Original Article

Dancing with Nine Colours:
The Nine Emotional States of Indian *Rasa* Theory

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'I see you not from your face
I see You, from – Me.'

Abstract:

This is a brief review of the *Rasa* theory of Indian aesthetics and the works I have done on the same. A major source of the Indian system of classification of emotional states comes from the '*Natyasastra*', the ancient Indian treatise on the performing arts, which dates back to the 2nd Century AD (or much earlier, pg. LXXXVI: *Natyasastra*, Ghosh, 1951). The '*Natyasastra*' speaks about 'sentiments' or '*Rasa*s' (pg.102: *Natyasastra*, Ghosh, 1951) which are produced when certain 'dominant states' (sthayi *Bhava*), 'transitory states' (vyabhicari *Bhava*) and 'temperamental states' (*sattvika Bhava*) of emotions come together (pgs.102, 105: *Natyasastra*, Ghosh, 1951). This *Rasa* theory, which is still widely followed in classical Indian performing arts, classifies eight *Rasa*s or sentiments which are: *Sringara* (erotic), *Hasya* (comic), *Karuna* (pathetic), *Raudra* (furious), *Vira* (heroic), *Bhayanaka* (terrible), *Bibhatsa* (odious) and *Adbhuta* (marvellous). There was a later addition of the ninth sentiment or *Rasa* called *Santa* (peace) in later Sanskrit poetics (pg.102: *Natyasastra*, Ghosh, 1951). According to ancient Indian aesthetics (especially in the context of Bharatas' '*Natyasastra*', Anandavardhana's '*Dhvanyaloka*' and Abhinavagupta's '*Abhinavabharati*'), '*Rasa*' is the relishable state of elemental human emotions called '*Bhava*s'. Bharata's '*Natyasastra*' originally spoke of eight *Rasa*s. The concept of the 9th *Rasa* was a later interpolation by the Kashmiri Shaivist Abhinavagupta (10th Century AD) and also his predecessor Anandavardhana (9th Century AD). Abhinavagupta extends the eight *Rasa*s by adding the concept of the *Santa Rasa* which he regards as the essence of all *Rasa*s. It is this 9th *Rasa* which according to Abhinavagupta lets the *Rasika* attain the aesthetic detachment and savour the essences of all other *Rasa*s and therefore the true aesthetic delight. The introduction of 9th *Rasa* integrates the concepts of Bharata's *Rasasutra* and Patanjali's *Yoga* theory – the detachment necessary to introspect inwards into the inherent state of freedom and bliss (aesthetic consciousness).

Indian system of classification of emotional 'states' (not emotions):

A major source of the Indian system of classification of emotional states comes from the '*Natyasastra*', the ancient Indian treatise on the performing arts, which dates back to the 2nd Century AD (or much earlier, pg. LXXXVI: *Natyasastra*, Ghosh, 1951). The '*Natyasastra*' speaks about 'sentiments' or '*Rasa*s' (pg.102: *Natyasastra*, Ghosh, 1951) which are produced when certain 'dominant states' (sthayi *Bhava*), 'transitory states' (vyabhicari *Bhava*) and 'temperamental states' (*sattvika Bhava*) of emotions come together (pgs.102, 105: *Natyasastra*, Ghosh, 1951). This *Rasa* theory, which is still widely followed in classical Indian performing arts, classifies eight *Rasa*s or sentiments which are: *Sringara* (erotic), *Hasya* (comic), *Karuna* (pathetic), *Raudra* (furious), *Vira* (heroic), *Bhayanaka* (terrible), *Bibhatsa* (odious) and *Adbhuta* (marvellous). There was a later addition of the ninth sentiment or *Rasa* called *Santa* (peace) in later Sanskrit poetics (pg.102: *Natyasastra*, Ghosh, 1951).

