



Guide to Moods and Attitudes

Understanding Beyond Verbal's engine emotional definitions

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The description of the model given in this manual is based on the specifications at the time of writing. This manual covers all existing functions for the model described.

CHAPTER 1 INTRODUCTION

The Emotions Analytics engine of Beyond Verbal takes raw voice input and analyses it for mood and attitude. What exactly is provided depends on your license key.

- The Emotions Analytics engine measures the speaker's current mood. It requires at least 13 seconds of continuous voice to render an emotional analysis. For more information please refer to our recording guidelines.
- The outputs are distributed into moods and attitude outputs, as listed below within this document.

CHAPTER 2 ATTITUDE OUTPUTS

The Emotions Analytics engine measures the speaker's emotional state during the analyzed voice section into three separate attitude outputs: Temper, Valence, and Arousal. They are all measured on a scale of 0 to 100.

2.1 TEMPER

Temper reflects a speaker's temperament or emotional state ranging from gloomy or depressive at the low-end, embracive and friendly in the mid-range, and confrontational or aggressive at the high-end of the scale.



The temper output is divided into two distinct measurements:

- Continuous Scale ranging from 0 to 100, representing a temperament shift from depressive at the low end to aggressive at the high end.
- Temper groups which consist of three distinct groups: Low, Med, High

2.1.1 High Temper

High temper occur when the speaker experiences and expresses aggressive emotions, such as active resistance, anger, hatred, hostility, aggressiveness, forceful commandment and/or arrogance.

Aggressive emotions may have different levels of intensity, and may even be combined, to an extent, with embracive feelings (but not depressive feelings). The Temper scale present this ambiguity as a score that increases the more intensive and "pure" the aggressive emotions are.

2.1.2 Medium Temper

Medium temper occur when the speaker experience and expresses the following three types of emotions:

- Embrasive “positive” emotions, communicated in a warm and friendly manner, such as positivity, empathy, acceptance, friendliness, closeness, kindness, affection, love, calmness, and motivation.
- Self-controlled “neutral” emotions communicated in a “matter-of-fact” intonation.
- No significant emotions are evident in the speaker's voice.

As medium emotions populate the middle of the spectrum, they may contain elements of depressive or aggressive emotions (but not both). The Temper score represent this ambiguity as the score varies for the mid-range towards one of the ends.

2.1.3 Low Temper

Low temper occur when the speaker experiences and expresses depressive emotions in an inhibited fashion, such as sadness, pain, suffering, insult, inferiority, self-blame, self-criticism, regret, fear, anxiety and concern (can also be interpreted as fatigued). It is as though the speaker is waning, growing smaller or pulling back.

Depressive emotions can be expressed in different levels of intensity and may even be combined, to an extent, with embrasive feelings (but not aggressive).

2.2 VALENCE

Valence is an output which measures speaker’s level of negativity / positivity.

The Valence output is divided into two distinct measurements:

- Continuous Scale ranging from 0 to 100, representing a valence shift from negative attitude at the lower part of the scale to a positive attitude at the higher part of the same scale.
- Valence groups which consist of three distinct groups: Negative, Neutral and Positive.



There are three possible and distinct Valence groups:

- **Negative Valence.** The speaker’s voice conveys emotional pain and weakness or aggressive and antagonistic emotions.
- **Neutral Valence.** The speaker’s voice conveys no preference and comes across as self-control or neutral.
- **Positive Valence.** The speaker’s voice conveys affection, love, acceptance and openness.

2.3 AROUSAL

Arousal is an output that measures a speaker’s degree of energy ranging from tranquil, bored or sleepy to excited and highly energetic. Arousal can also correspond to similar concepts such as involvement and stimulation.



The Arousal output is divided into two distinct measurements:

- Continuous Scale ranging from 0 to 100, representing a shift from tranquil at the lower part of the scale to excited at the higher part of the same scale.
- Arousal groups which consist of three distinct groups: Low, Mid and High.

There are three possible and distinct Arousal groups:

- **Low Arousal**, conveys low levels of alertness and can be registered in cases of sadness, comfort, relief or sleepiness.
- **Mid Arousal**, conveys a medium level of alertness and can be registered in cases of normal conduct, indifference or self-control.
- **High Arousal**, conveys a high level of alertness such as excitement, surprise, passionate communication, extreme happiness or anger.

CHAPTER 3 MOOD GROUPS

Mood groups are an indicator of a speaker's emotional state during the analyzed voice section.

There are 432 composite moods which are grouped into eleven main mood groups. Mood groups are distinct outputs and not measured in a scale.

3.1 AGGRESSIVE / CONFRONTATIONAL MOOD GROUPS

- **Supremacy and Arrogance.** This group is typified by feelings of power, superiority, ascendancy, self-importance or self-entitlement. The feelings can range from a feeling of superiority to a tendency to assert control when dealing with others.
- **Hostility and Anger.** This group has negative emotions of antagonism, enmity or unfriendliness that can be directed against individuals, entities, objects or ideas. The feelings can range from aversion and offensiveness to open aggressiveness and incitement.
- **Criticism and Cynicism.** This group is typified by a feeling of general distrust or skepticism. The feelings can also be described as scornful and jaded negativity.

3.2 SELF-CONTROL MOOD GROUP

- **Self-control and practicality.** This group is typified by feelings of controlled emotions, behaviors and desires. The feelings can range from self-restraint to irrelevance.

3.3 EMBRACIVE MOOD GROUPS

- **Leadership and Charisma.** This group is typified by feelings of power, vision and motivation. The feelings can range from protectiveness, communication of ideas or ideology with an underline of motivation.
- **Creativeness and Passion.** This group is typified by a feeling of eagerness and/or desire. The feelings can range from desire, want and craving with an underline of

action to achieve goals. These emotions are highly correlated with vivid imagination, hopes and dreams.

- **Friendliness and Warm.** This group is typified by positive feelings and pleasant accommodation. The feelings include approval, empathy and hospitality. The group can also include feelings of being approved or wanted by others (“being part of a team”) as well as being receptive to another person, idea or item.
- **Love and Happiness.** This group is typified by long term happiness, affiliation and pleasurable sensation. The group also includes feelings of strong affection for another person, idea or item as well as arising out of kinship or personal ties.

3.4 DEPRESSIVE / GLOOMY MOOD GROUPS

- **Loneliness and Unfulfillment.** This group is typified by feelings of inadequacy, lack of worth, disappointment or failure.
- **Sadness and Sorrow.** This group is typified by emotional pain such as unhappiness, self-pity and powerlessness.
- **Defensiveness and Anxiety.** This group is typified by negative emotions of fear, worry and uneasiness. The group also includes low self-esteem and can also often be accompanied by inner turmoil and restlessness.

ABOUT BEYOND VERBAL

Beyond Verbal Communication, Ltd. (Beyond Verbal) commercializes patented technology that extracts a person's full set of emotions and character traits in real time, based on raw voice recordings as the person speaks. Core research, based on the understanding that it's not what we say, but HOW we say it, has been ongoing by a team of physics, operations research, decision-making and neuropsychology scientists for more than 20 years. Covering close to two million voice samples, speaking more than 40 different languages, this research has led to discoveries which form the basis of a new field – what we call voice-driven Emotions Analytics – which introduces a whole new dimension of emotional understanding and has the potential to transform the way we understand ourselves, as well as the way we interact with machines and with each other.



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