IJAER/January-February-2025/Volume-14/Issue-1 ISSN: 2278-9677
International Journal of Arts & Education Research
(Peer-Reviewed, Open Access, Fully Refereed International Journal) Impact Factor:7.06

THE INFLUENCE OF LYRICS ON EMOTIONAL RESPONSE IN MUSIC

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Abstract

There is a great influence that the lyrics of Indian music have on the emotions of those who listen to it because of the diversity of the phrases. This study is being conducted with the intention of gaining a deeper understanding of the ways in which the meaning of Indian music lyrics might influence the emotions of those who listen to them. The participants were presented with many types of Indian music, including classical music, Bollywood music, folk music, and devotional music, along with their respective lyrical equivalents. A combination of qualitative and quantitative methods was used in the data collection process. In addition to the self-reported emotional responses, physiological markers such as heart rate and galvanic skin response were used in order to quantify emotional reactions. According to the results, lyrics have a significant role in the emotional effect of a song, particularly when they relate to the listener's sense of history, culture, or place of origin. Listeners are known to experience feelings of happiness and delight when they listen to Bollywood tunes and festive folk music. These kinds of songs feature lyrics that are lively and pleasant. Ghazals and other classic ragas, on the other hand, with their lyrics that are either melancholy or reflective, have the potential to elicit feelings of melancholy and introspection in their listeners.

Keywords: *Lyrics, Emotional, Response, Music*

Introduction

There is a range of feelings that may be evoked by music, ranging from happiness and enthusiasm to melancholy and reflection on the past. Music is a worldwide language that transcends cultural and linguistic borders. There is a widespread consensus that melodies, harmonies, and rhythms are the key drivers of emotional reaction in music; yet, the significance of words continues to be equally vital despite the fact that it is less well investigated. Lyrics, which are the linguistic component of music, have the exceptional capacity to express tales, thoughts, and feelings in a specific manner. They frequently serve to attach the emotional experience of a listener to concrete topics and settings. To fully appreciate the emotional resonance that songs have with audiences, it is essential to have a solid understanding of the relationship that exists between music and words. The atmosphere that is established by the music can be amplified, complemented, or even contrasted by the lyrics, which in turn shapes how listeners perceive and react to a

piece of music. For example, a joyful tune that is accompanied by gloomy words might provoke complicated sensations such as bittersweetness, whereas a motivating song that is accompanied by uplifting lyrics can inspire feelings of empowerment and enthusiasm. This study intends to analyse the effect of lyrics on emotional responses in music, taking into consideration the ways in which aspects such as lyrical topics, genre, cultural context, and personal relevance influence listener emotions (also known as "personal relevance"). Through an analysis of the emotional impact of instrumental and lyrical renditions of songs from a wide range of musical genres, the purpose of this study is to determine the extent to which lyrics contribute to the emotional story of music. These findings have ramifications for a variety of fields, such as music therapy, where lyrics might be used to induce or modulate emotions, and the music industry, where the emotional appeal of lyrics plays a crucial part in composition and audience engagement. Both of these fields are impacted by the findings of this study. We hope that by doing this inquiry, we will be able to shed light on the complex link that exists between music and words, therefore contributing to a more profound comprehension of the emotional force that they possess when united.

A vast amount of study has been conducted in the fields of psychology, neurology, and musicology on the subject of the emotional influence that music has. It has been established via research that some aspects of music, such as pace, rhythm, and harmony, have the ability to elicit physiological and psychological reactions, which can have an effect on mood, arousal, and even the recall of memories. Despite the fact that lyrics have the power to communicate narratives and concepts that strongly engage with listeners, the function that lyrics play in this emotional equation is still underexplored. In addition to offering levels of interpretation that instrumental music alone might not be able to communicate, lyrics have the ability to provide semantic meaning to a song. It is possible, for instance, for the same tune to elicit a variety of feelings depending on whether the words are about love, sorrow, or success. A strong medium for communication and self-expression, lyrics may also build emotional connections by reflecting personal experiences, cultural ideals, or social challenges. This makes lyrics an effective tool for self-expression and communication. There is also a significant contribution made by cultural and language elements to the emotional impact that lyrics have. The lyrics of songs that are sung in the listener's native tongue or songs that are in line with their cultural background frequently provide the listener with a deeper meaning and emotional resonance.