The 9th *Rasa* (aesthetic consciousness – Ghosh, 1951; Raghavan, 1940; Barlingay, 1981):
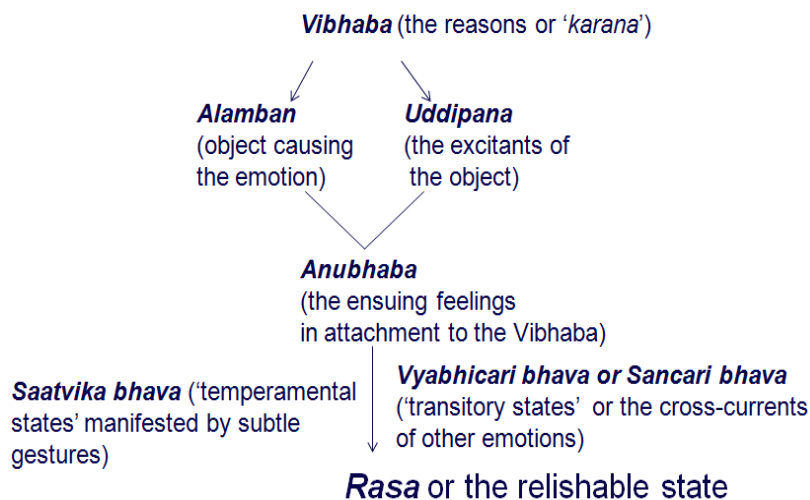
According to ancient Indian aesthetics (especially in the context of Bharatas' '*Natyasastra*', Anandavardhana's '*Dhvanyaloka*' and Abhinavagupta's '*Abhinavabharati*'), '*Rasa*' is the relishable state of elemental human emotions called '*Bhava*s'. Bharata's '*Natyasastra*' originally spoke of eight *Rasa*s. The conversion of *Bhava* to *Rasa* as explained in Indian aesthetics is as follows:

RASA **Theory according to** *Natyasastra*

Dominant states ⟶ **Sthayi Bhava**

Relishable state of the dominant emotion ⟶ **Rasa**

From Dominant state (*Sthayi Bhava*) to Relishable state (Rasa):

Vibhaba (the reasons or '*karana*')

Alamban
(object causing
the emotion)

Uddipana
(the excitants of
the object)

Anubhaba
(the ensuing feelings
in attachment to the Vibhaba)

Saatvika bhava ('temperamental
states' manifested by subtle
gestures)

Vyabhicari bhava or Sancari bhava
('transitory states' or the cross-currents
of other emotions)

Rasa or the relishable state

The concept of the 9th *Rasa* was a later interpolation by the Kashmiri Shaivist Abhinavagupta (10th Century AD) and also his predecessor Anandavardhana (9th Century AD). In *Abhinavabharati*, Abhinavagupta explains the essence of the *Rasa* theory of Bharata in addition to the theory of *Abhivyakti* propounded in Anandavardhana's *Dhvanyaloka*.

Abhinavagupta extends the eight *Rasa*s by adding the concept of the *Santa Rasa* which he regards as the essence of all *Rasa*s. It is this 9th *Rasa* which according to Abhinavagupta lets the *Rasika* attain the aesthetic detachment and savour the essences of all other *Rasa*s and therefore the true aesthetic delight. The introduction of 9th *Rasa* integrates the concepts of Bharata's *Rasasutra* and Patanjali's *Yoga* theory – the detachment necessary to introspect inwards into the inherent state of freedom and bliss (aesthetic consciousness).

Aesthetic delight is thus at once an emotional exaltation and a state of serenity (Chaudhury, 1964). It has a different quality or flavour from that aroused in life. Ordinary emotions are sublimed into *Rasa* through aesthetic delight. It is generated when the *Rasika*:

    01. Undergoes suspension of disbelief.
    02. Dissociate work of art from surroundings.
    03. Dissociate character from the actor.

The secret of aesthetic delight is thus detached contemplation and it is not felt as a personal psychical affection (Chaudhury, 1964).

