

Mirror Neurons  
and  
“Value Based Universal Education System  
and Values in Dnyaneshwari”

**Prof. Dr. A. V. Jamkar**

**MS. PhD FICS ,FAMS, FIAGES, FAIMER fellow**

Former Vice Chancellor,

Maharashtra university of Health sciences, Nashik

Distinguished Professor,

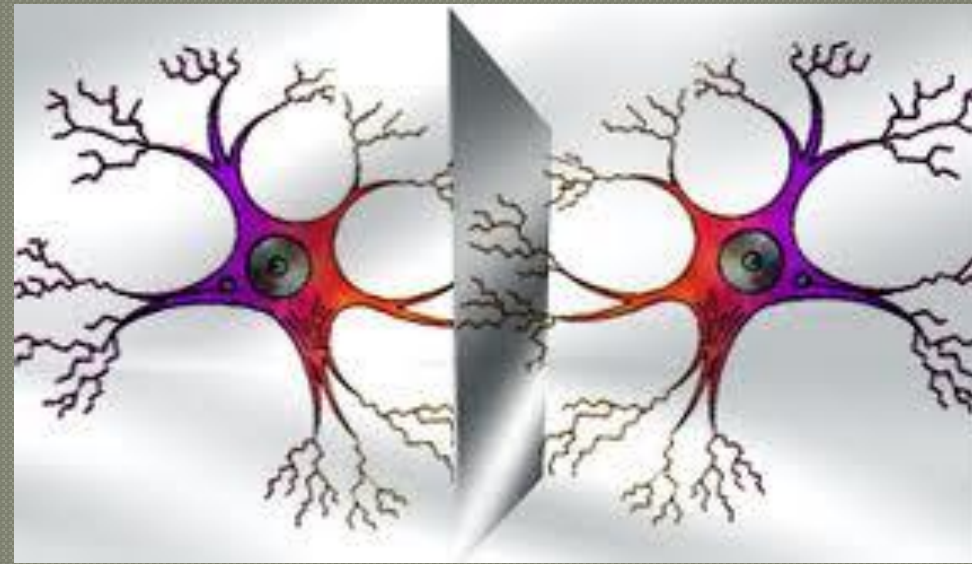
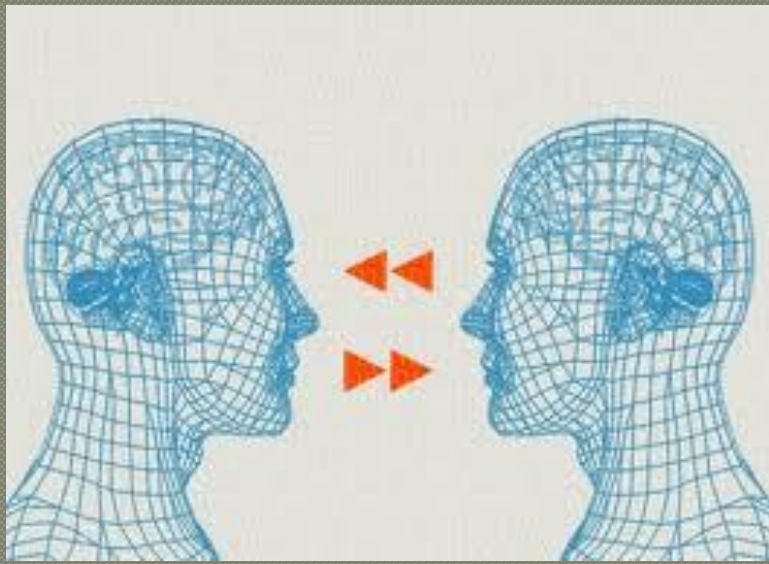
Symbiosis International University

And

Dr Vivek Kondawar,

Ex Scientist G , NEERI Nagpur

# Mirror neurons and Inculcation of Values in Students



# Yawning is infectious



[Brain Imaging Behav.](#) 2013 Mar;7(1):28-34. doi: 10.1007/s11682-012-9189-9.

**Mirror neuron activity during contagious yawning--an fMRI study.**

[Haker H, Kawohl W, Herwig U, Rössler W.](#)



Yawning  
mediated  
through  
Mirror  
Neurons

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Smiling is infectious  
through  
Mirror neurons



# Mirror Neurons

What is a Mirror Neuron?

Where are Mirror neurons situated?