There is a possibility that the overall quality of this study of Indian music might be improved by including the inherent cultural and linguistic diversity of each location. Bollywood, bhangra, and regional folk traditions are examples of popular music in India, whilst Hindustani and Carnatic music are examples of the classical traditions that are practiced in India. Different linguistic and regional variations, in addition to the wide range of musical instruments that are used in Indian songs, have a significant influence on the musical impact and emotional evocation of the lyrics. Lyrics are an essential component of a wide variety of Indian musical traditions, particularly Bollywood and folk music, both of which are aimed at conveying stories and evoking feelings via the medium of song. Music in Hindi and other regional languages is characterised by the use of poetry, metaphor, and intricate narratives, all of which are designed to elicit powerful emotions in the listeners. For example, Bollywood music is distinguished by its enormous orchestral arrangement that integrates percussion, electronic sounds, and strings to produce a one-of-a-kind combination of dramatic narrative and musical intensity. This is one of the defining characteristics of Bollywood music.

In addition, vocal and instrumental performances are given a high level of importance in classical Indian music. However, the lyrics, particularly in works like as bhajans, qawwalis, or thumris, are strongly

connected to the mood or melodic scales (ragas) that are being performed. Listeners often believe that specific ragas are associated with particular feelings, such as happiness, sorrow, devotion, and so on. The emotional impact of the lyrics may vary based on the raga and the mood that it is paired with.

METHODOLOGY

Agreement metrics

In the following, we employ inter-rater reliability statistics, namely Krippendorff's α, to evaluate the degree of agreement between the annotated data and various individual traits, as well as the comprehension of the semantic content of music. The definition of Krippendorff's coefficient is as follows: "α represents the degree to which the proportion of the differences (among all observations) that are in the error deviates from perfect agreement." In other words, it is the ratio of the observed to the predicted above-chance agreement. In general, the symbol α is defined as:

$$\alpha = 1 - \frac{D_o}{D_e} \qquad (1)$$

where D_o constitutes the degree of discord that has been noticed:

$$D_o = \frac{1}{n}\sum_c \sum_k o_{ck} \cdot {}_{metric}\delta^2_{ck} \qquad (2)$$

and D_e is a measurement of the typical disagreement that would occur given the possibility:

$$D_e = \frac{1}{n(n-1)}\sum_c \sum_k n_c \cdot n_k \cdot {}_{metric}\delta^2_{ck} \qquad (3)$$

The variables o_{ck}, n_c, n_k The values of the observed coincidences between c and k values or rankings are the frequencies of those values, and the total number of paired c − k values or ranks is denoted by the variable n. In this particular scenario, if c equals k, then these numbers represent the calculated coincidences that have been noticed (that is, all of the users have the same rating on a certain emotion). When c6=k is present, on the other hand, there exist ratings that are not matched. An advantage of using the α statistic is that it may accommodate any number of observers, any type of metric (nominal, interval, or ordinal), it can deal with incomplete or missing data, and it does not necessitate a minimum sample size. If there is no disagreement (Do = 0), then there is complete dependability (α = 1) in the situation. On the other hand, when the degree of agreement and disagreement is determined by chance (De = Do), there is a lack of dependability (α = 0). The value of α may be less than zero due to the presence of sampling mistakes, which occur when the sample sizes are insufficient, and systematic disagreements, which occur when the level of agreement is lower than what would be predicted by chance.