The Facial Action Units of Indian performing arts:

Current facial emotion research is hugely influenced by the Facial Action Coding System (FACS) manual as formulated by the Paul Ekman research group. This is a research tool that explains how to categorize facial behaviours based on the muscles that produce them. The *Natyasastra* by Bharata and the *Abhinaya Darpana* by Nandikesvara (Coomaraswamy & Duggirala, 1917) are two of the most reliable treatise which elaborates a categorization of facial action units for facial behaviour and emotion according to the Indian context. Apart from clearly elaborating the facial zones for each emotion, there has also been an extensive analysis of the various eye glances for different facial behaviours. Table 1 gives a short, summarized description of the different facial action units for the nine different emotional states as well as the role of specific eye glances for each emotion. It is evident from the texts that a significant amount of attention was placed on the eyes. This summary is adapted from the *Natyasastra* (Ghosh, 1951) as well as *Abhinaya Darpana* (Coomaraswamy & Duggirala, 1917).

Table 1 [Adapted from the translations of *Natyasastra* (Ghosh, 1951) & *Abhinaya Darpana* (Coomaraswamy & Duggirala, 1917)]:

The emotional states	Facial Zones	Eye Glance type
Sringara (erotic, dominant state: love)	Eye, Eyebrows (clever movements), Mouth (smiling).	Raising the eyebrows and looking out of the corners of the eyes.
Hasya (comic, dominant state: mirth)	Lips, Nose, Cheeks, Eyes, Teeth conveying smile, moderate laughter or excessive laughter.	Fluttering, pleasant, twinkling eyes.
Karuna (pathetic, dominant state: sorrow)	Eyes (with/without shedding tears), Mouth.	A downcast glance, half-revealed, with tears, benevolent, the black pupil slowly moving, regarding the tip of the nose.
Raudra (furious, dominant state: anger)	Eyes (red), Eyebrows (knitting of eyebrows), Lips (biting of lips), Cheeks.	The pupils fixed and the lids not moved, the brows contracted and raised.
Vira (heroic, dominant state: energy)	Eyes (radiant, direct, open, rather majestic, self-controlled).	The pupils at rest.
Bhayanaka (terrible, dominant state: terror)	Mouth (drooping), Eyes.	The eyelids raised and fixed, the pupil bright and fluttering.
Bibhatsa (odious, dominant state: disgust)	Mouth and Eyes (narrowing down).	No specific glance mentioned.
Adbhuta (marvellous, dominant state: astonishment)	Eyes (wide open).	Quickly raised, straight-staring.
Santa (peace)	Eyes (the peaceful glance of dispassion). Not mentioned by Bharata but mentioned in Abhinaya Darpana.	Gradually closing the lids, the eyes slightly moving, the pupils moving to the comers.

Linking *Rasa* theory with Western studies: rationale for studying *Rasa*s:

According to Westernized versions of emotion classification, there are Basic or Universal emotions (Paul Ekman, 1971, 1984, 1992) which are happiness, sadness, fear, anger, surprise, disgust (later addition: contempt; Paul Ekman, 1971, 1984, 1992). However, there are also Background emotions sets which are: well-being-malaise; calm-tense; pain-pleasure; Antonio Damasio, 1999), as well as Self-referential social emotions which, are embarrassment, guilt, shame, jealousy, envy, empathy, pride, admiration; (Bennett & Gillingham, 1991; Hareli et al., 2002, 2006; Oatley & Johnson-Laird, 1987; Tangney & Fischer, 1995). Also, there are pioneering works of scientists like Lisa Feldman Barrett (Barrett, 2006) who questions Ekman's concepts of discreetness of emotions.

Apart from defining the boundaries of universal emotions, research in emotion science also places equal emphasis on trying to understand the interplay of the different orchestrated processes that give rise to a basic emotion (Barrett, 2006; Panksepp, 1994; Kagan, 1997). For example, Jaak Panksepp (1994, 2010), defined primary processes of emotion (not the basic or universal emotions of Ekman) as primary sub-neocortical processes of emotion having their corresponding affective states which can be artificially generated by brain stimulation in animals. Also, the four-step cascade process proposed by Jerome Kagan (1997) defines a provocative event that leads to brain change and subsequently leads to a feeling and the interpretation of the feeling gives rise to an emotion.

