

**CONNECTING THE MIND AND BODY**

**Using embodied intuition as intelligence**

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## TIIVISTELMÄ

Kriittisten globaalien tapahtumien äärellä joudutaan tekemään merkityksellisiä päätöksiä sekä ratkaisemaan monimutkaisia ongelmia. Nämä kriittiset tilanteet vaativat luovaa älykkyyttä (Harrari 2015, 258–289). Kun tämän yhdistää jatkuvasti nopeutuvaan elämäntyyliin, nousee tarve uudenlaiseen älykkyyteen. Intuiotilla on potentiaalia juuri tähän. Tämän lisäksi, jokainen yksilö on jo synnynnäisesti intuitiivinen (Raami 2020b).

Tässä kirjallisuuskatsauksessa tarkastellaan intuitiota kehollisesta näkökulmasta ja kerrotaan, miten keho toimii kanavana tiedostamattoman mielen tiedostamiseen ja siten tiedostamattoman tiedon hyödyntämiseen. Kaikkia ajattelun muotoja ei ole vielä ymmärretty, ja näin ollen koko ajattelun potentiaalia ei vielä hyödynnetä (Raami 2015, 18). Tämän kirjallisuuskatsauksen tarkoituksena on tuoda enemmän tietoisuutta intuition keholliseen kokemukseen esittämällä *(i) mitä kehollinen intuitio on ja miten se ilmenee kehossa, sekä (ii) miten kehollista intuitiota pystyy hyödyntämään*. Lisäksi esitetään useita tapoja, miten kehollinen intuitio näyttäytyy sekä miten ymmärrämme sitä, jotta pystymme hyödyntämään tätä tietämisen tapaa.

Kehollistuminen määritellään tietoisuudeksi koetusta, fyysisesti tunnetusta tapahtumasta (Tantia 2014). Intuitio tunnetaan kykynä vastaanottaa tietoa valtavalla kapasiteetilla, ja yhdessä tietoisesta ajattelun kanssa intuitio muodostaa ajattelun perustan (Raami 2015, 10–18). Intuitio on myös sateenvarjokäsite kaikelle tiedostamattomalle toiminnalle (Bastick 2003). Kehollinen intuitio on näin ollen intuitiivista älykkyyttä, joka tunnetaan kehossa (Tantia 2011). Erittäin intuitiiviset yksilöt kuvaavat intuitiivisen viestien ilmenevän kehollisina tuntemuksina kuten kylminä väreinä, vatsanpohjatuntemuksina tai tietona, joka 'kumpuaa sydäimestä' (Raami 2016). Tässä kirjallisuuskatsauksessa viitataan käsitteeseen kehollinen älykkyys, kun käsitellään kehollisen intuition kautta saavutettua tietoa.

Yksilön omien havaintojen tietoinen tunnistaminen näyttäytyy avaintekijänä intuition ymmärtämisessä sekä siinä, miten intuitio koetaan kehossa (Peña 2019, 95–96). Sisäisten kokemusten tiedostaminen voidaan saavuttaa meditaation (Khalsa et al. 2008), liikkeen, sekä kehollisen tietoisuuden avulla (Fiori et al. 2014). Tämän lisäksi liikkeen, kehon asennon sekä eleiden on nähty edistävän kognition muodostamista (Sheets-Johnstone, 2011). Näin ollen keholla on olennainen rooli kehollisen intuition hyödyntämisessä. Koska intuitio on henkilökohtainen kokemus, yksilö muodostaa lopullisen ymmärryksen siitä itse. (Raami 2015)

Avainsanat: kehollistuminen, intuitio, kehollinen intuitio, kehollinen älykkyys

## ABSTRACT

With critical global events such as a pandemic or even war, arises the need to make significant decisions and solve complex problems. Events like this, require creative intelligence (Harrari 2015, 258–289). Adding this to the increasing speed of life, there is a need to discover new ways of acquiring information and intuition has the potential for that. In addition, each individual is already innately intuitive (Raami 2020b).

In this literature review the phenomenon of intuition will be reviewed from an embodied perspective. How the physical body acts as a channel for unconscious information will be explained. There are forms of knowing that have not yet been understood and therefore, potential that has not yet been utilized (Raami 2015, 18). The purpose of this literature review is to bring more awareness to an embodied experience of intuition by clarifying *(i) what embodied intuition is and how it is experienced in the body and (ii) how can embodied intuition be utilized*. Multiple ways of how embodied intuition appears are presented in addition to how it is understood.

Embodiment is defined as an awareness of a felt experience (Tantia 2014). Intuition is acknowledged as a way of acquiring information at an enormous capacity and forming the basis of thinking together with reasoning (Raami 2015, 10–18). Intuition is also an umbrella term for all unconscious processes (Bastick 2003). Embodied intuition is then, intuitive intelligence that is felt in the body (Tantia 2011). Highly intuitive people describe intuitive signals as bodily sensations such as shivers, gut feelings, or ‘knowing in the heart’. (Raami 2016). The term embodied intelligence is used to describe knowledge gained through embodied intuition.

Awareness of one’s perception appears to hold the key in understanding what embodied intuition is and how it is experienced in the body (Peña 2019, 95–96). Awareness of internal signals is achieved through meditation (Khalsa et al. 2008), movement, and embodied awareness (Fiori et al. 2014). In addition, movement, posture, and gestures are also seen to help form cognition (Sheets-Johnstone, 2011). Therefore, the body plays an important role in utilizing embodied intuition. However, as intuitions are highly personal, understanding intuition is ultimately held within each individual. (Raami 2015)

Keywords: embodiment, intuition, embodied intuition, embodied intelligence

# CONTENTS

## TIIVISTELMÄ

## ABSTRACT

1 INTRODUCTION .....	1
2 MIND-BODY CONNECTION .....	4
2.1 How unconscious appears in consciousness .....	5
2.2 Interoception .....	6
3 EMBODIED INTUITION.....	8
4 THE ROLE OF THE BODY IN DIFFERENT FORMS OF INTUITION .....	11
4.1 Instinctive intuition .....	12
4.2 Expert intuition .....	12
4.3 Visionary intuition and direct knowing .....	13
4.4 Philosophy of embodied wisdom .....	14
5 THE BASIS OF INTELLIGENCE .....	16
6 EMBODIED INTELLIGENCE .....	18
7 ACCESSING INTUITION.....	21
7.1 The ability to differentiate contributes to reliable intuition.....	22
8 EMBODIED INTUITION IN PHYSICAL EDUCATION.....	24
9 REFLECTION .....	26
REFERENCES .....	30

## 1 INTRODUCTION

Explaining how intelligence (*älykkyys*) is formed, a multidisciplinary approach appears as extremely significant. A holistic view of a human considers the body, consciousness, and experiences to be inextricably connected. (Anttila 2009) Reviewing the phenomena of embodied intuition (*kehollinen intuitio*) can help to gain a full understanding of how the body and mind together form intelligence. Intelligence is defined in Lexico (2022) as “*The ability to acquire and apply knowledge and skills*”. In this literature review, intelligence is referred as being conscious and unconscious knowledge. As intuition surpasses the limits of ordinary knowing (Sadler-Smith 2008) the term intelligence is used instead of knowledge.

