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

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Mirror neurons
and
Inculcation of Values in Students
Mirror neuron activity during contagious yawning--an fMRI study.
Haker H, Kawohl W, Herwig U, Rössler W.
Yawning mediated through Mirror Neurons
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
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 the basis of all values. It is mediated through Mirror 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.
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
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 वर्तनपावत्र
- सौजन्य
- कल्याण
- धैर्य
- दान
- क्षमा
- नम्रता

सामाजिक मूल्ये
- अहिंसा
- दया
- शांती
- दान
- वर्तनपावत्र
- अर्जेंव
- त्याग
- क्षमा
- नम्रता
- धैर्य
- विवेक

व्यक्तिगतमूल्ये
- नमर्ता
- अक्रोधत्व
- चित्तशुद्धी
- आत्मसुखा
- सत्वशुद्धी
- मादेव
- निरहंकारीपणा
- धैर्य
ज्ञानेश्वरांची अध्यात्मिक लोकशाही

पुढा स्नेह पाझरे १
मागा चालती अक्षरे १
शब्दुपाठी अवतरे १
कृपाआधी १
विवेक (discretion, Conscience)  
defined indirectly through function

- मज हृदयी सदगुरू | तेजे तारिलो हा संसारपूरु | म्हणुनी विशेष अत्यादरू | विवेकावरी || 1/22 ||
- 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 सकर्षा कौतुका जन्मस्थान | की अभिनव उद्यान | विवेकतरुळे || 1/28 ||
- 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 भक्तराज किरीटी | परिसत असून ॥ 4/2 ॥
- 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 हृषि वोळखे जो जगीं | तो विवेकियं || 4/४७ ||
- I take birth and carry on my work, Whoever knows this immutable nature of Mine through discrimination becomes liberated.
- साहित्यसोनियाचिया खाणी | उघडवीं देशियेचिया क्षोणीं | विवेकवल्लीिी लावणी | हों देई सैंघ || 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 | ब्रह्मववद्येिी || 1३/२१६१ ||
- 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)

- जरर ज्ञानाचिये प्रकाशें | पररतत्त्वी दिंडी न पैंसे | ते स्फूतीचिये असें | अंध होऊनी || 13/६२८ ||
  If the intellect does not reach Brahman in the light of knowledge, then it is blind.

- पैं ज्ञेयी मर्िी मर्वें | जयाच्यी मती जें पावे | तौ हातछढरणिया शिवे | परत्तवार्तें || 13/६३२ ||
  He, whose intellect comes into contact with this knowledge, experiences the touch of God.

- तैसें शास्त्रजांत जाण | आघवेंचि अप्रमाण | अध्यात्मज्ञानेंववण | एकलेंनी || 13/८३९ ||
- O Partha, all other lores with the exception of the one relating to the knowledge of the Self, lack authority.

- तैसें जे जाणतलेयासाठी | संसार संसाराचिये गांठी | लाऊनी बैसवी पारीं | चोककल्ल्रिवेचां || ९/५४ ||
  so this wisdom, equating mortal life with the world of name and form leads the spiritual aspirant to the state of liberation.

- पैं सरसातिरिशयो मुकुली | मग ग्रंधार्थदीपु उजळी | करी साधुहृदयराउळी | मंगळ उखा || ५/१४२ ||
  When you take delight in praising holy men, you forget the context; but you speak so beautifully about these matters.

- महणूनी बहुती परीं पाहतां | पुढलपुढली निर्धारिता | हे ज्ञानाची पवित्रता | ज्ञानीचि आथि || ४/१८२ ||
- Thus even if we consider it from any angle, we have to admit that the purity of wisdom lies only in wisdom.
नम्ता (Humbleness) not defined but exemplified through his own writings