We can find startling similarities between the *Rasa* theory (its concepts of the generation of *Rasa*s from the *Bhava*s) with the works of Panksepp, (1994, 2010) and Kagan (1997). However, there had been very little previous work done on the perception or brain science of emotional states based on *Rasa* theory mostly due to the lack of awareness regarding the science of the *Rasa* theory among the scientific community. One behavioural study was conducted by Hejmadi et al., (2000) which investigated the identification of these emotions across cultures. An image processing study was conducted by Srimani and Hegde (2012) for investigating the variations in facial features based on nine *Rasa*s. The study proposes a tool for the design of an intelligent emotion recognition system but does not offer a psychophysical or brain-based perspective on how these individual emotions differ in the way they affect our perceptual process.

Natyasastra and Popular Indian Cinema:

[Based on the theoretical propositions by Mukhopadhyay, D. (2021) – Rethinking the psychology of film melodrama: A theoretical framework integrating social appraisal and cultural psychology. *PsychArchives.* https://doi.org/10.23668/psycharchives.5282 [Full paper link]

As an avid film watcher from a very young age of both world and Indian cinema, I was intrigued by the distinctive melodramatic style of popular Hindi cinema of India (commonly known as Bollywood, Joshi., 2015). and the overwhelming effect that it has on the Indian public in general often in sharp contrast to the lukewarm and cynical critical response that it generates from European/American audience/critics (by the term 'melodramatic' I am currently referring to the definition and meaning as implied by Ben Singer in the context of film studies: *'a set of subgenres that remain close to the heart and hearth and emphasize a register of heightened emotionalism and sentimentality.'*

The history of cinema and the history of melodrama studies tell us how the use of film melodrama across cultures had its distinctive versions and transformations [Brooks & James (1976), Hays & Nikolopoulou (1999), Hadley (1997)].

They also show how the use of melodramatic techniques in popular cinema across different cultures resulted in the development of indigenous film styles. These film styles conform to the aesthetic and emotional experiences and preferences of the audience of a particular culture. I was fascinated by this remarkable inter-cultural difference in taste (regardless of intra-cultural variability and cross-cultural influences) when it comes to appreciating a particular cinematic style. I believed that this variability of preference across cultures might not solely be an obvious phenomenon of changing tastes due to different socio-political-historical upbringing (as explained in most existing discourses on film studies [Vasudevan (2011), Matusitz & Payano (2012)] but might be driven by a strong, inherent behavioural-psychological predisposition deep-rooted in the emotion system of a specific culture.

Cinema is an artistic medium that can evoke a wide range of emotional states in the audience. One of the ways it can do so is by establishing an inter-personal relationship between the film-actor and the audience following the social-appraisal theory - the distinctive feature in film being, the actor does not have a live presence. In the film, the dynamics of social appraisal is felt between an actor and the audience albeit uni-directionally. A unique form of the social appraisal process might occur between multiple actors in a film which in turn can influence the social appraisal mechanism of the audience over time (bi-directionally between actors and uni-directionally between the actors and audience). Here the dynamics of emotion elicitation has a triangular relationship between the actors and the audience.