The constant change and unpredictability of life require creative problem solving often at a high pace. Intuition becomes crucial in split-second situations in addition to everyday problem-solving. (Sadler-Smith 2007, 2) However, the concept of intuition is still somehow mystified, although there has been an increasing amount of interest in intuition and human consciousness (Raami 2015, 17). Therefore, bringing more scientific knowledge around the concept of intuition is crucial for its potential to be understood and utilized (Sadler-Smith 2007). Raami (2015, 18) states that there are forms of knowing that have not yet been understood, which further emphasizes the importance of studying intuition. Explaining the process of gaining intuitive intelligence through bodily experiences can be a way to understand the otherwise ‘invisible’ phenomenon. The embodied experience of intuition emphasizes the body as a gateway to the unconscious, internal knowledge (Tantia 2011). However, there are many ways intuition can be experienced than merely through the body. Such experiences can be feelings of time and place disappearing or information appearing in forms of vision. However, most intuitive experiences involve the body as they are described as sensations or feelings in the body. Sensations are described as ‘goosebumps’ or even ‘needles on the skin’. If intuitions are not felt or sensed, the body is most often still used to describe them. Such feelings are described as an energy field between self and an object or feelings of one’s head being like a cone (“*pää tötteröllä*”). (Raami 2015, 149–155) Not only is the body important during intuitions, but some describe the body being a gateway into an intuitive state (Raami 2016, 125).

To lay a foundation for understanding embodied intuition, the mind-body connection is first presented. The mind-body connection explains biological connections as well as emotional connections between the brain and body, which transfers into a subjective experience (Lakoff

& Johnson 1999; Anttila 2009; Kahneman 2011). Mind-body exercises are suggested to develop body awareness (*keho tietoisuus*) (Peña 2019, 99), which is critical to first notice embodied signals and secondly, understand what those signals mean (Tantia 2014). Tantia (2014) explains how internal experiences can be used as information “*By directing a client’s attention to visceral and emotional experience, new knowledge is revealed, and unconscious information is made conscious through embodied awareness.*” (Tantia 2014, 214).

Both intuition and embodiment (*ruumiillistuma*) are concepts that have been studied for many years (Lakoff & Johnson; Porges 1993) but there is a lack of research connecting these two fields. At the same time research is showing the importance of connecting the mind to the body to access intuitive knowledge (Meziani & Cabantous 2020; Sipman et al. 2021). The concept of the mind-body connection is therefore crucial in explaining embodied intuition. Studies (Caldwell et al. 2010; McNeill et al. 2021, 117) have shown movement to be a way to increase mindfulness while other studies find mindfulness as a tool to become aware of not only the current moment but the body's physical sensations. Moreover, embodiment and meditative practices help to increase awareness of intuitions (Sipman et al. 2021). However, the lack of research directly studying intuition and the body, only allow to make assumptions. More research is needed to specifically study the connection between intuition and body and not just mind and body. Therefore, while this topic is complex, it has enormous potential to gain more insight into the complicated but significant phenomenon of embodied intuition.

After disclosing concept of embodied intuition, how intuition is accessed and how intelligence is formed, are presented. To clarify this process, the way we process information is explained. This process of the mind explains how reasoning is used to create intuition into intelligence. Intuition together with reasoning creates the basis of thinking. This interplay between intuition and reasoning is the essence of understanding and utilizing intuition. (Sadler-Smith 2008, 203) Therefore, embodiment can be seen at the very base of embodied intuition but is not alone enough to form intuitive intelligence (Peña 2019).

While reasoning does depend on the work of intuition, the process can also be reversed. Any kind of information can intentionally be acquired. This is where the body is used to acquire intuitive information. (Raami 2020a, 66–70) Lastly, the reliability of intuitions needs to be tested. What most often disturbs the reliability of intuitions are emotions and imagination. Research is not yet clear on whether emotions are a part of intuition or if intuition is most

reliable when no emotions are involved. (Seitamaa-Hakkarainen et al. 2013) However, Raami (2020a, 123–155) distinguishes emotions from intuitions by implying that the difference between them is how they appear to an individual. Emotions usually push or pull an individual in a certain direction, but intuition ‘flows freely’.

The importance of intuition is recognized in the basic education curriculum (POPS 2014). In addition, the second-degree curriculum has recognized the importance of learning through different senses and embodiment (LOPS 2019; POPS 2014). In comparison to other school subjects, students are more involved with their bodies in physical education. This highlights the role of physical education to have an emphasis on how to learn through the body and senses.

## 2 MIND-BODY CONNECTION

The mind-body connection can explain how the body can act as a source of information. Kahneman (2011) presents studies that successfully demonstrate how our thoughts unconsciously project into our bodies and appear in our behavior. (Kahneman 2011, 51–54) Considering consciousness (*tajunta*), it is important to notice that senses, sensations, perceptions (*havainnot*), and feelings are just as much a part of it as verbal content. (Rauhala 2005a, 34–35) Lakoff&Johnson (1999, 3–4) even argue that the thinking mind is based on how the body perceives, processes, and produces information. They add that together with the brain and nervous system, actions, and movement in the physical world, form the basis of thinking. Lakoff and Johnson (1999, 43–44) Perhaps it can be questioned whether it is even relevant to separate the mind and body. The mind-body dualism argues against any connection between the mind and body and sees them as separate entities. However, Thompson (2007, 236–237), as cited in Anttila (2009) has suggested there to be enough evidence against the mind-body dualism, which is why this view can now be challenged. Anttila (2009, 85) explains how the way of viewing the world is tied to bodily experiences. Bodily processes convert perceived information into a subjective experience. Hence, a lived, felt experience in the body becomes the basis of the mind. (Anttila 2009, 85) Lakoff and Johnson (1999, 3–4) use the term “*combined*”, as they explain that the mind is not transcendent or universal but “*connected*” to the perspective of the world we perceive through our bodies.

To fully understand the complex interaction between the mind and body, they need to be studied as inextricably connected (Chopra & Mlodinow 2011). According to Acolin (2016) experiencing the mind-body connection is as simple as feeling your heartbeat as your thoughts drift to something exciting or stressful. The mind-body connection appears in all human experiences. Still in western society connection between minds and bodies remain somewhat ignored. Psychologists strictly claim ownership of the problems of the mind, medical doctors merely consider complications in the physical body. (Acolin 2016) The same occurs in classrooms as the mind is expected to fully develop while students stay still in their bodies (Gardner 2011). However, there is an increasing amount of scientific evidence of the mind and body being connected. This has resulted in the proliferation of empirical research on the phenomenon of the mind-body connection (Acolin 2016).



## 2.1 How unconscious appears in consciousness

Kahneman (2011, 51–54) explains how we not only think with our minds but with our bodies as well. He brings science to the thoughts of Lakoff and Johnson (1999), who present a more philosophical explanation of how the thinking mind is based on the perceiving body. Kahneman (2011, 51–54) points out how cognitive science has recognized that “*cognition is embodied*”. Tania (2011) defines embodiment more specifically as “*the source from which we feel, define, and contain life experiences as they happen*” Tania (2011, 30). She later simplifies that embodiment is a present-time experience of ‘the lived body’ (Tania 2014). Embodiment is thus seen as a subjective experience within one’s own body. For example, an experience of dancing or any movement can become embodied as awareness is turned on the mental and physical experience of the movement.