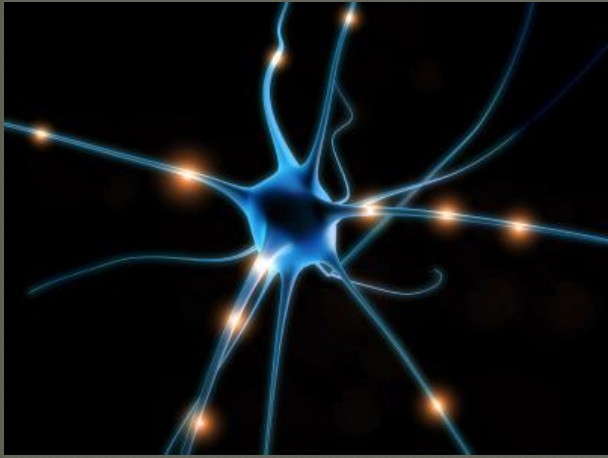
Dogmatic Evidence in Human Brain

Applications based on Mirror neurons

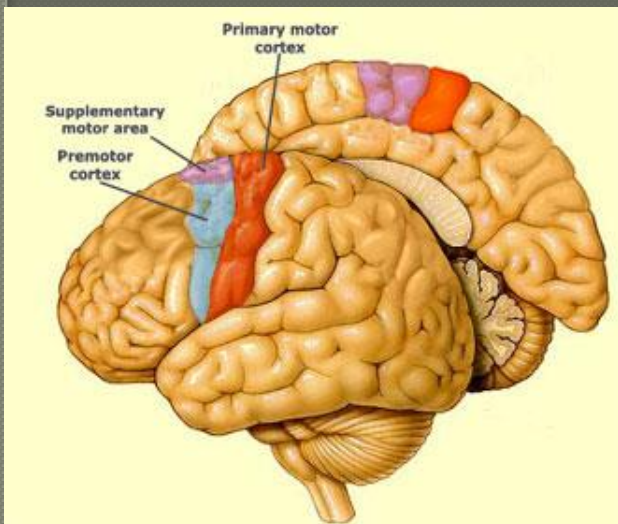
Mirror neurons and Sports

Mirror neurons and values

# What is a Mirror Neuron?

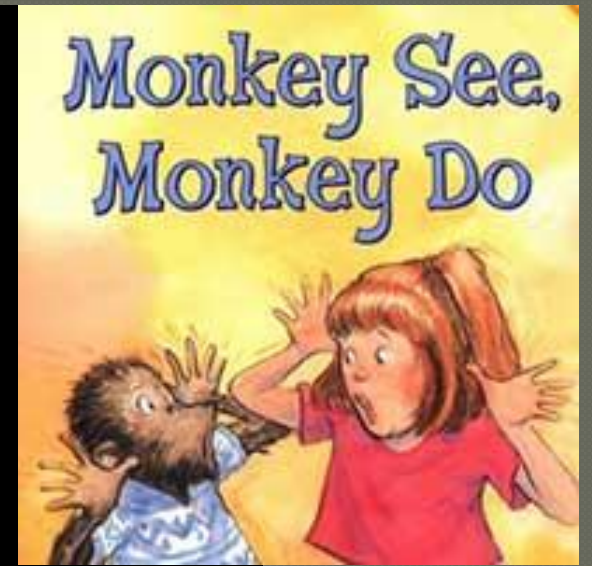


- A specialized cell in the brain
- A **mirror neuron** is a neuron that fires both when an animal acts and when the animal observes the same action performed by another
- Thus, the neuron "mirrors" the behavior of the other, as though the observer were itself acting





Rizzollati (1996) studied macaque monkeys and discovered a curious cluster of cells in the ventral pre-motor area of the brain's frontal lobes

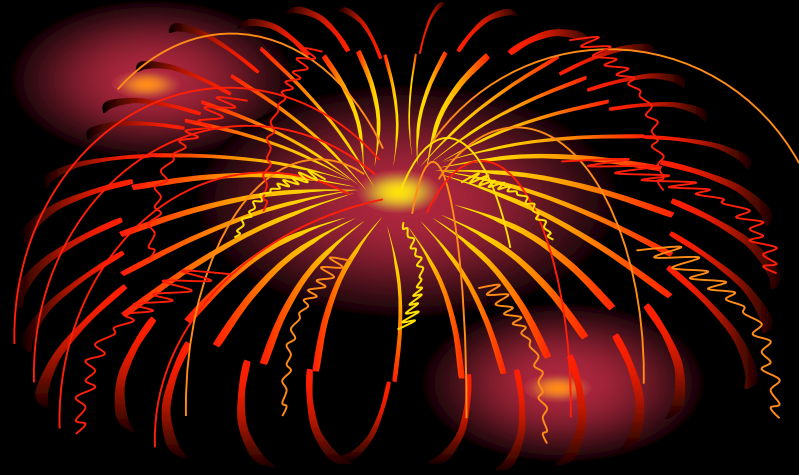


The monkey fired the same set of Neurons when the monkey grabbed a peanut or watched somebody else grab a peanut.