Film-acting itself varies with the general style of film-making across different cultures. For example, though the divisions and demarcations are not set in concrete and there is often an overlap of styles, still, two distinct styles of film-acting can be seen in popular Euro-American and popular Asian cinema. Popular American (Hollywood) film-acting is often characterized by the famous Lee Strasberg's individualistic method-acting which is based upon the idea that the character's context with his own real-life experience [Hull, 1985]. On the contrary, popular mainstream Indian cinema since its

beginning has been heavily influenced by the *Rasa* theory of '*Natyasastra*' - which is predominantly inter-personal and based on conveying the emotion to a spectator as externally and evidently as possible [Ibkar, 2015]. The extraordinary popularity of mainstream Indian cinema among the Indian audience is undeniable and cannot be simply explained by the lack of exposure of a class of Indian audience to world cinema. The inter-personal relationship that the Indian audience experience with the Indian actor in a popular Indian movie while getting emotionally overwhelmed cannot be simply ignored by undermining the intellectual standards of the audience at least when comparing between two equally good (or equally bad) Hollywood and Indian films.

Work by the author:

I have previously proposed the 'dual-phase oscillation hypothesis' (Mukhopadhyay, 2014) to answer the problem of the 'aesthetic paradox'. The hypothesis proposes that aesthetic delight is the dynamic, oscillatory balance between Suspension of Disbelief (SD) and Introspective Detached Contemplation (IDC). SD is whereby the person experiencing art temporarily suspends the belief of surface reality and the phenomenon of Introspective Detached Contemplation (IDC) is whereby the same person while experiencing the same art, reflects on the artistic phenomenon and is simultaneously aware of the surface reality. The hypothesis is primarily based on two previous neuroscientific findings (Mukhopadhyay, 2014) which uses two separate neuro-imaging techniques (MEG and fMRI respectively) to find that art appreciation consists of two separate temporal phases. My paper (Mukhopadhyay, 2014) highlighted how these works could be integrated with my proposed hypothesis to attain a complete picture. The DPO hypothesis is based upon the fact that there is temporal segregation of phases in art appreciation. The temporal transition between two phases exists although the transition may be unperceived due to indiscernible temporal difference (a difference of milliseconds, as found in the neuro-imaging studies) such that the feeling of aesthetic delight may appear as a uniform non-transitional activity (hence the apparent paradox is generated). My research domain at the Centre for Cognitive science, IIT Gandhinagar, India, included behavioural, EEG and Eye-tracking based study of human emotions using complex naturalistic stimuli like films and studying the visual scans of facial close-ups of paintings and face-database. As a part of my cognitive science training in India, I conducted an EEG study examining emotional states and expressiveness in popular Bollywood and Hollywood movies which were accepted as a talk at the Biennial Conference of the International Association of Empirical Aesthetics at the University of Vienna, 2016. In that study, we characterized functional brain networks and emotional centres based on *Rasa* theory of Indian aesthetics (Papers: i) Tripathi R., Mukhopadhyay D., Singh C.K., Miyapuram K.P., Jolad S. (2020). Characterization of Functional Brain Networks and Emotional Centers Using the Complex Networks Techniques, *Complex Networks 2019, SCI 882, pp. 854–867, 2020, in: H. Cherifi et al. (Eds.): Complex Networks and Their Applications VIII. © Springer Nature Switzerland AG,* https://doi.org/10.1007/978-3-030-36683-4_68 and ii) Sonawane D., Pandey P., Mukopadhyay D., Miyapuram K.P. (2021). Movie Identification from Electroencephalography Response Using Convolutional Neural Network. In: Mahmud

M., Kaiser M.S., Vassanelli S., Dai Q., Zhong N. (eds) *Brain Informatics*. BI 2021. Lecture Notes in Computer Science, vol 12960. Springer, Cham. https://doi.org/10.1007/978-3-030-86993-9_25). This study subsequently gave me the idea to collaborate with Dr Jeremy Skipper at University College London - Experimental Psychology, Faculty of Brain Sciences. My research proposal on the same theory was awarded the Newton International Fellowship by the British Academy in 2017.

Supplementary Material:

Dancing with Nine Colours: the *Nava Rasa* Roller-Coaster:

This is an experiment in progress to develop an immersive film-viewing experience where a viewer is exposed to a barrage of nine emotional states based on the *Rasa* theory of Indian aesthetics (to see the audiovisual please follow the link: https://youtu.be/rAgW7fW_W60).

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