From a somatic psychology perspective, the body is seen as a threshold between unconscious knowledge and conscious awareness of that knowledge (Chodorow, 1991). Given this, movement, and even posture and gestures help to form cognition (Sheets-Johnstone, 2011).

Not only does consciousness affect the physical body but even unconscious events affect actions and emotions. This is explained by the ideomotor effect where a certain idea influences behavior by priming one’s thinking. An experiment by Bargh (1996) demonstrates the ideomotor effect by studying the walking speed of participants. The experiment showed that participants whose thoughts were primed by words associated with old age (“*forgetful, wrinkle, and bald*”) walked significantly slower than others. (Bargh et al. 1996)

Another study conducted in Germany interestingly points out how the ideomotor effect works in reverse (Mussweiler 2006). Participants who were asked to walk about one-third of normal walking pace recognized words related to old age much quicker than others. Moreover, gestures have also been demonstrated to affect thoughts and feelings. In a third experiment, participants were asked to nod ‘yes’ or shake their heads ‘no’ from side to side as they listened to an audio. Participants nodding their heads tended to accept the message whereas participants shaking their heads rejected it. (Mussweiler 2006) As these studies can provide evidence of the connection between the mind and body, further and more specific experiments are needed with a larger sample group. In addition, it cannot be ruled out that the meaning of the given words affected the walking speed. For example, the energy levels of the participants were not considered. More specifically, the mind-body connection cannot alone explain embodied

intuition. (Bargh et al. 1996; Mussweiler 2006) Specifically, more studies demonstrating the body as a source of knowledge are needed. Tania (2011, 29–36) has later presented studies connecting the gut as a mediator of embodied intuitive information. Although these types of studies are crucial in discussing embodied intuition, they are lacking in quantity.

## 2.2 Interoception

In everyday language, we may describe intuition as the ‘sixth sense’ or a ‘gut feeling’. Porges (1993) referred to this “*sixth sensory system*” as interoception. He introduced the vagus nerve as the origin of interoceptive signals. Porges (1993) described that the system of interoception is located in the organs of the body, which mediate through the vagus nerve. He then defined interoception as a process by which the body informs the mind of one’s internal visceral sensations. This process does not always reach cognition. (Porges 1993) This might explain why we are not always aware of how we gain information. Interoception includes conscious feelings but also unconscious monitoring of bodily processes (Porges 1993).

Zagon (2001, 671) introduces another system that reacts to sensations emanating from within the body, the vagal system. He describes this system as a “*cyclical loop of information*” rather than a one-way system. Porges (1993) and Zagon (2001) both support the vagal system as a way of feeling in the body. Zagon (2001) even proposes the vagus nerve to be the most extensive visceral sensory nerve in the body which regulates emotion, perception, and cognition. He also considers the vagus nerve to mediate as a sixth sense. (Zagon 2001, 671) The vagus nerve stems at the base of the brain and spans from the front of the body to the base of the neck. From the base of the neck, it runs down to the front of the spine and branches out to the neural plexus of the heart and gut. This can explain ‘gut feelings’ and ‘knowing in the heart’ as information stemming from the body through the vagus nerve. (Tania 2011, 32)

Interoception can be seen as a connection between the neurological and phenomenological processes. Studying the inner reality of an individual opens a possibility for a deeper understanding of the human. (Vermersch 1999) According to James (1890), the ability to understand this personal inner reality lies in interoception. He described interoception as ‘turning perception inwards’. (James 1890) Later Ceunen et al. (2016) also defined interoception as one’s awareness of the state of the body.

In everyday life, we are only used to paying attention to our body's signals when they somehow differ from our normal state of being, for example, pain (Anttila 2009, 87). However, we receive a range of signals from the body which gives us a sense of our physical condition and most often controls our emotional state and mood (Craig 2003, 500). Craig (2003, 500) uses interoception to explain how internal signals represent a sense of the physiological condition of the entire body. Interoception can explain how signals from inner organs can influence our judgment of perception (Vaitl 1996). A part in the brain called the insula generates signals from the body such as visceral sensations, vasomotor activity, pain, and the need to breathe. This representation of interoceptive activity is shown to provide a basis for the subject self as a feeling entity, which is, emotional awareness. (Craig 2003, 500) This clearly demonstrates the process of interoception translating into awareness and gives insight into how we convert internal signals into thoughts and awareness. Not only is interoception important in gaining information but also for understanding our experiences and behavior (Vaitl 1996). Damasio (1996) as cited in Bechara et al. (2000) explains the connection between mind and body, but also points out that external stimuli can lead to changes in the body, which in turn can cause changes in the emotional state. This indicates the extent of human nature and how everything from the environment to internal senses influences the mind not forgetting the same applies the other way around. (Damasio 1996, as cited in Bechara et al. 2000) Therefore, the inner reality is equally a part of our lives as the outer perception of the world (Anttila 2009, 86).

### 3 EMBODIED INTUITION

Next, how the mind and body together form intuition will be presented. Specifically, how information is gained from sensations, emotions, and activity within the body (Bechara et al. 2000; Peña 2019; Tanti 2011). Researchers see bodily information as the basis of thinking and argue that information within the body, is crucial in forming knowledge (Anttila 2006; 2009; Kahneman 2011; Lakoff & Johnson 1999).

After gaining intuitive cues and sensations, reasoning can be used to come to a specific conclusion. The body has an important role in gaining information as intuitive information can arrive in a form of body sensations. Such sensations can be shivers, changes in breathing, energy flowing in certain body parts. (Raami 2020a, 199–205) Sensations can also be an unusual feeling in the gut or heart (Tanti 2011, 29–36). The body also has an important role in differentiating intuitive information from strong emotions or imagination (Raami 2020a, 179–182). The tendency to only notice strong or sudden body sensations can explain the abrupt and hidden nature of intuitive information (Anttila 2009, 87). This might result to not paying attention how often the body is used to either confirm our beliefs or make decisions. However, to unfold this fascinating yet intricate phenomenon of embodied intuition, a more specific definition of intuition is first needed.

A total understanding of intuition is ultimately held within each individual as intuition emerges as a highly personal experience (Raami 2015, 86). Intuition has been recognized as a form of intelligence but merely developing and listening to intuition does not contribute to intelligence. It is through combining reasoning faculties with intuition, that intuitive intelligence is accessed. (Sadler-Smith 2008, 199–210) However, not only is intuition is being used to describe many different phenomena, but there is also a lack of sufficient terminology accurately describing intuition and related concepts (Raami, 2016, 25). Neuroscience focuses on locating where, in the brain, intuition happens (Muehsam et al. 2016). Educational science explores ways of learning and focuses on the developmental aspect of the mind whereas psychology studies the systems of thinking. Lastly, anthropology tries to understand people's experiences. (Raami 2016, 18) This means each field is studying intuition, but from a slightly different angle and with a variety of terminology. These viewpoints create different conclusions on the whole phenomena of intuition and the lack of specific terminology causes the potential of intuition to be lost. Hence, there is no specifically agreed explanation as to how intuition should be defined.

