

**Proceeding on National Conference  
on  
Multidisciplinary Research  
(NCMR-2024)**



**28<sup>th</sup> and 29<sup>th</sup> February 2024  
Nagar College  
Khargram, Kandi, Murshidabad, West Bengal, India.**

**Proceeding on National Conference  
on  
Multidisciplinary Research  
(NCMR-2024)  
28<sup>th</sup> and 29<sup>th</sup> February 2024**

**Editors**

**Dr.Anilesh Dey**

**Dr.Sudipta Sau**

**Dr.Satarupa Dasgupta**

**Mrs. Sreeja Konar**

**Nagar College  
Khargram, Kandi, Murshidabad, West Bengal, India**

**2024  
Ideal International E – PublicationPvt. Ltd.  
[www.isca.co.in](http://www.isca.co.in)**

# Ideal International E-Publication



Pvt. Ltd.

427, Palhar Nagar, RAPTC, VIP-Road, Indore-452005 (MP) INDIA

Phone: +91-731-2616100, Mobile: +91-80570-83382

E-mail: [iscaepublications@gmail.com](mailto:iscaepublications@gmail.com), Website: [www.isca.co.in](http://www.isca.co.in)

<b>Title:</b>	Proceeding on National Conference on Multidisciplinary Research NCMR 2024
<b>Editor(s):</b>	Dr.Anilesh Dey, Dr.Sudipta Sau, Dr.Satarupa Dasgupta,Smt. Sreeja Konar
<b>Edition:</b>	First
<b>Volume:</b>	I
<b>Publisher</b>	Ideal International E-Publication
<b>Publisher Address</b>	427, Palhar Nagar, RAPTC, VIP-Road, Indore-452005(MP) INDIA
<b>Language</b>	English
<b>Product form</b>	Digital download and online (EB)

© Copyright Reserved

2024

*All rights reserved. No part of this publication may be reproduced, stored, in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, reordering or otherwise, without the prior permission of the publisher.*

**ISBN: 978-81-971906-2-9**

## PREFACE

The National Conference on Multidisciplinary Research is meticulously crafted to function as a synergistic platform catering to researchers, academicians, professionals, and students spanning diverse fields. Its paramount objective lies in facilitating the seamless exchange of sophisticated ideas, methodologies, and research findings, thereby nurturing interdisciplinary discourse and championing a comprehensive approach to surmount intricate challenges. The conference distinctly endeavors to stimulate the exchange of knowledge, foster interdisciplinary collaboration, and cultivate networking opportunities among participants. Emphasizing the refinement of research methodologies, the promotion of innovation, provision of avenues for publication, and the facilitation of skill development through meticulously designed workshops and interactive sessions constitute focal points. Additionally, the conference endeavors to propagate awareness concerning the profound significance of multidisciplinary research and its pivotal role in addressing real-world challenges. In essence, by earnestly pursuing these objectives, the conference aspires to make a substantive contribution to the progressive evolution of knowledge, collaboration, and holistic problem-solving within our dynamic and intricately interconnected global landscape.

**About Nagar College :** Khargram C.D. Block under Kandi Subdivision of Murshidabad District in West Bengal is a backward and retarded region in respect to education, culture and economy. Under this block at Nagar Village late Sayed Ali Zaker with a view to spread education founded Nagar A.M. High School along with a plan to set up a college. Sayed Abdur Razzak materialized his father's dream by dint of his personal venture as well as cooperation of common people and this college came into being on 18.08.1998 as a college under the University of Calcutta and migrated under the University of Kalyani in 1999. The college with 7 (seven) subjects in general course initially started in the adjacent Nagar A.M High School building with only 52 students. At that time in January 1998 the said school donated 1.32 acres of land to erect college building as its own. On 26.4.2000 College shifted to its own building. In 2002 the college obtained permanent affiliation of University of Kalyani and was recognized by the UGC under section 2f & 12(B) in 2008. At present, student strength is 2,236 along with 14 full time teachers and 40 State Aided College Teachers. 15 subjects are taught in General Course out of which 11 subjects are taught in both Honors and General Course. In our pursuit for development, we have obtained one by one our buildings, classrooms, Library, Laboratories, Gymnasium, Heath Care Center, Canteen. During Covid-19 the teaching learning process in the college was supported by online classes, digital library and office service (both online and offline), which ensured the smooth functioning of the College