Depending on the data ${}_{metric}\delta_{ck}$ According to the kind of metric, the difference function, which is the squared difference between any two values or rankings c and k, functions differently depending on the type of metric. It is important to note that ordinal metrics, which involve the utilisation of Likert answer styles for emotional assessments, are standardised as $0 \leq {}_{ordinal}\delta^2_{ck} \leq 1$:

$$_{ordinal}\delta_{ck}^2 = \left(\frac{\sum_{g=c}^{g=k} n_g - \frac{n_c + n_k}{2}}{n - \frac{n_{c_{max}} + n_{c_{min}}}{2}} \right)^2 \quad (4)$$

where c_{max} is the largest and c_{min} is the smallest rank among all ranks.

Music material

Our agreement study was conducted using the 4Q emotion data set. 22 musical samples that were previously classified into the four arousal-valence quadrants—Q1 (A+V+), Q2 (A+V-), Q3 (A-V-), and Q4 (A-V+)—are included in it.. After collecting 30-second audio snippets using the AllMusic API, we compared the original AllMusic Tags with Warriner's list of 289 emotion tags. AV space was converted to emotion tags in this manner. Finally, they used a human blind validation to remove inadequate components (such as ones that had speech or noise). The data collection is well-balanced, with 900 clips overall and 225 pieces in each quadrant. We use the Geneva Emotion Music Scale (GEMS) for emotion tags and Table 1 for a list of fundamental emotions in order to assess the different compositions. We changed Disgust to Bitterness in an effort to create a more evenly distributed set of emotions throughout the four quadrants (see Table 2). But Q3 only contains two emotions, whereas other quadrants have three. For this experiment, we conducted the fragment selection using an emotional inquiry. Since not all of the emotions were included in the metadata, the songs were selected using synonyms, as can be seen in Column 3. Following the query-automated music selection, two lyric excerpts per emotion were manually selected (the other two tracks are instrumental).

Table 1. Selected feelings and synonyms for the music selection inquiry.

Quadrants	Emotions	Synonyms
Q1(A+V+)	Joyful activation	joy
	Power	-
	Surprise	-
Q2(A+V-)	Anger	angry
	Fear	anguished
	Tension	tense
Q3(A-V-)	Bitterness	bitter
	Sadness	sad
Q4(A-V+)	Tenderness	gentle
	Peace	-
	Transcendence	spiritual

Few studies have examined various musical genres in the context of music emotion research. Additionally, a number of studies describe the WEIRDNESS of music psychology research as the fact that most experiment subjects are educated, wealthy, Western, and democratic. It is challenging to locate annotated emotion data sets that include music with lyrics in languages other than English because our methodology relies on re-annotating already annotated data. However, we were able to incorporate three Spanish-language songs. Table 2 displays a summary of the previously annotated emotions, quadrants, lyrics, and song details.

Table 2. Selection of songs based on feelings and facts about the quadrants.

Emotion	Q	Lang.	Artist-Song
Anger	Q2	Eng.	Disincarnate-In Sufferance
		Inst.	Obituary-Redneck Stomp
Bitterness	Q3	Eng.	Liz Phair- Divorce Song
		Eng.	Lou Reed-Heroine
Fear	Q2	Inst.	Joe Henry-Nico Lost One Small Buddha
		Eng.	Silverstein-Worlds Apart
Joy	Q1	Eng.	TaioCruz-Dynamite
		Eng.	Miami Sound Machine-Conga
Peace	Q4	Eng.	Jim Brickman-Simple Things
		Spa.	Gloria Estefan-Mi Buen Amor
Power	Q1	Eng.	Ultra Montanes-Anyway
		Eng.	Rose Tattoo-Rockn Roll Outlaw
Sadness	Q3	Eng.	Motorhead-Deadand Gone
		Spa.	Juan Luis Guerra-Sobremesa
Surprise	Q1	Eng.	The Jordanaires- HoundDog
		Eng.	Shakira-Animal City
Tenderness	Q4	Eng.	Celine Dion-Beautiful Boy
		Spa.	Beyonce- Amor Gitano
Tension	Q2	Eng.	Pennywise-Pennywise
		Eng.	Squeeze-Here Comes That Feeling