(Raami 2016, 18) In addition to intuition being a form of intelligence, intuition is used as an umbrella term to describe all mental processes except conscious reasoning. This not only means unconscious mental operations but physical processes as well. Such physical processes as instincts, automated skills, and other forms of unconscious action. (Bastick 2003) Perhaps even body language can become intuitive intelligence when reasoning is used to give a meaning to what it might mean. For example, unconscious fears can appear in our body language. (Peña 2019) Another term that could be used to describe unconscious actions is pre-reflective experiences (Rauhala 2005b, 32). Pre-reflective experiences are non-verbal, unconscious experiences that are formed before could verbally express ourselves and communicate with others. Pointing awareness to the unconscious experiences can help understand their meaning. (Rauhala 2005b, 32) Bringing attention to how much is learned and experienced unconsciously could help understand how intuition can be such an enormous source of information. Pre-reflective experiences in addition to all unconscious experiences may explain the highly personal appearance of intuitions. Therefore, verbalizing intuitions could potentially be a way to understand them. This could explain why acknowledging this form of intelligence is so important.

Intuition is not, however, an embodied experience for everyone. But for some individuals, the body is an essential way to access intuitive information and to understand it. (Raami 2016, 125–126) Hence, practicing body awareness and tuning in to the body may help to get in touch with one's intuition (Goldberg 1983, as cited in Peña 2019). Goldberg (1983) as cited in Peña (2019) even states that recognizing the body's messages and becoming more self-aware leads an individual to become more intuitive.

Embodied intuition is a form of intuitive intelligence that is experienced as physical sensations in the body (Tantia 2011, 30). Simply, it is information in a physical form. Embodied intuition can appear in any physical form such as muscle tension, a feeling of pressure, or changes in the heartbeat. The concept of embodied intuition still needs clarification and support from science before it can fully be understood and utilized. The body together with experiences, awareness, evolution, and expertise form intuitive, embodied intelligence. (Sadler-Smith 2008) Intuitive experiences can be multi-sensory which demonstrates the multitude of how intuition appears (Mielonen et al. 2009). From an embodied perspective, it can be suggested that the body acts as a vessel for this multi-sensory information being brought to awareness. (Massumi 2002) states that the body can have a felt experience before any cognitive awareness of the experience

happens in the mind. The fact that becoming aware of intuitive information is claimed through the awareness of one's body, confirms that body awareness is one way of tuning into intuitive information (Peña 2019, 99–101).

Tantia (2011, 30) explains how intuition has been explained as being purely “*unconscious, non-linear and illogical*”. This can misrepresent intuition as being mystical or somehow irrelevant. It takes away the ‘existing identity’ of intuition. (Tantia 2011, 30) However, the harsh criticism and questioning of intuition can be seen as a chance to dive deeper into the science behind it. Rather than seeing it as a threat, taking a closer look at the questions can further develop competence in this field. Overall, an embodied perspective on the phenomena of intuition possibly clarifies the verisimilitude of the topic. (Tantia 2011, 30)

#### **4 THE ROLE OF THE BODY IN DIFFERENT FORMS OF INTUITION**

Raami (2020a) clarifies the infinite field of intuition by classifying intuition into the three most important forms, instinctive intuition, expert intuition, and visionary intuition. These different forms of intuition can be recognized as they are all based on different knowledge bases. Although all three forms differ from each other they do not form individual paths but collide and form a continuum in three different directions. Together they form intelligence which allows us to successfully interact with each other, problem-solve, and create. Dividing intuition into three entities can demonstrate on how we gain information and where it is derived from. This may simplify the process of understanding the information received through intuition. (Raami 2020a, 35–36) Sadler-Smith (2008) has also studied different forms of intuition. She recognizes the first two forms (instinctive and expert) intuition but does not emphasize visionary intuition or direct knowing in a way that Raami (2020a) does.

Intuition has many forms and can be recognized in many ways. However, it is extremely difficult to pinpoint intuitive experiences by science. How an individual experiences and understands intuition cannot be answered by science. (Raami 2016, 35–79) Moreover, the ability to be intuitive may vary as one can have a strong sense of instinctive intuition but not have the same strong sense in expert intuition, for example (Davis-Floyd & Davis, 1997). However, subjective experiences are valuable in understanding how intuition appears and can be utilized. The meaning of self-observation and awareness of one's own body, sensations, and feelings are highlighted in making sense of the information available within and around. (Tantia 2011, 29–24)

Results from a 4-year qualitative study (Schure et al 2008, 50–53) show that mind-body practices such as yoga are suggested to increase body awareness, sensitivity to the body, and even the ability to trust one's own body. This finding suggests that movement is an efficient way to practice body awareness. This also strengthens the validity of the mind-body connection and supports the unity of the mind and body as mental and cognitive states are affected through physical movement. Although these findings are encouraging it is important to keep in mind, that practicing body awareness does not automatically happen by only engaging in mind-body practices. One also needs to have intention to become more aware of the body.

#### **4.1 Instinctive intuition**

Innate behaviors and thought processes are a from instinctive intuition. These are formed from primitive operations such as fears, attachment styles, and social status. (Raami 2020a, 118) Raami's (2020a) explanation of instinctive intuition can be seen as somehow connected to (Rauhala 2005b, 32) explanation of pre-reflective experiences. Raami (2020a) explains instinctive intuition being multi-layered that is affected by a multitude of other intuitions which are shaped by culture and learned patterns of behavior. For the most part, instinctive intuitions are helpful and support functioning in everyday life. However instinctive intuition is quick, unpredictable, and aggressive which is why it is not reliable in all cases. Emotions play an intricate role in this type of intuition as they are a type of 'evolutionary sense', yet addition strong emotions can cloud one's judgment. Thus, connecting with one's own emotions can be an essential process in accurately understanding intuitive insight. For some describing and understanding emotions is more beneficial than verbally naming them. (Raami 2020a, 118–122) This could be because of the nature of pre-reflective experiences which were formed before we could verbalize emotions (Rauhala 2005b). Raami (2020a, 122) explains that individuals often describe emotions as important signs which after further exploration appear as a bodily sense or a certain state of being. Specifically, being able to recognize if emotions feel good or bad reinforces making an accurate intuitive decision. Raami (2020a, 118–122)

#### **4.2 Expert intuition**

The second form of intuition, expert intuition stems from unconscious intelligence. Each lived experience learned piece of information, and event one has lived have accumulated into the unconscious mind. Using this kind of intuitive information is highlighted in unstable, sudden, and intricate situations. Also, in situations where there is too much or too little information. Through this form of intuition, it is possible to outline vast, intricate entities and detect meaningful and essential information that is then associated with prior internal information. The body plays a role in restoring information from prior experiences but also retrieving intuitive information (Raami 2020a, 124–128). This can be explained as expertise-based intuition may include varying forms of embodied cognition (Raami 2015, 63).



