it, has been widely recognized among teachers (Sharp Donahoo et al., 2018), child protection workers (Conrad & Kellar-Guenther, 2006), journalists (Backholm & Björkqvist, 2010), police officers (Turgoose et al., 2017), lawyers (Norton et al., 2015), student affair professionals (Raimondi, 2019), animal welfare and social workers (Samson & Shvartzman, 2018). This results in burnout, vicarious traumatization, and other forms of emotional fatigue (Russell & Brickell, 2015; Figley, 2002; Craig & Sprang, 2010), although these consequence may decrease over time (Hansen et al., 2018). There is not much research on the empathy fatigue among cross-cultural workers, but taken into account the nature of this profession, which is characterized by dealing continuously with consequences of differences, biases, discrimination, conflicts and misunderstanding, we may hypothesize that this fatigue could be the case.

Another negative consequence resulting from empathy is called psychological numbing or collapse of compassion, especially when facing mass suffering (Slovic et al., 2007). In an experiment, it was reported that participants had empathy toward a single victim and not multiple victims, suppressing compassion when they think it might be overwhelming (Tam et al., 2016).

## **FROM TOLERANCE TO COMPASSION**

### ***Empathy vs. Compassion***

Empathy and compassion are often used interchangeably. However, these two concepts can be distinguished. For example, Bloom (2017) associated empathy with experiencing others’ emotions (emotional contagion), while compassion means wanting others to do well and not suffer without necessarily experiencing their emotions.

In the light of recent studies, the impact of such distinguishment is significant. A pioneer research suggested that “compassion fatigue” is actually a misnomer (Klimecki & Singer, 2012). It is empathy that could result in an extreme of state of tension and preoccupation with the suffering of others, leading to secondary traumatic stress. However, compassion does not fatigue. As described in figure 3, there could be a stark contrast between empathy and compassion. The former is self-related since the person has to image her/himself in the situation of another, and empathy fatigue results in negative

feeling, poor health and withdrawal. The latter is other-related, resulting in positive feeling, good health and most important of all, prosocial emotion. In other words, the compassionate person has the capacity to offer help because (s)he is not overwhelmed by distress, instead, her/his prosocial behaviors are motivated by love and kindness toward the other (Eisenberg, 2000; Batson, 2009).

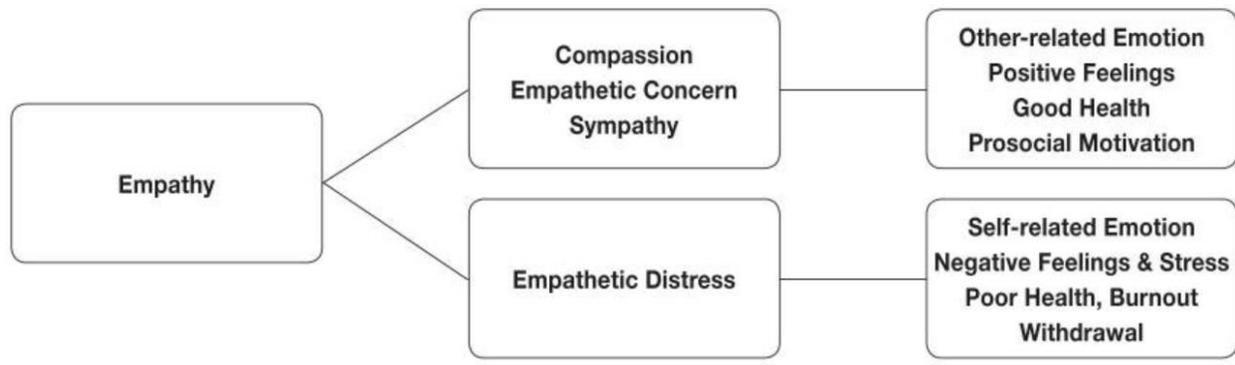


Figure 3. A schematic model depicting two different forms and empathic reaction can take (Klimecki & Singer, 2012).

