



Cross-Cultural Phonation Patterns as Indicators of Emotional States in Film

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Abstract:

This research aims to analyse how phonation types—modal, breathy, creaky, falsetto, and whisper—signal emotional states in film dialogue. The study examines English dialogues from the 1991 American romantic comedy Father of the Bride and compares it with a Karakalpak movie, Civilizaciya(Civilization), to identify cross-linguistic and cultural differences in emotional voice quality. Auditory phonetic analysis of selected scenes—primarily regarding vocal fold vibration, airflow, and voice quality changes and their context of emotion. Results reveal that phonation variation signals specific emotions and enhances audience understanding of character psychology, while differences between the two films suggest that cultural prosody and acting traditions drive differences in the production and interpretation of emotional phonation.

Keywords: Phonation, Modal Voice, Breathy Voice, Creaky Voice, Whisper, Vocal, Vibration, Tone.

Introduction

Phonation is produced by the vibration of the vocal folds, and systematic typologies distinguish several laryngeal states that differ in glottal aperture and tissue tension. This process is fundamental to speech and singing, shaping voice quality and expressive potential. The characteristics of phonation— tension, vibration pattern, and airflow— affect the acoustic properties of voice and, consequently, the emotional impression conveyed to listeners.

People can generally distinguish between different types of phonations. A voice can be perceived as ‘breathy,’ ‘tense,’ ‘hoarse,’ and so on. This is known in voice science as the phonation type. In some languages, phonation types are used as suprasegments to differentiate phonological

meanings [1]. Phonation type is also used to express paralinguistic information, such as the creaky voice to express irritation in some languages. Such ‘phonation types’ are manifested by the shape of trans glottal airflow modulated by the activation of the laryngeal muscles and respiratory efforts. Phonation types can be seen as distributed along one continuum from voiceless (no vocal fold contacting) to glottal closure (full vocal fold contacting) [2] and along at least one other continuum of the regularity of vibration. Phonation modes can be identified by the waveform and amplitude of vocal fold (VF) vibration.

With respect to phonation classification, various linguistic approaches have been developed that account for differences in vocal fold behavior. Daniel Jones proposed a basic distinction between voiced and voiceless sounds, whereas Peter Ladefoged Ladefoged provided a universal phonation system and emphasized the following primary types [3]:

1. Modal voice
2. Breathy voice
3. Creaky voice
4. Falsetto
5. Whisper [4].

One of most recent approaches by Esling and Edmondson, The Laryngeal Articulator Model further integrates these phonation types with articulatory configurations of the epilarynx and vocal tract, providing a unified framework for describing how changes in glottal configuration translate into distinct acoustic signatures [5].

Materials and Methodology

Types of Phonation and Emotional Function

1. Modal voice.

Modal voice is generally the most common and prototypical kind of phonation; it is also known as normal voice. It is regularly used during everyday speech and is characterized by a clear tone, natural pitch, and steady volume. This kind of phonation is typified by the regular and efficient vibrating of the vocal folds, making modal voice typical of neutral, narrative, or emotionally calm speech. In the American film analyzed, modal voice appears in neutral narration and is illustrated by the lines "I used to think a wedding was a simple affair..." and "Then the day comes when she wants to get her ears pierced...". These utterances are produced with unmarked vocal fold vibration and moderate loudness, reflecting the restrained and balanced intonation patterns typical of American conversational speech [6].

Modal voice also predominates in the Karakalpak film Civilization; however, it is generally louder and broader in pitch range. This higher level of vocal energy bespeaks cultural norms of expressiveness in Karakalpak speech, whereby modal voice often sounds more emphatic and emotionally colored—even in neutral or narrative contexts. It can be noticed in dialogue: “- Assalawma áleykum, aǵa! Aykaniń úyi usimedi?” “Awa, biraq olar kóship ketti.” While both American and Karakalpak films employ modal voice as the default phonation type, they therefore vary in degree of loudness and expressive intensity, illustrating how cultural and linguistic factors condition the realization of modal voice in spoken discourse [7].

