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| **Tone Quality Feature** | **Description** | **Perception** | **Position on Affect Map**  *1 Valance*  *2 Arousal Energy*  *3 Arousal Tension* |
| Glottal Onset | Glottal onsets are very percussive and are created by air “suddenly and forcefully escaping through a previously tightly closed glottis” (Heidemann 2016, 6). Creak onsets are both percussive and rough and are produced by the vocal folds rapidly opening and closing as breath passes through. | Glottal and creak onsets may both be noisy (e.g., rough, breathy) and may therefore tend to be associated with negative emotional states (e.g., weariness, pain, sadness, fear) (Spreadborough 2018, 168 – 171). These onsets also tend to be very audible (it is difficult to produce a soft glottal onset, although creak onsets may have more dynamic variety). Therefore, in this paper I contend that glottal and, at times, creak onsets may also be associated with externalised negative emotions. That is, emotions which are typically expressed loudly and openly, either intentionally or involuntarily. For example, a scream of fear, or a yell of pain. | 1 Either pleasant or unpleasant  2 More awake  3 More tense |
| Creak Onset | 1 More unpleasant  2 Either awake or tired  3 Either tense or relaxed |
| Aspirate onsets | Aspirate onsets occur when breath passes through the vocal folds before they begin to vibrate (this may occur both while exhaling or inhaling). This creates a breathy effect which is noisy and unpitched, but not necessarily rough. | Aspirate onsets are like glottal/creak onsets in that they have the potential to be negative. However, they may signify a different kind of negative emotion compared to creak/glottal. The noisy but soft nature of the aspirate onset may signify more internalised negative/sad emotional states, for example the sound of a quiet sob or the airy quality of a frightened voice. Aspirate onsets may also have the potential to evoke a sense of intimacy or closeness as, to hear such soft nuances, one needs to be in close proximity to the singer (see discussion of breathiness below). | 1 Either pleasant or unpleasant  2 Either awake or tired  3 Either tense or relaxed |
| Simultaneous onsets | Simultaneous onsets involve the breath and the vibration of the vocal folds occurring at the same time. This creates a clear onset where pitch begins without delay. | Simultaneous onsets may be more likely to be associated with neutral and happy emotions. For example, the clear onsets of laughter, or the deliberate articulation of the prime minister’s speech. In this way, simultaneous onsets may be associated with neutral and happy emotive states. | 1 More pleasant  2 More awake  3 Either relaxed or tense |