## CONTENTS

<b>Sr. No.</b>	<b>Title</b>	<b>Pg. No.</b>
1	Res3DeepNet: A 3D CNN with Residual Connections for Predicting Stress Levels from ECG Signals	1-6
2	Smart Glass: A Solution for the Visually Impaired	7-11
3	The Scope Cloud Computing: Trends, Obstacles, and Opportunities	12-15
4	Arduino Based Smart Glove for Sign Language Recognition	16-20
5	Scope on Job Opportunities in The Era of Disruptive Technologies in India	21-26
6	Madhusudan Dutt's Poetic Style: A Masterful Blend of Tradition and Innovation	27-29
7	The Significance of Ahlam Mosteghanemi's Writings in Contemporary Literature	30-31
8	Woman and the Narratives of Resistance: Introspecting the Re-creation of Draupadi through Dasgupta	32-36
9	From a Director to a Writer: A Reading of Ray's "A Long Time on the Little Road"	37-41
10	Utilizing Fuzzy Linguistic Hedges in Decision Making for Sentiment Classification	42-47
11	Influences of Arabic language and literary works on Indian languages and Literature	48-52
12	Image Compression Techniques: A Review	53-56
13	Media and Public Opinion in New Media Environment	57-64
14	Revisiting Ship Building Industry and Technology in Medieval Bengal - A Historical Excursion	64-71
15	History and Trend of Sustainable Agriculture in India	72-79

16	Exploring the Role of Artificial Intelligence in Library Services: A Comparative Analysis	80-87
17	Enlightenment in Bengal and Growth of Philosophy : Contribution of Rabindranath Tagore, Swami Vivekananda and Sri Aurobindo	88-91
18	Teacher Effectiveness & Job Satisfaction among Secondary School Teacher in Relation Gender: A Study of School in West Bengal	92-102
19	Intellectual Property Rights and New Education Policy 2020	103-108
20	National Education Policy 2020: Changing Role and Status of the College Libraries in the Higher Education Sector of India	109-115
21	Reading the Urban Space: Representation of Mumbai and Literary Imagination	116-120
22	Calcutta Cyclone of 1864, Challenge to the Sustainable Development in Colonial Bengal and Introduction of Meteorology to mitigate Natural Disasters	121-125
23	The Challenge and Implementation of National Education Policy 2020	126-131
24	Eco-concern and consciousness in the selected short stories of Ruskin Bond: An overview	132-134
25	Predatory publishing in the Era of open access: An overview	135-139
26	Empowering Women with Education and Social Justice	140-142
27	Reinvestigating Cinematic Adaptation: Navigating the Interconnection of Literature and Film	143-147
28	প্রাচীন ভারতে বিজ্ঞানচর্চা:গণিত বিদ্যা	148-151
29	ভারতীয় দর্শনে জীতিবিদ্যার ভূমিকা	152-154
30	বৌদ্ধধর্মে মূল্যবোধের ধারণা	155-157

31	মধুসূদন: বাংলা কবিতার নবযুগ প্রবর্তক	158-160
32	যোগ দর্শন-পর্যায়ক্রমিক দৃষ্টিভঙ্গি	161-164
33	দুঃখ : রবীন্দ্র-বৌদ্ধ দার্শনিক আঙ্গিক	165-169
34	সংস্কৃত সারস্বত সাধনায় যতীন্দ্রবিমল চৌধুরীর অবদান	170-174
35	মহাকবি কালিদাসের অভিজ্ঞান শকুন্তল নাটকে লিঙ্গ বৈষম্য	175-178
36	The Concept of Shudras in Manusmriti	179-182
37	<b>কিরাতারজ্ঞীয় মথকাব্যে বওনেচরের রাজনীতিক জ্ঞান : একটি সমীক্ষা</b>	183-189
38	<b>শতকত্রয়ী কাব্যে ভর্তৃহরির দার্শনিক দৃষ্টিভঙ্গি:</b>	190-197
39	Depicting Elephants in the Tapestry of Indian Sculptural History	199-201
40	Naguib Mahfouz: The Father of Arabic Literature	202-205
41	The Rise and Evolution of the World of Islam: A Historical Analysis	206-211
42	Data Structure and Data Analysis in Geographical Information System	212-215

## **Res3DeepNet: A 3D CNN WITH RESIDUAL CONNECTIONS FOR PREDICTING STRESS LEVELS FROM ECG SIGNALS**

Sukanya Chatterjee<sup>1</sup>, Yash Raj Singh<sup>2</sup>, Dr. Anilesh Dey<sup>3\*</sup>

<sup>1</sup> Associate Software Engineer, Accenture

<sup>2</sup> Department of Electronics and Communication Engineering, Narula Institute of Technology

<sup>3</sup>Principal, Nagar College, Murshidabad

### **ABSTRACT**

Stress is a pervasive issue in modern society, contributing to various health problems and negatively impacting overall well-being. Electrocardiogram (ECG) signals provide valuable insights into physiological responses to stress, offering an objective measure for stress assessment. This research paper proposes a deep learning-based approach using 3D- convolutional neural networks (CNNs) to predict stress levels from ECG signals. The model architecture incorporates skip connections to capture temporal dependencies and spatial patterns in the data. Experimental results demonstrate the efficacy of the model in accurately predicting stress levels, highlighting its potential for practical applications in stress monitoring and management. The model works with an accuracy of 82.775% and works optimally without any biases.