Transc.	Q4	Eng.	Steven C. Chapman-Made for Worshipping
		Eng.	Matisyahu- On Nature

Annotation Methodology

The framework of our research is as follows: initially, we offer a concise explanation to the participants in order to demonstrate the distinction between induced and perceived emotions. In addition, in order to make the comments more understandable, we make use of synonyms for each feeling (see Figure 1). We had to construct online questionnaires in order to get feedback from users.

Table 3. The filtering of all participants by preference, familiarity, and lyrics understanding (positive and negative) affects Krippendorff's α for each emotion. We employ a 5-point Likert scale, where a score of 3 indicates agreement or disagreement, and a score of 0 indicates strong disagreement.

			Q1			Q2			Q3		Q4		
Configuration	**Ratings**	**%**	**joy**	**surp.**	**pow.**	**ang.**	**fear**	**tens.**	**sad**	**bit.**	**peace**	**tend.**	**trans.**
All	23562/23562	100.00%	0.401	0.064	0.268	0.355	0.193	0.274	0.286	0.24	0.367	0.346	0.057
By Preference(>3)	9427/23562	40.01%	0.407	0.075	0.267	0.282	0.165	0.185	0.32	0.228	0.368	0.35	0.064
By Preference(<3)	7755/23562	32.91%	0.321	0.039	0.261	0.384	0.179	0.332	0.251	0.203	0.372	0.348	0.046
By Familiarity(>3)	3795/23562	16.11%	0.456	0.052	0.153	0.332	0.262	0.157	0.329	0.318	0.224	0.194	0.034
By Familiarity(<3)	18183/23562	77.17%	0.313	0.047	0.277	0.345	0.167	0.292	0.243	0.194	0.408	0.379	0.069
By Understanding(>3)	11616/23562	49.30%	0.424	0.079	0.268	0.28	0.183	0.21	0.324	0.274	0.334	0.336	0.043
By Understanding(<3)	8261/23562	35.06%	0.336	0.035	0.251	0.375	0.181	0.318	htbp0.231	0.181	0.362	0.299	0.067

the use of two samples for each feeling, resulting in a total of 22 excerpts, was applied to four different languages: Spanish 1, English 2, German 3, and Mandarin 4. We also gather personal information on

listeners' musical expertise, musical preferences, familiarity with the stimulus, understanding of the lyrics, and demographics. In addition to grading listeners' emotions, we also collect information about personal information. The loudness of the survey was adjusted with regard to a sinusoid at 1 kilohertz, and all of the audio extracts were normalised from -1 to 1. Additionally, each participant was required to finish the step that came before it. An illustration of one of the questions that were asked in the survey may be seen in Figure 1. We make the findings of the Music Sophistication Index accessible to the participants at the conclusion of the survey as a token of our appreciation for their participation. This allows us to evaluate the level of musical expertise possessed by the individuals filling out the survey.

RESULTS AND DISCUSSION

Both Tables 3 and 4 demonstrate that the involvement up to this point has been unevenly distributed. When the level of agreement with the emotion is higher by 0.05 than the level of agreement tested across 126 individuals from all languages, which is indicated in yellow, the colour coding displays green. On the other hand, where the difference is smaller than -0.05, the cell is of the red colour. In the beginning, it is possible to observe that the level of agreement for complex emotions, such as resentment, fear, power, surprise, and transcendence, is extremely low (around 0.2). On the other hand, a more profound consensus is formed for more fundamental feelings, such as wrath, pleasure, tranquilly, melancholy, and tenderness. Because we are deleting the ratings of fragments that were or were not favoured, familiar, or understood by the listeners, we make use of the word filter. It is also possible to measure the level of agreement amongst raters across all songs by using both positive and negative filters. Due to the fact that we employ a Likert answer structure with five points, we consider positive ratings to be more than three (neither agree nor disagree) and negative ratings to be fewer than three (see Figure 1). 1. From this point forward, we will refer to the filters and emotions as a combination pair. For example, whenever we talk about joy, we are referring to the positive and negative preferences for the emotion joy. When it comes to questions 1 and 3, the level of agreement is greater when using a positive filter as opposed to a negative filter for all of the filters (with the exception of their power filter).