The fact that the body holds embodied cognition can be explained by looking at the receptors in the body. Proprioceptors sense the body's position and movement in space, which are in constant connection to the brain. This type of information we are hardly aware of, yet it constantly supplies our brains with information such as muscle tension and body position. (Tuthill & Azim 2018) This unconscious information may affect perceptions and decision making. Most importantly, proprioception has been demonstrated to respond to training (Fiori et al. 2014). A study by Fiori et al. (2014) represents yoga practitioners to have a better ability to process proprioceptive signals as they demonstrate to have a keener sense of their body's presence in space. This sense of being embodied allows for a more explicit sensory evaluation. (Fiori et al. 2014) This demonstrates that movement practices such as yoga could enhance the ability to understand bodily signals, which could convert into being more intuitive. In other words, proprioception is another way, how information can be received from the body (Tuthill & Azim 2018).

#### **4.3 Visionary intuition and direct knowing**

Visionary intuition can be associated with direct knowing. Raami (2015) discusses them simultaneously while describing certain characteristics which are found in both ways of knowing, visionary intuition, and direct knowing. Both forms of intuitive knowing are described as information that can “*surpass the limits of current knowledge*” (Raami 2015, 64), and that they seem to expand to comprise issues outside of professional expertise. Designers describe this type of knowing as referring to inner sensations such as ‘knowing in the heart’ and ‘hearing an inner voice’. (Raami 2015, 64) However direct knowing is rather a process whereas visionary intuition is a form of knowing. Therefore, direct knowing can also be gained from expert- or instinctive intuition but is mostly associated with visionary intuition (Raami 2015, 62–70).

There are common characteristics between visionaries and inventors for experiencing visionary intuition that stands out as an experiential way of knowing. Such experiences are feelings of being united with the research target, working with self or being able to visualize and mentally hold multiple dimensions in mind. (Keller, 1983; Larsson, 2001) This third form of intuition appears as highly personal, and science has not yet been able to explain what knowledge bases are used to access it (Raami 2015, 63–64). However, to form a better understanding of visionary intuition it can be approached by examining what it is not based on. Visionary intuition forms ideas and solutions not by connecting prior information but by forming something completely

new. Therefore, visionary intuition is not based on other forms of intuitions. Secondly, visionary intuition is not imagination as imagination is based a different knowledge base. Also, some might consider this type of knowing as superstition, but through visionary intuition, it is possible to create correct and detailed solutions and innovations that superstition is not able to. Inventor Nikola Tesla and scientist Barbara McClintock shared an ability to make extremely accurate and subtle perceptions of their field of work. Making extremely accurate and subtle perceptions is what Raami (2020a) describes as key elements for visionary intuition. (Raami 2020a, 129–132) This points to the importance of a) being able to detect subtle changes in the environment and within oneself and b) becoming aware of these perceptions.

Moreover, perhaps the most intriguing form of intuition, direct knowing, is defined as receiving extensive amounts of information that is highly specific but comes from outside the field of expertise (Dossey 2013; Keller 1983). To some extent, direct knowing surpasses the inner experience of knowing through one's body and extends further to sensations that do not originate from the normal sensory perception. These feelings are usually described as not knowing how one knows. (Raami 2015, 66) Kautz (2005) recognizes this form of knowing as the superconscious which he describes intuition to originate from. He continues to explain that not all knowledge can be acquired by memory or even sensing. (Kautz 2005) The superconscious is similar to Jung's theory of the collective unconscious where the mind contains impulses and memories outside of one's awareness (Hull 2014, 42–53).

#### **4.4 Philosophy of embodied wisdom**

Baker (2021) speaks about the body as a source of wisdom. She explains four ways in which the body acts as a reliable source of intelligence. Firstly, the body is always in the present moment. The body cannot be in the past or the future. This contributes to present, non-judgmental being and feeling. Therefore, sensations and the perception of self in the moment are true. Secondly, the body's sensations are honest. Sensations and feelings in the body are hard to manipulate. The body most often tells the truth precisely because it is in the present moment. The third way the body can act as a source of wisdom is that the body is grounded. Sensing gravity in our bodies allows us to feel that we are here and now. Again, bringing us to the present moment. Lastly, why the body is honest is because the body is non-conceptual. The body does not think and therefore reasoning or analyzing do not interfere with the experience or the meaning of the experience. Considering all this encourages a thought that the body's

physical sensations and experiences are accurate. However, the reasoning mind tends to interfere and explain experiences that can manipulate the experience. Therefore, authentic awareness and perceiving without judgment can contribute to genuine wisdom. (Baker 2021, 59–169) Raami (2020a,124–128) explains that embodied experiences can act as directors of attention through signaling whether one is on the right path or not. Subtle body signals can inspire one to completely change viewpoints or shift one’s attention to a specific direction. This type of knowing can be gained through experience. (Raami 2020a, 124–128)

## 5 THE BASIS OF INTELLIGENCE

In the human mind, there are two systems for processing information. Kahneman (2011, 20) refers to the two systems as system 1 and system 2. He describes system 1 for intuitive and quick, but contextually dependent information processing. This type of processing is unconscious. Although intuition draws on system 1 and share common features, they are not identical. For reasoning, analytic, and rule-based, but abstract information processing he uses the term system 2. System 2 is independent of a specific context and usually explicit which in turn causes higher demands on conscious cognitive resources. Therefore, compared to system 1, system 2 is slow and demanding. This, however, makes these two systems a compelling way of processing information, when used together. (Kahneman 2011, 20–21)

System 1 information processing is characterized as being tacit knowledge or implicit learning which clarifies the nature of this processing system. The potential of this system is enabled by its nature of being involuntary. (Kahneman 2011, 21) This could be why intuitive information can seem unclear or somewhat misunderstood. The involuntary and complex nature of system 1 information highlights the need to use these two systems together. Kahneman (2011) emphasizes the ‘sense-making’ nature of system 2 as he states, “*The automatic operations of System 1 generate surprisingly complex patterns of ideas, but only the slower System 2 can construct thoughts in an orderly series of steps.*” (Kahneman 2011, 21). Other researchers such as Meziani et al. (2020) are not as unconditional regarding the significance of system 2, reasoning. Rather they highlight the importance of the ‘feeling body’ in sense-making in addition to reasoning (Meziani et al. 2020, 1385).

According to Sadler-Smith (2008, 193–204) intuition can sometimes be inaccurate and miss interpreted. As can reasoning. Usually, the harder the problem the more we need to use both systems to come to a conclusion. Intuition prepares and collects information for later analysis with reasoning. In addition, intuitive information is usually critical in situations where there is too much, or not enough information. Reasoning can disturb intuition if it is being used too early in gaining intuitive information. Intuition can be disrupted by trying to rationalize experiences rather than listening and observing intuitive insights. With reasoning, there is a risk to wrongfully assume based on previous experience or logic. Not all situations cannot be explained with logic. However, reasoning at the right time is crucial to understand and make

sense of the information that intuition is giving. We also need reasoning to be able to separate intuition from emotions and our imagination. (Raami 2016, 17–80)

This can suggest that by simply observing without judgment and analysis we are able to gain more accurate information from our experiences. This highlights the importance of authentic perceiving, which can be developed with practice. (Sadler-Smith 2004, 76–91) Distinguishing imagination from intuition can be simpler. Rather than trying to make sense of specific physical sensations, imagination can be separated as it constantly changes forms. Based on people's experiences intuitive information rarely shifts from the first perception or idea. (Raami 2016, 155)

## 6 EMBODIED INTELLIGENCE

From a phenomenological viewpoint, intuition is knowledge formed before reasoning. Husserl and Husserl (1999) refer to this type of knowing as embodied knowledge. (Husserl & Husserl 1999) Massumi (2002) confirms this by stating that the human body can sense, even ‘think’ before conscious reasoning takes place. Awareness is a way to bring embodied knowledge into consciousness although embodied perceptions can be vague and ambiguous. However, embodied dimensions appear as important information and are therefore important to examine. (Husserl & Husserl 1999) Acknowledging these embodied dimensions can be done by becoming aware of one’s orientation. Lakoff and Johnson (1999) describe that perceiving can be felt like a movement of consciousness where emotions, sensations, and embodied knowledge become one with the present moment. Studies by Gershon (1998) have suggested the gut to have a ‘brain of its own’ as the vagus nerve receives and sends information between the brain and gut (Gershon 1998).