# Baby Mirrors in Action



# IMITATION



- **Piaget suggested that babies learn to imitate**

- **Mirror neurons tell us that babies imitate to learn – from the first hour of their lives**



# Child learning by imitation



# Child learning by Imitations



# Role of 'Mirror Neuron System' In Humans



**Mirror neurons**



**Observation of behaviour  
(e.g. emotions) of other  
people**



**Social organisation of  
behaviour (e.g. empathy)**



**Copy behaviour**



# Mirror neurons for Science and culture

- Science and Culture combination
- Mirror neuron system plays a role in developing collaboration of science and Culture
- Culture is affected by Religion



# Mirror Neurons

What is a Mirror Neuron?

Where are Mirror neurons situated?

Dogmatic Evidence in Human Brain

Applications based on Mirror neurons

Mirror neurons and Sports

**Mirror neurons and values**

Mirror Neurons and sports skills

- Empathy Is basis of all values
- It is mediated through Mirror Neurons

# Empathy



**Empathy - ऐम्पेथी**  
दूसरे का दर्द  
दूसरे की व्यथा  
दूसरे का कष्ट आदि  
को अपना समझ कर कर्म  
करने की मनःस्तिथि

गोपाल राजू



**Empathy Neurons,**

**Dalai Lama Neurons**

**Gandhi Neurons**



## Empathy Neurons, Dalai Lama Neurons, Gandhi Neurons

---

- Neurons in the human anterior cingulate, which normally fire when you poke the patient with a needle ("pain neurons"),
- Fire when the patient watches *another* patient being poked.
- Dissolve the barrier between self and others.

**Empathy is...**

**seeing** with the **eyes** of another,  
**listening** with the **ears** of another,  
and **feeling** with the **heart** of another.



# Process in Brain during empathy



- Watching pain/sensation
- Negative Feedback from that organ
- Brain declares "It is not mine"
- Empathy feeling



- People who rank **high on a scale measuring empathy** have particularly active mirror neurons systems,
- Doctors will be judged on Empathy scale
- Social emotions like guilt, shame, pride, embarrassment, disgust and lust are based
- Empathy is main stay of values

COMPASSION

IS THE WISH TO SEE OTHERS  
FREE FROM SUFFERING.

DALAI LAMA

everydayspirit  
.NET

Compassion



# Creating Vocabulary of values and Ethics

Individual Values

Family Values

Society Values

Values attributed to Religion

National values

Modified suitably  
By Democracy,  
Conscientiously  
but  
Acceptable  
to leadership

for Geography,  
Nation,  
Religion,  
Faculty  
Curriculum  
, Level of Education etc

# ज्ञानेश्वरीतील जीवनमूल्ये

## शाश्वतमूल्ये /चिरंतनमूल्ये

- - अहिंसा
- - ज्ञान
- - दया
- - त्यागमय वर्तणुक
- - सौजन्य
- - कल्याण
- - धैर्य
- - दान
- - क्षमा
- - नम्रता

## सामाजिक मूल्ये

- - अहिंसा
- - दया
- - शांती
- - दान
- - वर्तनपावित्र
- - आर्जव
- - त्याग
- - क्षमा
- - नम्रता
- - धैर्य
- - विवेक