### *The neuroscience of compassion*

Such a distinguishment is supported by a number of brain imaging studies. The fMRI data of Lam et al. (2007), for example, suggested that adopting a self-perspective led to increased activation in brain areas associated with pain or threat, such as the amygdala. In contrast, compassion training tends to show a very different pattern. Using a widely known technique called “loving kindness training”, this form of mental practice is carried out in silence with a cultivation of compassion towards a series of persons, someone very close, then gradually extending the feeling of kindness towards strangers, even people one has difficulties with, and ultimately, feelings of benevolence towards all human beings without any preference. In a study, participants received either empathy or compassion training (Klimecki et al., 2013; 2014). After only a few days, the compassion group showed increased positive effect in a neural network usually related to reward, such as the medial orbitofrontal cortex and the striatum while watching short film excerpts depicting others’ suffering. To compare, several days of empathy training led to an activation increase in the AI and aMCC together with an increase on self-reported negative effect. More interestingly, subsequent compassion training could reverse this effect.

Taken together, these results suggested that empathy and compassion can be seen as two different concepts, both at psychological and neurological level. While empathic distress is related to brain regions of pain, compassion is associated with regions of love. More importantly, while empathy is linked with emotional absorption of others' feelings and empathy fatigue can lead to withdrawal, compassion involves not only understanding but also acting out with a motivation to help (Singer and Klimecki, 2014). Compassion, hence, is a win-win situation in which it enhances both positive emotions and prosocial behaviors in response to adverse situations (Leiberg et al., 2011; Weng et al., 2013).

### **IMPLICATIONS FOR INTERCULTURAL COMPETENCE**

In this article, it has been argued that both tolerance and empathy may have negative implications in the context of diversity and connecting emotionally with others. Indication from studies mentioned in previous sessions suggested that compassion is a skill that can be cultivated. People can move beyond mere tolerance towards empathy by engaging perspective-taking, and move beyond empathy towards compassion by engaging loving kindness to all without preferences.

In the context of intercultural competence, these studies imply not only a distinction among intercultural tolerance, awareness, and empathy, but also a further step towards intercultural compassion. Such a move could be associated with some beneficial aspects.

Firstly, intercultural compassion may help people to make a shortcut and jumpstart steps that involve cognitive understanding of others. Take the DMIS model of Bennet (1993) for example, it posits that intercultural sensitivity is cultivated in a linear mode from denial of difference, to defense against difference, minimize difference, acceptance of difference, adaption to difference, and finally, integration of difference. This process is undoubtedly complex, effortful, trial-and-error and lengthy. However, we can now hypothesize a different approach where learners can cultivate compassion towards those who are different from them while skipping through the cognitive and emotional processes of understanding what, why, how these gaps can be overcome. For intercultural conflicts that are associated with much more than differences, but also distress, hatred, and hostility, intercultural compassion offers a promising approach. This is one solution that may tap directly into the rich and powerful well of love and kindness rather than a cognitive approach of mutual

understanding that may get tangled in the complexity of facts and emotions. For the sake of clarity, we could imagine compassion training for those from both sides of the Palestine and Israel conflict. Waiting to reach the end of the DMIS model would probably pose many challenges for those deeply involved. However, insights from current studies have given us some evidence to hypothesize that a compassion training of just several days could bring them together, and interestingly, this does not cost them any compromises in dignity, identities, or require them to have any different interpretation of facts. As a double reward, their brain will benefit from positive impacts and better well-being from such an effort.

Secondly, intercultural competence often refers to the behavioral components as a need to adapt to, or fit in with other cultures. For example, in the DMIS model mentioned above, the last final stages are “adaption to difference” and “integration of difference”, in which integration could be referred to a person who is not a member of any particular culture, allowing this individual to shift rather smoothly from one cultural worldview to another. In other words, the final stage of DMIS model is an extreme version of adaption.