2. Breathy voice.

Another type is breathy voice or murmur. It is produced as vocal folds slightly open, vibrate and extra airflow passes. Therefore, it sounds airy and gentle voice like speaking with a quiet and soft sigh. It can be found in emotional, soft, romantic, or sad speech. For instance, “I love you...” in a soft emotional way. Many lines in breathy voice can be found in the movie as it highlights love, nostalgia, or sadness:

“She said I was her hero...”
“She looks just fabulous, just fabulous. Different! She can’t wait to see you.”
“I think Annie’s the greatest person I’ve ever met.”
“That’s Annie.” - with teary eyes
“I love you, Nina!”
“I couldn’t love anything more!”
“-Oh, Brian.
-Oh, Annie.” - to show their missing each other after short break-up
“I’ll remember this moment for the rest of my life.”

Specifically, during the wedding vow “*With this ring as a token of my love and affection, I thee wed*” breathiness assists to signal emotional vulnerability. Furthermore, the line “*I can’t sleep... I kept thinking about how this was my last night in my bed in my house...*” also demonstrates breathy phonation, reflecting sadness and anxiety. It has been found that most of the lines with breathy voice are said by the father of the bride in order to convey his deep emotional attachment to his daughter.

On the other hand, in Karakalpak film, characters do not often use breathy voice, since they mostly speaking in a loud and excited tone [8]. This is due to the fact that the film has tried to show the excitement we experience in a wedding. One example for breathy voice: “Men sizlerdi sağınp keldim”, said in an emotional tone.

3. Creaky voice.

The third type of phonation is creaky voice in which vocal folds tightly closed and irregular vibration is noticed. It results from a highly lax, tightly approximated glottis that yields irregular, low frequency pulses and a marked irregularity in the waveform [9]. It sounds sough, low and crackly — for example tired, stressed, annoyed speech. Its distinctive feature is very low pitch, rough crackling sound and glottal tension. In the film, the speaker’s authoritative tone is strengthened by the tense, irregular vibration typical of creakiness. To exemplify:

“This is ridiculous. You are too young to get married.”
“Release! Good boys.” to make dogs go away.
-Who is George Bank?
-Me! Out of anger. - Here, irritated response “Me!” is said by George to show his anger.

Similar to American film, most lines are said in order to show anger in “Civilizaciya”. For instance:

“-Ne dep tursań?”
“-Ne túsinbey qaldım?” (told by one of the guests)
“Maǵan nege aqıl úyretip tursań?” is said while quarrelling.
“-Onday qırtıp sóylemesin ayt!
-Sen aralaspa!”

One character is so nervous while answering her husband. As a result, she mainly uses creaky voice, such as: “Yaqshı, solay ma?”

4. Falsetto.

Next type is falsetto, derived from Italian meaning “false”. In falsetto, vocal folds stretched thin with high pitch and it sounds light, airy, unusually high voice. It involves extreme longitudinal stretching and stiffening of the vocal fold edges, so that only the marginal layers vibrate; this produces a high pitched, low intensity signal with reduced harmonic richness [10]. It can be differentiated by sudden pitch jump (surprise, excitement). In speech, it is usually used in emotional scenes. Examples from American movie:

“I’m engaged! I’m getting married” (Ann announcing that her boyfriend has proposed to her.)

-We’re lucky parents.

-Lucky?! Oh!

“Our plane’s about to take off... I love you very much.” (Breathy emotional voice and soft emotional farewell.)

Franck: “Hello, I’m Franck. Pleasure to mat you. Howard has affer you sumding to drink, I hop.” (Talks like Franglish.)

“-Who’s Franck Eggelhoffer?

-What?” (His wife wants to invite him; he is in disbelief because he is not their close friend.)

In latter movie, the brother of groom is always excited and joyful and he talks using falsetto in numerous scenes.

5. Whisper.

Last but not least, whisper is produced as vocal folds open and there is no vibration, only airflow [11]. It sounds quiet, breathy, soft. Mostly, speaker is hiding their voice like secret talking. For instance:

Lines	Reason of using whisper
“Brian McKenzie...”	He says to repeat the name of his daughter’s boyfriend making it inaudible to her.
- “I think he’s adorable.	
- I don’t like him. He is wearing Nikes.”	Brian and his wife whisper behind their daughter and her boyfriend making it inaudible to them.
“To George and Nina and the future of wonderful memories... Sharing the joy of our grandchildren together. Birthday parties, graduation...”	While proposing a toast, the father-in-law of his daughter starts crying emotionally.
What happened?	His daughter is crying and he doesn’t want to interrupt her.