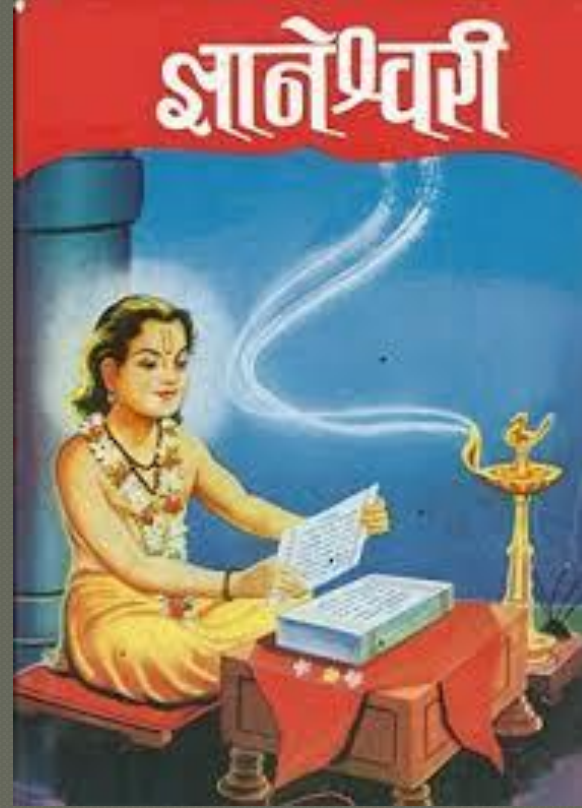
## व्यक्तिगतमूल्ये

- - नम्रता
- - अक्रोधत्व
- - चित्तशुद्धी
- - आत्मसुखा
- - सत्वशुद्धी
- - मार्दव
- - निरहंकारीपणा
- - धैर्य

# ज्ञानेश्वरांची अध्यात्मिक लोकशाही

ज्ञानेश्वरीतील शिक्षणातील मूल्ये

- विवेक
- ज्ञान
- नम्रता
- अहिंसा
- मार्दव
- प्रेमभावना
- धैर्य / निर्भयता



पुढा स्नेह पाझरे I  
मागा चालती अक्षरे I  
शब्दुपाठी अवतरे I  
कृपाआधी I



## विवेक (discretion, Conscience) defined indirectly through function

- मज हृदयी सदगुरु । तेणे तारिलो हा संसारपुरु ।  
म्हणऊनि विशेष अत्यादरु । विवेकावरी ॥ १/२२ ॥
- My worthy Guru seated in my heart has helped me to cross the flood of existence, and because of him I take special interest in discriminating knowledge
- आता अवधारा कथा गहन । जे सकळां कौतुका जन्मस्थान ।  
की अभिनव उद्यान । विवेकतरुचे ॥ १/२८ ॥
- Now listen to a profound tale (Mahabharata), the source of all arts and entertainments, the marvelous garden of trees in the form of discriminating thoughts
- आधी विवेकाची गोठी । वरी प्रतिपादी कृष्ण जगजेठी ।  
आणि भक्तराजु किरीटी । परिसत असे ॥ ४/२ ॥
- In the first place the subject pertained to **spiritual wisdom**; secondly its exponent was Lord Krishna, the conqueror of the world; and lastly the listener was Arjuna, the foremost among the devotees.



## विवेक (discretion, Conscience) defined indirectly through function)

- ऐसेया काजालागी । अवतरें मी युगीं युगीं ।  
परि हेंचि वोळखे जो जगीं । तो विवेकिया ॥ 4/५७ ॥
- I take birth and carry on my work, Whoever knows this immutable nature of Mine **through discrimination** becomes liberated.
- साहित्यसोनियाचिया खाणी । उघडवीं देशियेचिया क्षोणीं ।  
विवेकवल्लीची लावणी । हों देई सेंघ ॥ 12/१२ ॥
- Let there be abundance of Divine Knowledge in the city of Marathi language and let the world have dealings, only in the bliss of knowledge.
- फिटो विवेकाची वाणी । हो कानामनाची जिणी ।  
देखो आवडे तो खाणी । ब्रह्मविद्येची ॥ 13/११६१ ॥
- May the **poverty of discreet thought vanish**, may the ears and the mind attain fulfillment, and wherever one sees, may one see the mine of the Brahmic lore.