This approach has been criticized by Nguyen-Phuong-Mai (2017, 2019) as a way of undermining human’s agency, for it posits that we are shaped by the culture around us by being its product. From this perspective, intercultural competence ultimately means adapting to a culture. Proposing a shift of paradigm from static to dynamic culture, Nguyen-Phuong-Mai (2017, 2019, 2020) argued that humans are both product and producer of culture, in the sense that we can actively be change agents and re-shape the cultures around us. Instead of adapting to and fitting in, we can recognize the kind of changes that are sustainable, positive and ethical, even when those changes may confront head-on with current local values and practices.

This approach of humans as producers of cultures and change agents resonates strongly with the kind of behavioral support that compassion implies. A very good example that could help us to put this into context is the relationship between a doctor and a patient. A doctor should not have empathy with patient, for this emotional response may result in empathic distress. A doctor also should not adapt to, or fit in the situation of the patient, since some elements of these demands may perpetuate negative aspects of her/his illness. In the context of healthcare, the study of Papadopoulos et al. (2016)



suggested not only cultural competence, but also culturally competent *courage*: “a virtue which enables us to do the right thing for the people we care for, to speak up when we have concerns and to have the personal strength and vision to innovate and to embrace new ways of working” (NHS Commissioning Board, 2012, p13).

By incorporating insight from other discipline, such as health care in this case, such definition of intercultural competence can potentially change the way we look at general outcomes of leaning, skill sets, and even vision of the world in which we are not merely the consequence of cultures (Hofstede, 2001), but also powerful change agents. This is extremely important if we look at the challenges we are facing: pandemic, crises, climate change, nationalism, terrorism, and so much more. It is time we reconsider intercultural competence as successful adaptation, simply because it is not only passive but also indiscriminate, i.e. we can even mal-adapt to negative elements of culture. It is time we empower the human agency. It’s time we tell ourselves and the intercultural learners that we need to be the change we want to see.

And toward that approach, compassion could be an ally.

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## Dr. Mai Nguyen

Dr. Mai Nguyen (or Nguyen-Phuong-Mai) is Associate Professor at AMSIB where she has been working since 2008. She involves in diverse research projects. Her research interests include Cross-Cultural Management, Diversity and Bias Management, Gender Equality, Asian corporate culture, Middle East and Islamic culture, Face-work Negotiation, and Instructional Design.

In the last few years, she has taken interest in cultural neurosciences together with her study at King's College London in a Master program on Applied Neuroscience. Her latest book *Cross-Cultural Management with Insights from Brain Science* adopts the notion that culture is dynamic, context is the software of the mind, opposing values coexist, change is constant, and individuals can develop a multicultural mind. The book discusses many essential topics such as cross-cultural leadership/negotiation/motivation/marketing, change, diversity and bias management...etc. But for each chapter, there is an added section on how biology plays a role: "Do genes contribute to cultural values and leadership skills?"; "Can one develop a multicultural brain?"; "How change management can be successful by knowing how the brain works?"; "What is neuromarketing?"; "Can mirror neurons influence teamwork?" Since the date of release, she has been invited to keynote at multiple conferences.

Dr. Mai Nguyen holds a Master in Educational Science and Curriculum Design from Twente University, and a PhD in Intercultural Communication from Utrecht University, The Netherlands. She contributes as member of several research advisory boards, including ELLTA (Leadership and Learning in the Asian century).

On the business side, Dr. Mai Nguyen runs her own training agency Culture Move and designs tailor-made programs for universities and companies. She co-designed various business simulation tools including Cultural Detective® and Diversophy® which are frequently used in corporate training programs. Since 2015, she also coaches diverse governmental bodies on Radicalization.

Dr. Mai Nguyen started her career as a journalist with training and fellowships at World Press Institute (USA), BBC (Thailand) and Reuter (UK). She now freelances for different media outlets including BBC, Islamic Monthly and Your Middle East. She spent most of 2012 in the midst of the Arab Spring, following the historical route of Islam from where it began, city by city, to the West and to the East. She communicates as a public figure.