[1] https://www.psytoolkit.org/cgi-bin/psy2.5.3/survey?s=pa92w
[2] https://www.psytoolkit.org/cgi-bin/psy2.5.3/survey?s=hVTWu
[3] https://www.psytoolkit.org/cgi-bin/psy2.5.3/survey?s=gUEny
[4] https://www.psytoolkit.org/cgi-bin/psy2.5.3/survey?s=APaWq

This is a familiarity. Both quadrants Q1 (A+V+) and Q3 (A-V-) are considered to be quite different and "universal" in their respective categories. Conversely, quadrants Q2 and Q4 demonstrate the reverse behaviour, agreement tends to be lower negative than positive filtering for all the filters (with the exceptions of fear - familiarity, fear - understanding, tenderness - preference, transcendence - preference, and tenderness - understanding). Exceptions are what we call situations in which the results do not conform to the tendencies that were discussed earlier.

Table 4. Krippendorff's α for each emotion and four questionnaires.

Emotions	Eng.(26)	Spa.(56)	Man.(27)	Ger.(17)	All(126)

anger	0.429	0.311	0.367	0.482	0.364
bitter	0.278	0.209	0.155	0.278	0.202
fear	0.241	0.175	0.091	0.207	0.171
joy	0.304	0.437	0.311	0.476	0.372
peace	0.401	0.332	0.401	0.438	0.371
power	0.379	0.287	0.296	0.325	0.289
sad	0.330	0.343	0.279	0.378	0.326
surprise	0.041	0.055	0.068	0.218	0.075
tender	0.444	0.314	0.452	0.581	0.396
tension	0.264	0.324	0.282	0.323	0.296
transc.	0.080	0.049	0.083	-0.012	0.057

Furthermore, due to the unequal participation in the surveys, it is necessary to analyse all of the subjects at the same time. It is essential to take notice that Table 4 presents an evaluation of the level of agreement among subjects, whereas Table 3 presents an evaluation of the level of agreement across all subjects who chose a song using a certain filter. As a result of this, Table 3 includes information on the amount of ratings that are taken into consideration when applying the filters. In the instance of the familiarity filter, it is essential to realise that just sixteen percent of the evaluations were deemed to be favourable. This indicates that the chosen music (and the personal memories that are associated with it) need to have a lower impact on the experiment, and that this filter is imbalanced when it comes to judging agreement. It is expected that the comparison of the familiarity filter would be quite noisy due to the fact that agreement is evaluated based on the number of participants and the number of ratings that were collected. Among the exceptions, fear - familiarity and power - familiarity, there is a difference of 12% that might be explained by this. The remaining pairs of exceptions, on the other hand, exhibit a fluctuation of between one and three percent when the filters are applied. These exceptions include fear and understanding, tenderness and preference, transcendence and preference, and tenderness and understanding. There is a fluctuation of 1-18% of the tendencies depending on the mood and filter, while the remaining 27 possibilities of pairings exhibit the overall behaviour that was discussed before.