## ज्ञान (knowledge, wisdom)

- जरि ज्ञानाचेनि प्रकाशें । परतत्त्वीं दिठी न पैसे । ते स्फूर्तीचि असे । अंध होऊनी ॥ 13/६२८ ॥  
If the intellect does not reach Brahman in the light of knowledge, then it is blind.
- पैं ज्ञानाचिये प्रभेसवें । जयाची मती ज्ञेयीं पावे । तो हातधरणिया शिवे । परतत्त्वातें ॥ 13/६३२ ॥  
He, whose intellect comes into contact with this knowledge, experiences the touch of God.
- तैसैं शास्त्रजात जाण । आघवेंचि अप्रमाण । अध्यात्मज्ञानेंविण । एकलेनी ॥ 13/८३९ ॥
- O Partha, all other lores with the exception of the one relating to the knowledge of the Self, lack authority.
- तैसैं जें जाणितलेयासाठीं । संसार संसाराचिये गांठी । लाऊनि बैसवी पाटीं । मोक्षश्रियेचां ॥ 9/४६ ॥  
so this wisdom, equating mortal life with the world of name and form leads the spiritual aspirant to the state of liberation.
- परि तो रसातिशयो मुकुळीं । मग ग्रंथार्थदीपु उजळीं । करी साधुहृदयराउळीं । मंगळ उखा ॥ 5/१४२ ॥  
When you take delight in praising holy men, you forget the context; but you speak so beautifully about these matters.
- म्हणूनी बहुतीं परीं पाहतां । पुढतपुढती निर्धारिता । हे ज्ञानाची पवित्रता । ज्ञानींचि आथि ॥ 4/१८२
- Thus even if we consider it from any angle, we have to admit that the purity of wisdom lies only in wisdom.

## नम्रता (Humbleness) not defined but exemplified through his own writings

- तरी न्यून ते पुरतें । अधिक ते सरते । करून घ्यावे हें तुमते । विनवीतु असे ॥ 1/८० ॥
- Please make good my shortcomings if any and ignore my superfluities
- आता देईजो अवधान । तुम्हीं बोलविल्या मी बोलेन । जैसे चेष्टे सूत्राधीन । दारुयंत्र ॥ 1/८१ ॥
- I shall speak if you give me power to speak, even as the puppet can move only on the strength of the string.
- का टिटिभू चांचूवरी । माप सूये सागरी । मी नेणतु त्यापरी । प्रवर्ते येथ ॥ 1/६८ ॥
- I hear that a lapwing tried to empty the sea to save her chicks, so ignorant that I am, I have set out to do this difficult task.
- ऐसैं जें अगाध । जेथ वेडावती वेद । तेथ अल्प मी मतिमंद । काय होय ॥ 1/७३ ॥
- This Gita is so profound that it confounded even the Vedas. How then can a dull-witted person like me attempt to explain it?
- येह्वी तरी मी मुखू । जरी जाहला अविवेकु । तरी संतकृपादीपु । सोज्वळु असे ॥ 1/७६ ॥
- O saints, though I am ignorant and indiscriminating, the lamp of your kindness shines bright,
- वांचूनि पढे ना वाची । ना सेवाही जाणें स्वामीची । ऐशिया मज ग्रंथाची । योग्यता कें असे ? ॥ 18/ १७६५ ॥
- I had neither recited nor read the scriptures, and nor did I know how to serve my Master; how then could I have attained the capacity to compose this work?

**अहिंसा (non-violence) even non-violence through  
speech also explained and then explains if thoughts  
are non violent speech and actions follow**

- आणि जगाचिया सुखोद्देशें । शरीरवाचामानसैं । राहाटणें तें अहिंसे । रूप जाण ॥ 16/११४ ॥
- Now to conduct oneself with body, speech and mind, with the sole object of making the world happy, is the essence of non-violence.
- पुढां स्नेह पाझरे । माघां चालती अक्षरें । शब्द पाठीं अवतरे । कृपा आधीं ॥ 13/२६३ ॥
- So when he begins to speak, first love oozes out from his mouth and then the kind words follow.
- तंव बोलणेंचि नाहीं । बोलां म्हणे जरी कांहीं । तरी बोल कोणाही । खुपेल कां ॥ 13/२६४ ॥
- To the extent possible, he does not talk to others and if such an occasion arises, he prefers silence, fearing that his speech would offend someone
- तैसें साच आणि मवाळ । मितले आणि रसाळ । शब्द जैसे कल्लोळ । अमृताचे ॥ 13/२७० ॥
- His speech is then truthful but soft, moderate but straight like nectar
- काइ शाखा नव्हे तरु ? । जळेंवीण असे सागरु ? । तेज आणि तेजाकारु । आन काई ? ॥ 13/२९४ ॥
- Do not the branches form the tree? Can the sea exist without water? Are the sun and his rays different?
- अवयव आणि शरीर । हे वेगळाले कीर ? । कीं रसु आणि नीर । सिनानीं आधी ? ॥ 13/२९५ ॥
- Are the limbs separate from the body or is fluid different from water