Whispering scenes are not noticed frequently, one example from Karakalpak movie can be the conversation between three women giddying about their neighbors. They whisper to each other not to be heard by people around them.

Despite the fact that, in American film, there are some record examples of excited voice changes and sentences possibly reflecting more complex emotional states, For example, the line “Dad! ... Hi! Where are you?” jumps between modal & falsetto, hit ups on Dad! conveying excitement. The most basic one: The question, what is this — 1958? shifts from modal to gentle falsetto, reenacting a surprise, a brief sudden rise in pitch The emotional tension comes through in the sentence “From that moment on you’re panic regardless” which shifts from modal to creaky, showing that in a worried state, stress and anxiety rise [12]. The last is the lofty expression “Oh my God. “Talk about surprises” – the phrase drops from falsetto to modal, as though the speaker, surprised, has suddenly recovered their composure. Such phonation shifts demonstrate how systematic differences in vocal fold vibration and pitch are used to convey subtle emotional meanings in spoken dialogue in film.

Results and Discussion

Father of the Bride is a remake of the 1950 film of the same name. It follows George Banks

(Steve Martin), an overprotective father struggling to accept his daughter Annie's (Kimberly Williams) engagement. The film includes emotional themes of parental love, anxiety, and the necessity of letting go, combining comedic and tender moments.

George's phonation patterns provide insight into his psychological state:

- **Modal voice** reflects calm narrative or explanatory moments.
- **Breathy voice** highlights his soft and emotional side.
- **Creaky voice** signals anger or tension.
- **Falsetto** portrays surprise or exaggerated emotional reaction.
- **Whisper** conveys secrecy, intimacy, or private reflection.

Civilizaciya is a Karakalpak movie directed by Aybek Tolegenov in 2022. It portrays traditional wedding ceremony of Karakalpak people and the marriage life of Isa and his wife. It shows the unexpected events, the difficulties of groom and bride and a number of misunderstandings.

This study utilized a descriptive and comparative qualitative method to examine how phonation functions as an indicator of emotional states in two different films. The first phase of data was selected utterances from the films based on purposive sampling aimed at ensuring that the samples contained moments of distinct emotional expression and as well as significant changes in vocal quality for analysis. They watched the movies and replayed critical moments to precisely characterize phonation types [modal, breathy, creaky, falsetto, whisper]. For every relevant utterance, details of character, emotional context, and the specific vocal characteristic(s) were noted, and the phonetic analysis was done per utterance, based entirely on auditory analysis, without instrumental measurements. The analysis was conducted within the theoretical frameworks provided by classical and modern phoneticians, including Jones, Fant, Gordon and Ladefoged, a more detailed description of the behavior of the vocal folds and its association with airflow patterns is vital for classification of phonation types. In order to enhance trustworthiness, a second listener verified selected lines and all interpretations were compared to known descriptors of phonation to minimize subjectivity. Vocal cues and narrative context informed emotional categorization, maintaining the specificity and theoretical basis for the phonation and emotional meaning coupling. Then they did phonation analysis and the phonation pattern was identified to be different in these cultures.

The findings of this study demonstrate that phonation serves as a meaningful indicator of emotional states in film dialogue, particularly in *Father of the Bride* and *Civilizaciya*. Among the analyzed scenes, shifts in vocal fold vibration—such as increased airflow in breathy voice or irregular vibration in creaky voice—directly correspond to changes in emotional tone. All of the findings support the idea that phonation is not only a physical process of sound production but also a key expressive tool for conveying affective nuance.

One of the most important findings is that breathy voice is associated with tenderness, affection, and emotional vulnerability. It was frequently used in moments of sadness or affection toward family members. These observations also correlate with previous research suggesting that increased airflow and decreased glottal tension signal intimacy and sentimentality in spoken language [13]. In this sense, the films support established phonetic theory: breathy voice conveys relaxed affective states of characters.

