

#### **Transcription Vol.1.4: Connecting Primary Sounds to Emotions**

[Slide: 1] "Holistic Emotive Practices Vol. 1 Part4: Connecting Primary Sounds to Emotions"

Hello. Welcome back to my series of talks on Holistic Emotive Practices. This is Brian McPherson. In this installment I will reveal the scientific evidence that forms the basis of Holistic Emotive Practices, or HEP. We will see that the data shows a connection between individual speech sounds and specific physiological aspects of emotions.

[Slide: 2] "The Extremes of the Emotion Dimensions: Arousal – Very Relaxed to Highly Excited; Pleasure – Unpleasant to Highly Pleasurable; Control – Outside Control to Internal Control"

Recall the discussion from Part 2 of this series. In that talk I noted that we can break down the physiology of emotions and moods into three distinct components or dimensions. Each of these emotion dimensions has two opposite extremes, sometimes referred to as poles. We can consider one pole empty or unfilled and the other one full. I am not using empty in the sense that nothing is happening, since physiological processes take place continually. You will see what I mean by empty and full as we apply the terms to each individual emotion dimension.

For the arousal dimension the empty pole is a relaxed feeling, empty of all arousing activity, and the full dimension is an excited feeling. The empty pole of the pleasure dimension is an unpleasant feeling – empty because it lacks pleasure, while the full pole is simply a feeling of pleasure. The empty pole of control is lack of control, or the feeling that we are being controlled by an outside force, and the opposite or full aspect of control is the feeling that we are in control.

With scientific evidence I will link each primary vowel to an empty pole of one of the physiological dimensions of emotion and also link the consonant most closely related to each primary vowel to the same emotion dimension but to the opposite or full extreme of that dimension.

[Slide: 3] "Primary Vowels and Related Consonants; /â/ - /r/; /û/ - /m/; /î/ - /n/"

Before I discuss this evidence, let's recall the primary vowels and specify each vowel's most closely related consonant. The primary vowel /â/ is related to the /r/. By constricting the jaw from the /â/ position you produce an /r/. The primary vowel /û/ connects best to the /m/. A simple constriction of the lips from the /û/ position gives you an /m/ sound. Finally, for the primary vowel /î/ the /n/ is the companion consonant. When we articulate an /n/ we use the tongue to create the maximum blockage achieved by the tongue alone, compared to most other consonants. That is, the blockage in the mouth is complete forcing air and sound to escape through the nasal passage. The /ng/ creates a similar

blockage but that sound uses the back portion of the tongue which connects the tongue to the jaw, and thus the emotional valence of the /ng/ involves the arousal dimension of emotion to a slight degree.

[Slide: 4] "Most arousing sound - /r/; Most relaxing sound - /â/"

Let's look at the arousal dimension first. Research has connected an /â/ to feelings of relaxation. This should make intuitive sense. Think about how you might react vocally in situations where you get a chance to relax, maybe by slipping into a hot tub, or getting a massage, or maybe just sitting down on a couch to rest after a tiring task. An 'ah' might naturally slip out of your mouth. When we relax and wish to express our feelings, a simple 'ah' works best.

What about making an arousing sound? If we want to express agitation or aggression, either intentionally or not, a growling /r/ probably works better than any other sound. My studies show that an /r/ sound activates ideas in memory associated with arousal and excitement.

[Slide: 5] "Lowest frequencies, dominant growl - /r/; Sound indicates relaxation - /â/"

Other evidence corroborates these conclusions. The frequency spectrum of an /r/ sound consists of lower frequencies than any other sound. People consider a lower pitched voice more dominant than a relatively higher one. Dominance implies activity and arousal, not relaxation.

My experiments reveal that when subjects hear an /â/ sound it activates concepts stored in memory that connect to relaxation.

[Slide: 6] "Most pleasant sound - /m/; Most unpleasant sound - /û/"

If you consider the pleasure dimension of emotion, we see converging evidence that points to /m/ as the most pleasant sound and /û/ as the most unpleasant one. In one study where people rated different phonemes on arousal, pleasure and control, the subjects rated the /m/ as the most pleasant sound. In another study, people heard stories that varied in the number of words that contained an /û/ sound. Stories with a high number of /û/ sounds were rated more unpleasant than stories with few /û/ sounds. In another study people had to vary the shape of their mouth. When the mouth held the lips pursed as they must be for an /û/ sound they rated their activity more unpleasant than when their lips held a position similar to that used for an /i/ sound.