## मार्दव (humanity, sensitivity, softness) Dnyadeva explains through similes and examples

- कां कमळावरी भ्रमर । पाय ठेविती हळुवार । कुचुंबैल केसर । इया शंका ॥ 13/ २४८ ॥  
तैसे परमाण पां गुंतले । जाणुनि जीव सानुले । कारुण्यामार्जी पाउलें । लपवूनि चाले ॥ 13/२४९ ॥  
ते वाट कृपेची करितु । ते दिशाचि स्नेह भरितु । जीवातळीं आंथरितु । आपुला जीवु ॥ 13/२५० ॥
- As the bee lands lightly on the lotus for fear of crushing the pollens in it, so realising that even the particles of dust are covered by tiny creatures, he (the non-violent person), places his feet cautiously on the ground out of compassion. In whatever direction he goes, he fills it up with affection and takes care of the tiny life under his feet more than his own life
- कां नाभिकारा उचलिजे । हातु पडिलियां देइजे । नातरी आर्तातें स्पर्शिजे । अळुमाळु ॥ 13/२८८ ॥  
हेंही उपरोधें करणें । तरी आर्तभय हरणें । नेणती चंद्रकिरणें । जिव्हाळा तो ॥ 13/२८९ ॥  
पावोनि तो स्पर्शु । मलयानिळु खरपुसु । तेणें मानें पशु । कुरवाळणें ॥ 13/२९० ॥
- He is abashed at giving the sign of safety, or lending a hand to a falling person or caressing a person in distress. Even the moonbeams do not possess the tenderness with which he removes the sufferings of others. When compared to his soft touch, even the breeze flowing from the Malaya mountain appears harsh, and with the same gentle touch, he caresses the animals

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## धैर्य/निर्भयता (courage, fearlessness)

**Stresses that fearlessness arises from true knowledge of self**

- अगा अभय येणें नावें । बोलिजे तें हें जाणावें ।  
सम्यक्ज्ञानाचें आघवें । धांवणें हें ॥ 16/७३ ॥
- O Arjuna, this is the characteristic of what is known as fearlessness and it is followed by true knowledge.



## प्रेमभावना (love, affection)

### Explained through simili and affection between Krushna and Arjuna

- वत्स धालयाही वरी । धेनू न वचावी दुरी । अनन्य प्रीतीची परी । ऐसी आहे ॥ 18/७८ ॥
- Even when the calf has drunk the milk to its heart's content, it does not wish to be separated from the cow. Such is the case of single-minded love.
- म्हणौनि गा आम्हां । वेगां आली उपमा । एहवीं काय प्रेमा । अनुवादु असे ? ॥ 12/१५९ ॥
- I had to give the simile to denote this love; otherwise how can one describe it?
- तो कृपापीयूषसजळ । आणि येरु जवळं आला वर्षाकाळु ।  
नाना कृष्ण कोकिळु । अर्जुन वसंतु ॥ 11/११३ ॥
- Then Arjuna and Lord Krishna appeared as if they were the monsoon and the cloud brimful with ambrosial grace or the spring and the cuckoo.
- नातरी चंद्रबिंब वाटोळें । देखोनि क्षीरसागर उचंबळे ।  
तैसा दुणेंही वरी प्रेमबळें । उल्लसितु जाहला ॥ 11/११४ ॥
- More than the Sea of Milk in which rises high tide at the sight of the full moon, the Lord was overjoyed with redoubled affection for Arjuna,

**Whom you follow for values**  
**Your age will greatly influence your values.**

:

- Ages 1-7 --- parents
- Ages 8-13 --- teachers, heroes (sports, rocks, TV)
- Ages 14-20 --- peers (values because of peers or peers because of values?)
- Ages 21+ your values are established, but you may test your values from time to time.

# Where do we get values?

- our homes,
- school,
- society,
- friends,
- TV,
- News paper
- Temples
- music,
- books,
- families,
- culture,
- employers,
- time-period in which you were raised

# Values Imbibed By Watching Teachers in Action

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- Teachers are role model for students
- Students follow the teacher but the way he behaves and not the way he talks



बोले तैसा चाले । त्याची वंदने पाउले ॥  
अंगे झाडीन अंगण । त्याचे दासत्व करीन ॥  
त्याचा होईन किकर उभा ठाकेन जोडोनि कर ॥  
तुका म्हणे देव । त्याचे चरणी माझा भाव ॥