Similarly, the usage of creaky voice in scenes of frustration or tension justifies that creakiness is related to irregular vibration and low pitch. Characters' angry or irritated responses, delivered with creaky voice, show how speakers employ glottal tension to express resistance, authority, or emotional stress.

The study also suggests that falsetto is frequently observed in moments of excitement, surprise, or exaggerated emotional display. Annie's sudden pitch jumps when announcing her engagement and in Karakalpak film the rising pitches of the brother of groom illustrate how stretched vocal folds and

heightened frequency help convey enthusiasm or shock. This aligns with the theoretical understanding of falsetto as a high-pitched and thin-stretched register often associated with heightened excitement and other states.

Whisper, characterized by absent vocal fold vibration, is used in scenes of secrecy or intimacy. Whispered dialogue between characters—especially in private or humorous situations—confirms that voiceless phonation functions as a key for confidentiality [14]. Therefore, whispering becomes a narrative strategy for signaling hidden thoughts, privacy, or emotional restraint.

Moreover, analysis of these movies shows that there is a noticeable difference in phonation patterns of these two cultures. It is mostly recognised in modal and breathy voices.

Taken together, these patterns show that phonation consistently enhances character development and emotional clarity. The film's emotional arc—from calm narration to anxiety, joy, and sentimental reflection—is supported by systematic changes in vocal quality.

However, the study has some limitations. Firstly, it focuses two films that follows the story of wedding challenges, which limits the generalizability of the findings. Phonation might be used differently in various genres or by various acting techniques. Second, the analysis is based on auditory perception rather than acoustic measurements so the potential to capture details with fidelity in fundamental frequency or airflow are limited, warranting more acoustic exploration. Finally, the emotional interpretation may be subjective, as specific vocal qualities might boost positive connotation within a community or cultural background but might be received negatively by individuals from different backgrounds [12].

The current study has these limitations in the scope of quantifying so, the future study can be performed with acoustic software for quantification. Furthermore, a comparison of phonation types in differing genres (e.g., drama, horror, animation) might reveal whether phonation—emotion mappings are universal or context-dependent.

In conclusion, the results support that phonation types: modal, breathy, creaky, falsetto, and whisper are important for emotional expression in *Father of the Bride* and *Civilizaciya*. By revealing how vocal quality shapes audience interpretation, this study highlights the value of phonation analysis for understanding emotion in cinematic dialogue [15]. Through this phonetic lens, the study demonstrates how vocal quality in film dialogue can serve as an indicator of emotional states, enhancing character development and audience engagement.

Conclusion

In conclusion, phonation types provide a principal and culture-sensitive tool for conveying emotional meaning in spoken dialogue, and this study has shown that in *Father of the Bride* and *Civilizaciya*, the main characters use modal, breathy, creaky, falsetto, and whisper voices to express a wide range of emotions, including love, joy, anxiety, excitement, frustration, and sadness. Modal voice indicates calm narrative or every day speech; breathy voice indicates tenderness and emotional vulnerability; creaky voice indicates tension or assertion of authority; falsetto indicates shock or extreme excitement; and whisper indicates confidentiality or intimacy. Based on detailed auditory phonetic analysis of selected utterances, this work illustrated how differences in mode of vocal fold vibration, glottal tension, and air flow (in addition to some glottal static properties) were associated with the mapped emotional expression (including contextually responsive dynamic voicing changes within a single utterance indicative of abrupt but marked emotional changes). The results of this study validate the proposition that phonation is not just a physiological process, but rather a conscious expressive tool, which facilitates the development of characters, steers audiences in the direction of grasping their true feelings, and heightens storytelling experience. Phonetic analysis allows voice-emotion interplay and culture interaction to be understood at a new level in a cinematic context,

which could have further applications in speech training, language teaching and performance studies. These consistent patterns provide evidence for consistent functionality, as phonation serves as an emotional marker, while further extension efforts could include acoustic measures, variety in genres, and cross-cultural comparisons to elucidate the degree of universality of these relationships between phonation and emotional expression. In these films, the use of diverse phonation types shows how vocal quality enhances audience interpretation while emphasizing a fundamental approach to physiologically successful emotional communication on screen.

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