McCraty et al. (2009) have suggested that the body perceives information separately from cognition. Their study specifically concentrates on the heart as an area in the body that receives and responds to intuitive information. Their studies demonstrated that intuitive knowing was experienced through the body, specifically through the heart. Neurocardiological research done on the human heart is one way to scientifically suggest that the body does hold information. This research has revealed that the neurons in the heart can form similar neural networks as the brain and may even store information. This was suggested by research where the heart’s activity pre-alerted a person when there was a sufficiently threatening future event. This knowing of the heart is a faster process than the mind can perceive which allows it to bypass conscious thought processes. (McCraty et al. 2004a, 2004b, as cited in Raami 2015; McCraty et al. 2009) All this suggests that intuitive information is most likely derived from several sources, not just mental processes. In addition, McCraty et al. (2009) introduce the connection between heart coherence and intuition. Specifically, the term psychophysiological coherence is used to describe a state of optimal function. This state is portrayed by heightened synchronization, harmony, and efficiency within the physiological, cognitive, and emotional systems. (McCraty et al. 2009, 3) Activating a coherent state in the body increases the ability for one to become more intuitive. This is simply done by tuning in to positive emotions such as appreciation, love, and compassion. (McCraty et al. 2009, 7–8) Positive emotions allow the heart to achieve a coherent state. This state allows the body and mind to work together in the same rhythm. The mind is

then able to work more efficiently. Activating heart coherence is connected to being intuitive as the heart is seen to be directly connected to intuition. (McCraty et al. 2009) The heart is also involved in interpreting intuitive signals as the heart can notice cues that reach the conscious mind with a delay (McCraty et al. 2004a, 2004b, as cited in Raami 2015). This specifies Massumi's (2002) statement about the body being able to interpret information before reasoning.

Even more intriguing is that the iron in one's bloodstream creates an electromagnetic field around an individual that can be measured up to three meters away. The heart operates as the source of this electromagnetic field. The quality of emotions and thoughts affect the electromagnetic field that the heart creates and can therefore hold information that is formed by our thoughts and experienced emotions. Therefore, the electromagnetic field around an individual holds information. Even if the conscious mind has not learned to identify this information, it is possible to intuitively tune into it. There is an evolutionary cause for this type of sensing which creates a natural ability to be intuitive. (McCraty et al. 2004a, 2004b, as cited in Raami 2016, 223–227; McCraty 2009) A careful examination and awareness of one's perceptions and all incoming data are extremely important and beneficial to accessing this embodied intuitive information. However, there is a need for more similar research in order to gain more knowledge in this area of intuitive knowing.

A strong sense of embodied awareness can result in becoming aware of even the most subtle experiences in the body. A sensitive recognition of these subtle changes within the body is a way to self-awareness. (Anttila 2009) In addition, movement is seen to strengthen the experience of embodied existence (Merleau-Ponty 1995, 1962, as cited in Anttila 2009). The experience of embodied existence is what yoga and somatic practices are mostly based on. These mind-body practices develop perceiving experiences within the body through observing the body in movement and becoming aware of the body's position in space. (Rouhiainen 2006,13) *Somatic* practices refer to all methods that observe the embodied existence from within. More precisely, somatic practices are movement practices that have an emphasis on internal physical perceptions and experiences. (Rouhiainen 2006, 13) It could be argued that without the body, there are just thoughts without experience. The physical feeling of a sensation brings validity to thoughts. (Baker 2021,7) Klemola (2004, 276) also presents a similar perspective summarizing that true understanding happens in the body and mind together, in the whole persona. True understanding can not only be reached with theoretical reasoning.

Therefore, true understanding involves practicing the mind and body. (Klemola 2004, 276)  
Becoming aware is not, however, enough to make sense and turn internal signals into intelligence (Peña 2019).



## 7 ACCESSING INTUITION

According to Sadler-Smith (2008, 199–204) intuition and reasoning together form a path to solving even the most seemingly impossible problems and ideas. Reasoning is highly dependent on intuition as reasoning on its own is a small processor. Raami (2020a) explains that intuition can be a two-way system. Meaning in addition to receiving intuition, it can also be purposefully acquired. Optimally any kind of information can be retrieved. (Raami 2020a, 66) Raami uses a bow and arrow example to describe the process of retrieving intuitive information. The arrow works as intuition, and the target as the objective of our intuition. For example, a solution to a problem. The counterforce that is used to pull the arrow back can be seen as ‘tuning into intuition’. (Raami 2020b)

First, the mind needs to be aimed towards finding a solution. To hit the target, there needs to be something to hit it with. This is where intuition acts as an arrow. To be able to set the arrow in motion a counterforce is needed. (Raami 2020a, 66) Tuning in to the body sensations and becoming aware of the present can act as a counterforce if what we are trying to do is forcefully rationalize a solution to any given problem. Before the arrow is set in motion, it needs to be aimed at the target. Here, the ability to focus is crucial. It is important to aim high and to believe in the impossible as it is not necessary to approach everything with a solution. (Raami 2020a, 66) The ability to achieve this type of mindset can also be enhanced with yoga as earlier mentioned, yoga can increase the ability for one to trust their own body (Schure et al 2008, 50–53).

Then, to set the arrow in motion it needs to be *let go*. Letting go can be seen as giving into intuition. Failing to let go can be seen as falling into old patterns of thinking which results in missing the target. At this stage, trusting intuition and holding off reasoning can be a way of giving into intuition. To gain a clear insight of intuition it is essential to find a comfortable state of being. (Raami 2020a, 66)

Meditation and the body can be seen as crucial elements in the process of acquiring intuitive information. However, this is only one representation of how intuitive information can be gained. Each person can have their personal routes for gaining intuition. (Raami 2015, 200) Lastly, once intuitive information has been acquired, reasoning is needed to analyze it into use (Raami 2016, 36). This could be asking questions about felt sensations, emotions, and

experiences, for example, *where and how* certain emotions are felt. However, it is important to distinguish emotions and imagination from intuitions. Raami (2020a, 123–155) describes the fundamental difference between intuition and emotions by stating that emotions usually push or pull us in a certain direction. Intuitions do not do either, but rather just flow freely (Raami 2016, 123–155).