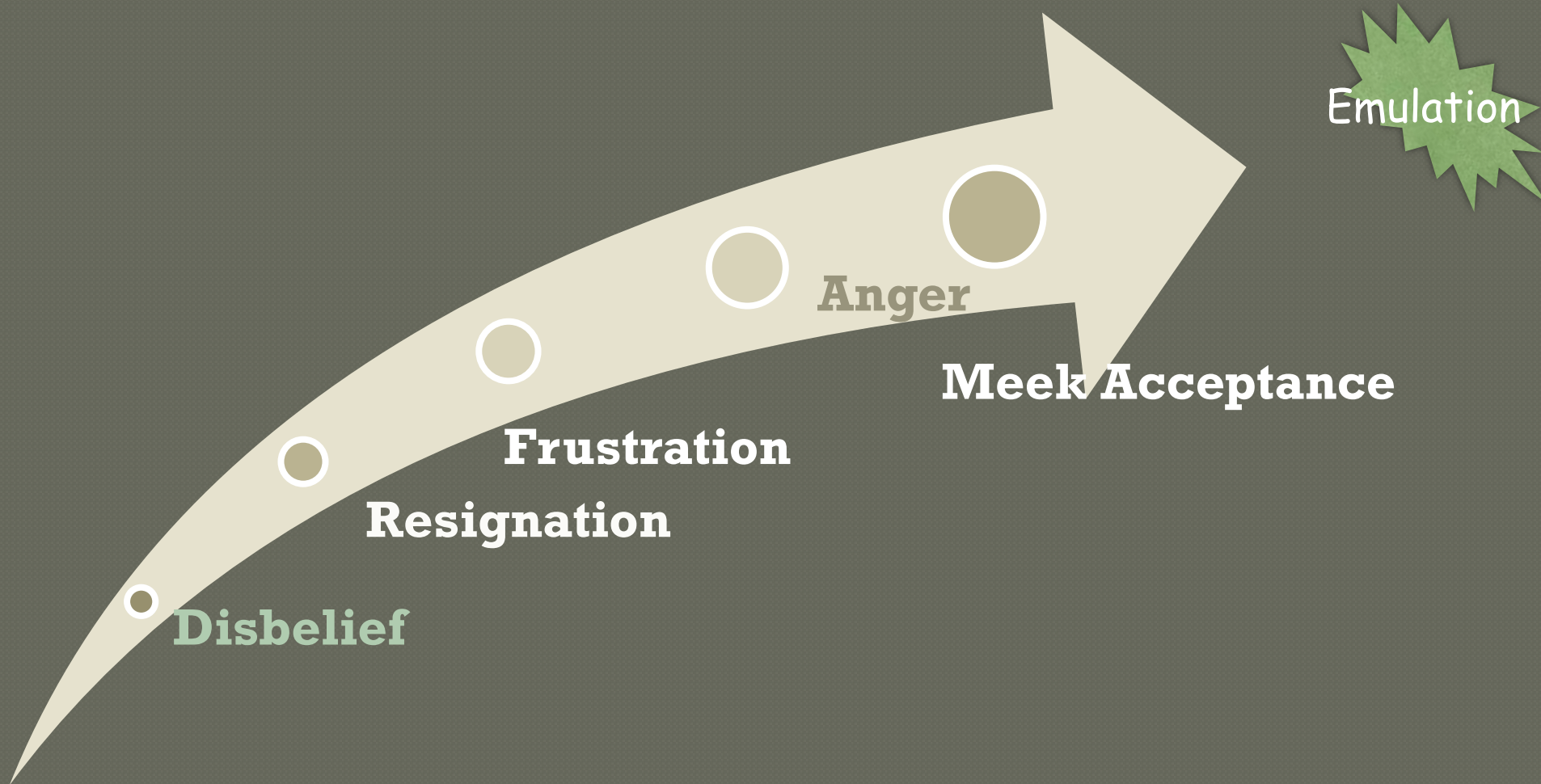
संन . श्री गुरु नमः शिवाय ॥ श्री गुरु नमः शिवाय ॥ श्री गुरु नमः शिवाय ॥

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बोले तैसा चाले ।  
त्याची वंदने पाउले ॥  
अंगे झाडीन अंगण ।  
त्याचे दासत्व करीन ॥  
त्याचा होईन किकर ।  
उभा ठाकेन जोडोनि कर ॥  
तुका म्हणे देव ।  
त्याचे चरणी माझा भाव ॥