Another study has found that an /m/ sound activates memories of pleasant things and an /û/ sound activates concepts in memory that hold unpleasant connotations.

[Slide: 7] "Mother's milk; mm, mm, good - /m/; Pursed lips, no milk - /û/"

We can point to more practical or intuitive evidence for connecting /m/ to pleasantness and /û/ to unpleasantness. What about the Madison Ave advertising slogan for Campbell's soup, "mm, mm good?" We get the point from the "mm" that is pleasurable.

In many languages the word for mother begins with an /m/. When a baby nurses at mother's breast the only sound possible is an /m/. On the flip side of that phenomena, what happens when the baby cannot find the breast? Instead of pleasure the child experience want or displeasure with lips pursed and searching in an /û/ shape.

[Slide: 8] "Best sound indicating control- /n/; Best Sound for conveying; lack of control- /î/"

I have produced evidence that supports connecting the final pair of sounds, the /î/ and /n/, to the control dimension of emotions. In one of my studies different sounds were paired with written words associated with lack of control, for example fright, scare, and lost. When subjects heard an /î/ sound with these words they respond faster and more accurately than if the words get paired with a sound other than an /î/. Similarly, recognition of words with a connotation of control, for example strict, rule, and dictate gets facilitated with an /n/ sound compared to other sounds. In psychological parlance we say that an /î/ sound primes words related to lack of control and an /n/ sound primes words associated with control. The classical interpretation of such phenomena is that the primes, in this case the individual phonemes, shares neural connections in the brain to the concept that it primed. When a subject hears a prime, activation spread from its representation in the brain to its related concepts, indicating in this experiment that on a basic biological level we connect an /î/ sound to lack of control and an /n/ sound to control.

[Slide: 9] "Language used to control - /n/; Sound of fright - /î/"

Some other evidence supports the connection between /n/ and control and /î/ and lack of control. The /n/ sound in many languages forms part of a word for negative, such as "no" in English. English speakers use this word exert control, for example when you want to control your toddler and the child from doing something. Some anecdotal evidence supplies the final connection between the /î/ and lack of control. Have ever seen videos of people experiencing amusement park thrill rides? You know, the ones that turn you upside down while traveling seventy miles an hour. Invariably in those clips you hear a piercing 'eeee' sound. Clearly they are expressing their feelings about the lack of control they feel. Likewise, on several occasions I have heard a similar cry when my wife loses control of her kitchen to a mouse.

[Slide: 10] “Table with five rows: Details of dimension; Active Physiological component; Pole of emotiondimension; Primary vowel; corresponding consonant. Six columns: Excitement Level/Jaw, Aroused, Relaxed, Satisfaction Level/Lips, Pleasant, Unpleasant, Locus of Control/Tongue, Internal, External.”

So that’s the balance of the evidence that connects individual speech sounds to a particular pole of one of the dimensions of emotions. The most important piece of information to take away from this discussion and carry forth into learning more about HEP is that these connections can all be traced to the underlying physiology.

The main players here are the three articulators of speech production, the tongue, lips, and jaw. Each of these physiological components modulates one specific dimension of emotion. The jaw when loose and open creates an /â/ when closed the sound becomes an /r/. Thus the jaw modifies the arousal dimension of emotions moving from relaxed /â/ to aroused or excited /r/.

The open lips produce an /û/ sound. When closed the sound becomes an /m/. Thus the lips affect feelings on the pleasure dimension going from the unpleasant /û/ to the pleasant /m/.

The tongue influences the control dimension of emotions, going from lack of control when it is idle, as with the /î/ sound, to a feeling of being in control with the /n/ sound.

[Slide: 11] “Photos by me”

That is all for this time. In the next presentation I carry the discussion forward to link all English phonemes and some non-English ones to specific feelings.

Until then, thanks for listening.