### **7.1 The ability to differentiate contributes to reliable intuition**

According to Sadler-Smith (2008, 202–204) Being extremely receptive and acknowledging all new information without judgment is equally destructive as would be having tunnel vision for receiving information. In both cases, awareness, and the ability to connect intuition to other sources of information are impaired. Raami (2020a, 21–114) adds, that evaluating the credibility of intuitive information requires different methods than used with reasoning because intuition does not operate in the same field as reasoning. Assessing the reliability of intuitive information, some highly intuitive people have described using changes in body sensations and awareness as confirmations that perceived information is meaningful. (Raami 2020a, 21–114) Price and Hooven (2018) highlight mindfulness as a tool to differentiate emotions, sensations, and imagination from intuition which can lead to more accurate intuitions. However, as intuition operates outside of logic, we need multiple viewpoints to verify the meaning of intuitive information. Individuals constantly relying on intuition use confirmations to assess the accuracy of intuitive information. There is no single description of what these confirmations are. Instead, there are as many ways of confirming as there are individuals. However, changes in bodily sensations are often described as being confirmations. Often even the way intuitions appear, can be used as a sign of intuitions being reliable. Confirmations are used to give up excessive reasoning without losing the ability to differentiate between imagination, strong emotions, and intuition. (Raami 2020a, 179–182)

Although we can consciously acquire intuitive information, it is not always accurate or meaningful. Often, intuition is confused with strong emotions. Sadler-Smith (2008, 203) clarifies that when emotions disturb intuition, “*system 2 fails to override system 1*”. Raami (2016, 258–287) adds that intuition can also be biased by unconscious fears and beliefs. This underlines the need to practice the skill of differentiating biased intuitions (emotions and imagination) from accurate ones (embodied knowledge or internal intelligence). Differentiating starts by becoming aware of all things that come into mind. There are only a few situations

where all crucial information can be acquired based purely on logic and reasoning. (Raami 2016, 258–287)

However, as mentioned before, intuition can also be biased (Sadler-Smith 2008, 203). Therefore, learning to recognize personal signals that work as confirmations is crucial. Confirmations are signals that help recognize reliable intuitions. However, ways of recognizing reliable intuition may vary between individuals. Some expert intuitives describe confirmations as physical sensations on the body such as tingling at the back of the neck but also as images in the mind's eye. Confirmations are described as clear changes either within the body or perception and typically these changes are described as gut feelings or shivers in the body. Hence, an important part of accurately intuiting is the ability to recognize confirmations and how they affect intuitive thinking. (Raami 2016, 280–281)

(Dane & Pratt 2009, as cited in Raami 2015) state that intuition can be affectively charged and therefore connected with emotions. The discussion about whether emotions are useful during intuiting divides practitioners and researchers. Bastick (2003) considers emotions to be crucial when intuiting. However, Simon (1987), as cited in Raami (2015, 73) states that intuitions differ completely from emotions. Myss (2005) also underlines that reliability suffers as emotions disturb and somehow corrupt intuition. However, emotions could be considered as a potential form of raw data and a source of essential information (Seitamaa-Hakkarainen et al. 2013). Therefore, emotions can be considered as a valuable and beneficial source of knowledge when the meaning of them are carefully evaluated rather than ignored or suppressed (Hogarth, 2001). Some researchers see emotions as the mental experience of the body's state (Damasio & Carvalho 2013) which points to the body to constitute experiences. However, when discussing emotions in the intuitive process we need to consider both viewpoints. The form of intuition described as direct knowing highlights the absence of emotions while emotions seem to play an important role in other forms of intuition. Particularly instinctive intuition. (Raami 2015, 63–68) All in all, differentiating intuition from emotions appears to be important to be able to separate emotion-based intuition from expertise-based intuition. (Simon 1987, as cited in Raami 2015, 70–74). Like reasoning, if emotions are too strong, they can be considered to bias intuition, but they can also be important signals or even point thinking or behavior in the right direction. Emotions can usually be described how and where they are felt. However, intuitions are not easy to describe or verbalize. Therefore, if a 'feeling' is impossible to describe, it is most likely intuition rather than emotion. (Raami 2020b)

## 8 EMBODIED INTUITION IN PHYSICAL EDUCATION

Klemola (2005, 275) stated that thousands of years ago it was understood that training the body also meant training the mind. He then points out that the Eastern pedagogical view had shifted far away from this model of thinking. Anttila (2009) added that still in 2009 a dualistic approach, which saw body and mind as separate entities, was still deeply rooted in pedagogical practices. However, science has since taken a leap back towards understanding that the body indeed does affect the mind, and an embodied approach to intuition has been presented in pedagogy (Sipman et al. 2021). Another advance in the field of intuition is found in the national primary school curriculum (OPS 2014). Intuition was not yet mentioned in the 2004 curriculum but is now acknowledged in the new version which is currently valid. (POPS 2014; POPS 2004) The primary school curriculum promotes the importance of teaching how knowledge can be formed in various ways, including intuitively learning through experience (POPS 2014). The second-degree curriculum also demonstrates how the meaning of embodiment in education is being understood. The curriculum highlights the importance of learning through embodiment and different senses. (LOPS 2019) These objectives indicate how embodiment and intuition are already being used in education. This could demonstrate the confusion and lack of terminology in the field of intuition that has been pointed out by Raami (2015).

Anttila (2006) advocates these views presented in the curriculum. She presents the concepts experientialism and reflectivity which she associates as body and mind. Experientialism (body) and reflectivity (mind) can be considered as stairways to learning and understanding. Their connection is seen as being crucial to form awareness. Experientialism is understood as a theory that states that experience is a source of knowing and reflectivity is described as an ability to consciously view one's existence. (Anttila 2006, 60–74). This speaks for the potential of physical education to enhance students embodied intuitive abilities. The main entities used to learn in physical education are our bodies, movement, and experience. Experientialism and reflectivity come true in many school subjects but are highlighted in physical education.

The national primary and secondary school curriculums both list social skills and the development of one's thinking as one of the objectives of education (POPS 2014, 17–148 & LOPS 2019, 19–333). Sipman et al. (2021) stated that intuition can be a valuable tool for communication and social interactions. Also, it can be assumed that using intuition can develop

ones thinking. In addition, intuition is crucial in reaching a form of intelligence that can result in more creative and complex thinking skills. (Sadler-Smith 2008,103–122)

Body- and self-awareness are starting points for becoming more intuitive (Tantia 2014; Peña 2019). Physical education has a unique opportunity to teach both. Students could be taught embodied intuition by simply teaching meditation techniques. In addition, teaching students to notice embodied experiences in different ways of moving can strengthen their body awareness. (Tantia 2014) Most importantly speaking about intuition and explaining it as a natural way of acquiring information and knowing can legitimize some students' intuitive experiences. Our society commonly keeps intuitive experiences hidden. (Raami 2015, 10) Raami also states that bringing conscious awareness to intuitive experiences not only helps the individual to form a deeper understanding of the process but helps form stronger personal expertise and even strengthens one's self-esteem. (Raami 2015, 10)

In addition, humans are naturally intuitive. This means we have the ability to develop the skill of intuiting. Visionary intuition, which provokes the most creative and brilliant solutions, can be enhanced by practice. In the center of visionary intuition are awareness and the ability to differentiate. (Raami 2016, 35–94) In practicing awareness and learning to differentiate intuitions from emotions and imagination, the body acts as a tool to gain and practice these skills. Teachers of physical education have an important role in teaching students how to develop this innate, superior way of knowing. The path to gaining more body awareness is through learning to move mindfully and holistically without the intention of doing as much as possible (Anttila 2006, 60–74).