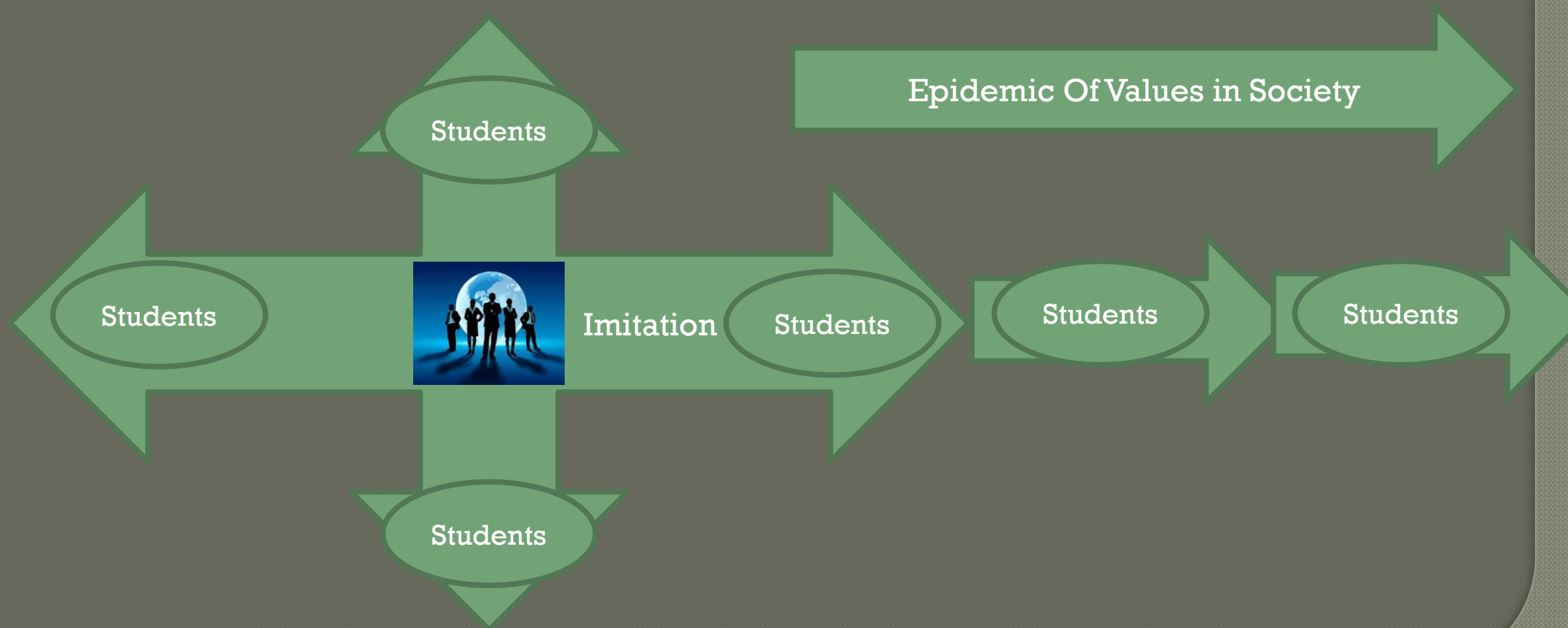
# “Acculturation”



# Traumatic deidealization

- Role models are known to shape the values, attitudes & ethics of medical trainees ( moral exemplars)
- Model ethical principles through their pedagogy
- Creating environment fosters ethical clinical practice

# Imitating Role Models for value Education has self amplifying effect



# Mirror Neurons :

## Violence watched by kids

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- A study in the January 2006 issue of Media Psychology found that when children watched violent television programs, mirror neurons, as well as several brain regions involved in aggression were activated, increasing the probability that the children would behave violently.

# Role Models in Society

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- Assertive Role Models : Amir khan Model
- Use of modern social Media
- Sportsman as Role models



# Role of Print and Electronic Media

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- Positive Journalism to create real and true Icons and Role Models
- Developing Positive image Of Role Models and Icons
- Value based Patriotism
- Marketing Of Icons and role models

# Conclusion

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- Mirror neuron system helps us to learn by imitation.
- Values are imbibed by imitating teachers, Parents and Role Models in society through Mirror Neurons
- Mirror Neurons helps to build Culture and civilisation
- It is a link between science and culture.
- In directly it link between Science, Religion and Philosophy.
- All values depicted in Dnyaneshwari are to be explored to practice