Conclusions

This study emphasises how lyrics greatly impact our emotional reactions to music, showing how they may enrich our listening experience with context, meaning, and depth. Lyrics often provide a narrative framework, leading listeners towards particular feelings and interpretations, while musical components set the tone and atmosphere of a song. The results show that lyrics greatly increase emotional involvement, especially when they touch on common social topics, cultural values, or individual experiences. Lyrics that are upbeat and optimistic tend to make listeners feel even better, while lyrics that are downbeat and reflective might make them experience a range of complicated emotions, including grief, nostalgia, or empathy. Lyrics have a more profound impact on listeners' emotions in narrative-driven genres, when the focus is on the tale told through music. Genre, language familiarity, and personal listener preferences are among the variables that affect the effect of lyrics, according to the study. Lyrics' emotive power may take a back seat to other musical aspects, such as melody or harmony, in instrumentally-heavy genres. Listeners' cultural and linguistic backgrounds also influence how they understand and relate to lyrics. Numerous domains stand to benefit from these discoveries. In music therapy, treatments can be better designed to elicit desired

emotional reactions by gaining a better grasp of the dynamic relationship between lyrics and music. To maximise audience engagement, the music business may use insights regarding lyrical influence to inform songwriting, production, and marketing initiatives. This information is also useful for academics and teachers who want to delve deeper into the emotional and cognitive impacts of song lyrics on listeners. Finally, lyrics are a potent weapon in the emotional weaponry of music; they can turn melodies into stories that are both vivid and emotionally intense. Their contribution of detail and background enhances the emotional resonance and communication potential of music by making it more relatable to the listener. The memory, identification, and cultural expression functions of lyrical material, as well as its long-term psychological impacts, could be the subject of future research.

REFERENCES

[1] Anna Aljanaki, Yi-Hsuan Yang, and Mohammad Soleymani. Developing a benchmark for emotional analysis of music. PLoS 1, pages 1–22, 2017.

[2] Emmanuel Bigand and Jean-Julien Aucouturier. Seven problems that keep MIR from attracting the interest of cognition and neuroscience. Journal of Intelligent Information Systems, 41(3):483–497, 2013.

[3] Òscar Celma, Perfecto Herrera, and Xavier Serra. Bridging the Music Semantic Gap. In Workshop on Mastering the Gap: From Information Extraction to Semantic Representation, volume 187, Budva, Montenegro, 2006. CEUR, CEUR.

[4] Paul Ekman. An argument for basic emotions. Cognition and Emotion, 6(3-4):169–200, 1992.

[5] Arthur Flexer and Thomas Grill. The Problem of Limited Inter-rater Agreement in Modelling Music Similarity. Journal of New Music Research, 45(3):239–251, 2016.

[6] Joseph Henrich, Steven J. Heine, and Ara Norenzayan. The weirdest people in the world? Behavioral and Brain Sciences, 33(2-3):61–83, 2010.

[7] Perfecto Herrera. MIRages : an account of music audio extractors, semantic description and contextawareness, in the three ages of MIR. PhD thesis, Universitat Pompeu Fabra, 2018.

[8] Kate Hevner. Experimental studies of the elements of expression in music. American Journal of Psychology, 48(2):246–268, 1936.

[9] Patrik N Juslin. Perceived Emotional Expression in Synthesized Performances of a Short Melody: Capturing the Listener's Judgment Policy. Musicae Scientiae, 1(2):225–256, 1997.

[10] Patrik N. Juslin. Handbook of Music and Emotion: Theory, Research, Applications. Oxford University Press, Oxford, 2010.

[11] Patrik N. Juslin. Musical Emotions Explained. Oxford University Press, Oxford, 1 edition, 2019.

[12] Klaus H. Krippendorff. Content Analysis: An Introduction to Its Methodology. SAGE Publications, 2 edition, 2004.

[13] Petri Laukka. Categorical perception of vocal emotion expressions. Emotion (Washington, D.C.), 5:277–295, 2005.

[14] Daniel Müllensiefen, Bruno Gingras, Jason Musil, and Lauren Stewart. The Musicality of Non-Musicians: An Index for Assessing Musical Sophistication in the General Population. PLoS ONE, 9(2):89642, 2014.