## 9 REFLECTION

Intuition as a term is complicated. It is used to describe several different aspects of intuition, such as various forms of intelligence, different processes of knowledge, and diverse outcomes of knowing. (Raami 2020b) Therefore, all these explanations and descriptions of intuition confuse its meaning. This is why this literature review focuses on explaining intuition from an embodied perspective and as a form of intelligence. Based on the information gathered in this literature review; intuition is a personal way of knowing. It appears involuntarily, but it is also possible to purposefully acquire it. However, an embodied viewpoint to intuition is just one among many others.

To answer the first question *(i) what embodied intuition is and how it is experienced in the body*, a vast understanding of the phenomena was gathered and is demonstrated as follows: Embodied intuition connects the mind and body in the sense that we often form thoughts, make decisions and act based on our body experiences or sensations. For example, a bad feeling in the stomach or heart can direct us away from a dangerous situation. This most often arises from evolution, learned behavior, and beliefs. Body signals such as shivers can also confirm a researcher that they are searching in the right area for information. Similarly, business leaders can perceive their body postures or gestures as reassurance that they are making the right decision. Even if there is no physical sensation or feeling in the body, posture, and gestures can reveal an unconscious nervous feeling of fear. Utilizing visionary intuition is still unclear because of the lack of insight on what knowledge bases are used to form it (Raami 2015, 63–64). However, it seems that the body plays a significant role in perceiving and gaining access to the visionary form of intuition.

Together with reasoning, the most accurate and reliable outcomes are received. Intuition alone is just information. Reasoning is needed to utilize the information and understand what it means. This answers the second question, *(ii) how can embodied intuition be utilized*. Intuition is utilized through the cooperation of intuition and reasoning. But first, intuition needs to be recognized. This is where the body plays a crucial role as it is used to a) receive and acquire intuitive information through senses and awareness, b) confirm that intuitions are reliable, and to c) hold intuitive information.

An important concept that arises in people's personal experiences utilizing any form of intuition (whether it is for creating something new or making an important decision) is that the body is often used to tune into intuition. This is done by opening the senses to receive and acquire intuitive information. Some individuals use movement to authentically tune into listening to the body and for others, it can be meditation or stillness.

Fears, prejudices, and strong emotions bias reliable intuition, which creates the need to use confirmations to evaluate reliable intuition. To be able to exploit intuitive information, the accuracy needs to be confirmed. This is where differentiating becomes important. Differentiating can be done using body sensations that confirm or deny the accuracy of intuitions. Confirmations are often described as body sensations such as shivers, body posture, and muscle tension. However, reasoning is often needed to fully understand intuitions.

The body holds information in many ways. In addition to the heart, the interoceptive system, vagus nerve, and proprioception are all processes in the body which hold information. Interestingly, the body holding intuitive information has also been explained by viewing how the body forms information from thoughts. Chopra (2009) explains how every thought produces a biological reaction of different chemicals and hormones in our bodies. In this sense, our thoughts form our body chemistry. He describes this as "*thinking bodies*". He adds that the gut creates chemicals that reflect the thoughts we are having and that the gut feelings are a lot more accurate as our gut does not doubt its thinking. This explains Bakers' (2021) thoughts that the body is honest, body sensations are hard to manipulate. McCraty et al. (2009) have also suggested that the heart holds information that is, in other words, embodied intuition. Chopras' (2009) explanation that thoughts biologically affect body states is demonstrated by McCraty et al. (2009) as their study revealed that positive mind states allow one to become more intuitive because of heightened heart coherence. Perhaps this could mean that all thinking is embodied. The fact that even unconscious thoughts form a physical response in the body (Chopra 2009), can explain how we know without knowing. These perspectives might raise doubts on how our bodies could hold such critical information and boundless intelligence without our knowledge. But the answer is in the question. If we are not aware of this embodied intelligence, we cannot access it. This raises the meaning of awareness to ultimately be the key to utilizing embodied intuition.

Physical education has an opportunity to teach the skill of body awareness. To some extent, the Finnish education system is already teaching embodiment and intuition. Still more emphasis could be placed on learning through and with the body. Studies in physical education focus a lot on how to keep the youth active and moving as much as possible. However, a shift in this focus towards a more aware and embodied way of moving, could improve body awareness. A more aware and embodied way of moving could mean adding mind-body practices such as yoga to the curriculum. Why yoga is emphasized is because of the intention of a yoga practice is specifically to pay attention to the body and its experiences. Whereas this is not the primary goal in most sports. This could be one way to accomplish the POPS and LOPS values mentioned in chapter 8. However, the implementation of this is much easier said than done. The number of hours of physical education being taught is very limited in addition to having multiple other objectives.

Intuition is a topic that faces a lot of doubt and prejudice due to the spiritual nature of the phenomenon. In addition, its abstract nature may create difficulty in understanding what intuition is. This might be the reason that there is a limited amount of research describing intuition in depth. Therefore, this literature review is largely based on studies and information that Raami (2020) has presented. Intuition is mentioned in scientific literature, but not in close detail, or focusing on explaining it from a specific viewpoint. For example, other researchers such as Tantia (2014) and Peña (2019) have mentioned embodied intuition. However, Tantia focuses specifically on the biological aspect of intuition and Peña from a clinical perspective. Even though Raami focuses on intuition in the creative process, she explains this complex phenomenon in a way that can be understood in everyday life. Therefore, it is important to acknowledge that this literature review does describe embodied intuition from a narrow point of view although a valid one. A more critical examination could bring even more credibility to the phenomena of embodied intuition.

Science can present evidence that the existence of these experiences is real. Porges (1993) and McCraty et al. (2009) do so, but how an individual experiences embodied intuition will always be subjective which challenges the scientific research of this phenomenon. What still needs to be studied, is whether embodied intuition is a form of intuition or a way we experience intuition. This could give answers to how we create intelligence from bodily sensations. Some individuals rely more on intuitive information coming through the body (embodied intuition) and some rely more on mental images or other senses (visionary intuition). Embodied intuition seems to be



most beneficial in making decisions or redirecting thoughts. This is intelligence, but it does not directly translate into answers. For example, it is unlikely a gut feeling translates into an idea that solves complex problems, but it can reassure an individual that she is looking in the right place. Therefore, clarifying what embodied intuition is (a form or a way to experience intuition), appears as important in understanding and taking advantage of its potential. Therefore, more research on intuition from an embodied perspective needs to be done. By interviewing people's experiences on how they experience and use embodied intuition can bring answers to the question mentioned above; is embodied intuition a form of intuition or a way of experiencing it?

While explaining the subjective experience certainly brings clarity to the phenomenon, the purpose is much larger than this. Simply awareness of the phenomenon can create a much richer understanding of oneself and the possibility for acquiring sustainable and creative intelligence is formed. Disclosing the existence of embodied intuition not only explains how one acquires embodied intelligence but allows one to develop the skill of retrieving information from within the body. What is potential about embodied intuition is that it is a form of intelligence everyone can acquire and develop.

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