- तरी न्यून ते पुरते | अधिक ते सरते | करून घ्यावे हैं तुमते | विनवीतु असे || 1/80 ||
- Please make good my shortcomings if any and ignore my superfluities
- आता देईजो अवधान | तुम्ही बोलविल्या भी बोलेन | जैसे चेष्टे सूत्राधीन | दारुयंत्र || 1/81 ||
- 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 | प्रवर्तें येथ || 1/68 ||
- 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.
- ऐसें जें अगाध | जेथ वेदावती वेद | तेथ अल्प मी मतिमंद | काय होय || 1/73 ||
- This Gita is so profound that it confounded even the Vedas. How then can a dull-witted person like me attempt to explain it?
- येन्हवी तरी मी मुर्दू | जरी जाहला अविवेकु | तरी संतकुपादीपु | सोज्वत्थू असे || 1/76 ||
- O saints, though I am ignorant and undiscriminating, the lamp of your kindness shines bright,
- वांचूनि पंढे 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 | शरीरवाचामानसें | राहटणं तें अहिंसें | रूप जाण || 16/१९४ ||
- 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 स्नें पाझरे | माघां चालती अक्षरे | शब्द पाठीं अवतरे | कृपा आर्थें || १३/२६३ ||
- So when he begins to speak, first love oozes out from his mouth and then the kind words follow.

- तव बोलणंचे नाहीं | बोलों म्हणे जरी कांहीं | तरी बोल कोणाही | खुपेल कां || १३/२६४ ||
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.

- तैसे साच आणि मवाळ | मितले आणि रसाळ | शब्द जैसे कल्लोळ | अमृताचे || १३/२७० ||
- His speech is then truthful but soft, moderate but straight like nectar.

- काई शाखा नव्हे तरु ? | जठेवीण असे सागरु ? | तेज आणि तेजाकारु | आन काई ? || १३/२९४ ||
- 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 आथी ? || १३/२९५ ||
- Are the limbs separate from the body or is fluid different from water
कां कमलावरी भ्रमर | पाय ठेविती हलकुवर | कुंघुंबैल केसर | इया शंका || 13/२४८ ||
तैसे परमाणु पाने गुंतले | जाणून तीव्र सानुले | कारूण्यामाजी पाउले | लपवून चाले || 13/२४९ ||
ते वाट कृपेच चालत | ते दिशोचिच स्नेह भरले | जीवातळी आंधरित | आळुमाळू जीव || 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 | हात पिठियां ढेकिजे | नाती आर्ताती स्पर्शिजे | अभ्रमाल | 13/२४८ ||
हैही उपरोध करणे | तरी आर्तिभ्य हरणे | नेण्टी चंद्रकिरणे | जिज्ञाता तो || 13/२४९ ||
पावोनी तो स्पर्शु | मलयानिन्नु खरपुसु | तेणे मानें पशु | कुरवालें || 13/२५० ||
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
O Arjuna, this is the characteristic of what is known as fearlessness and it is followed by true knowledge.
Prabhavna (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.
- महणौनिग आम्हां | वेगां आली उपमा | एन्ह्यां काय प्रेमा | अनुवादं असे? || 12/१७९ ||
- I had to give the simile to denote this love; otherwise how can one describe it?
- तो कृपापीयसंजालु | आणि येरु जवळा आला वर्षकाळु | नानाकृष्ण कोकिळेल्या | अर्जुन वसंतु || 11/१९३ ||
- 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 चंद्रबिबंब वाटोले | देखोनि क्षीरसागर उचबले | तैसा दुण्ही वरी प्रेमबंले | उल्लसितु जाहला || 11/१७४ ||
- 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
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 वंदीन पाउले ॥
अंगे झाडीन अंगण ।
त्याचे दासत्व करीन ॥
त्याचा होईन किकर ।
उभा ठाकेन जोडोनि कर ॥
तुका महणे देव ।
त्याचे चरणी माझा भाव ॥
Disbelief
Resignation
Frustration
Anger
Meek Acceptance
Emulation
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

Epidemic Of Values in Society

Students

Imitation

Students

Students

Students

Students
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

- Assertive Role Models: Amir Khan Model
- Use of modern social Media
- Sportsman as Role models
Role of Print and Electronic Media

- 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
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.