### **INTRODUCTION**

Stress has become a significant concern in today's fast-paced society, with individuals experiencing stressors from various sources such as work, relationships, and daily life challenges. Chronic stress can lead to detrimental health outcomes, including cardiovascular diseases, mental health disorders, and impaired immune function. Early detection and management of stress are essential for mitigating these adverse effects and promoting overall well-being. While traditional methods for assessing stress often rely on self-reporting and subjective measures, objective physiological signals offer a more reliable and accurate means of evaluating stress levels. Among these signals, electrocardiogram (ECG) recordings provide valuable insights into cardiac activity and autonomic nervous system responses, making them a promising avenue for stress assessment.

ECG and various other physiological signals have been used as a marker of stress for ages [1]. The statistical analysis confirms that ECG signal can prove to be an efficient parameter for stress detection either using static long-term signals or real-time signals accumulated through wearables [2]. But statistical methods were time consuming and vulnerable to error. Thus, the use of Artificial Intelligence (AI), incorporating various Machine Learning (ML) and Deep Learning (DL) techniques came into play, and each of them worked reliably in adherence to the statistical results [3, 4]. CNNs were used extensively for this purpose with high precision and accuracy [5]. But, till date the usage of higher dimensional Neural Networks has not been utilized for this purpose.

Our proposed research work focuses on designing a deep learning architecture with a higher dimensional approach using 3D-CNN built with the inspiration of ResNet architecture for stress detection using ECG signals. Our model, 'Res3DeepNet' bearing an accuracy of 82.775% confirms the reliability on the proposed architecture. This can be modified in future for more dynamic uses for biomedical signal processing.

## **DATASET COLLECTION**

For this research work the MIT-BIH dataset has been utilized [6]. The MIT-BIH Arrhythmia Database comprises 48 half-hour excerpts of two-channel ambulatory ECG recordings, originating from 47 subjects studied by the BIH Arrhythmia Laboratory during the period spanning 1975 to 1979. From a pool of 4000 24-hour ambulatory ECG recordings obtained from a diverse mix of inpatients (approximately 60%) and outpatients (approximately 40%) at Boston's Beth Israel Hospital, 23 recordings were randomly selected. The remaining 25 recordings were specifically chosen to encompass less common yet clinically significant arrhythmias, ensuring a comprehensive representation beyond typical random sampling.

These recordings were digitized at a rate of 360 samples per second per channel, with an 11-bit resolution covering a 10-mV range. Each record underwent independent annotation by two or more cardiologists, with any discrepancies resolved to produce computer-readable reference annotations for every beat, totaling approximately 110,000 annotations across all records, which are included within the database.

The complete MIT-BIH Arrhythmia Database, including 25 out of 48 complete records and reference annotation files for all 48 records, has been publicly accessible since PhysioNet's inception in September 1999. Subsequently, the remaining 23 signal files, previously exclusive to the MIT-BIH Arrhythmia Database CD-ROM, were made available on this platform in February 2005.

## **METHODOLOGY**

The methodology section delineates the sequential steps undertaken to construct and assess the deep learning model for stress level prediction using physiological signals. Initially, the data preprocessing phase involves the extraction and standardization of ECG signals and stress level labels from CSV files. The preprocessing step is crucial for ensuring that the input data is properly formatted and normalized before being fed into the model.

Following data preprocessing, the model architecture is meticulously designed to leverage the unique characteristics of physiological signals. Inspired by the efficacy of 3D-CNNs and the residual connections introduced in ResNet, the model architecture incorporates both elements to enhance feature extraction and gradient flow throughout the network. Specifically, 3D convolutional layers are employed to capture spatial and temporal dependencies in the input signals, while skip connections facilitate the propagation of gradients during training, mitigating the vanishing gradient problem.

The training procedure entails compiling the model with appropriate optimization algorithms, such as the Adam optimizer, and defining a suitable loss function, in this case, binary cross-entropy, to measure the disparity between predicted and actual stress levels. The model is then trained iteratively over 10 epochs, during which the weights of the neural network are adjusted through backpropagation to minimize the defined loss function. The choice of epoch counts, and batch size is carefully considered to strike a balance between training efficiency, model convergence and computational richness.

The dataset has been split into two parts initially, wherein 80% of the dataset has been utilized for training the model and 20% has been kept for testing purposes. ReLU activation has been used in the convolution layers with same padding. The final and pre-final layers were flattened and a dropout of 0.5 units were used with sigmoid activation function [Figure 1].

Upon completion of the training phase, the model's performance is evaluated using a separate test dataset, which was unique with respect to the training dataset, for assessing its predictive accuracy and generalization capabilities. Evaluation metrics such as confusion matrix, and graphs provide quantitative measures of the model's

efficacy in predicting stress levels from unseen physiological signals. Additionally, qualitative analysis of model predictions may be conducted to gain insights into its interpretability and robustness across diverse datasets.

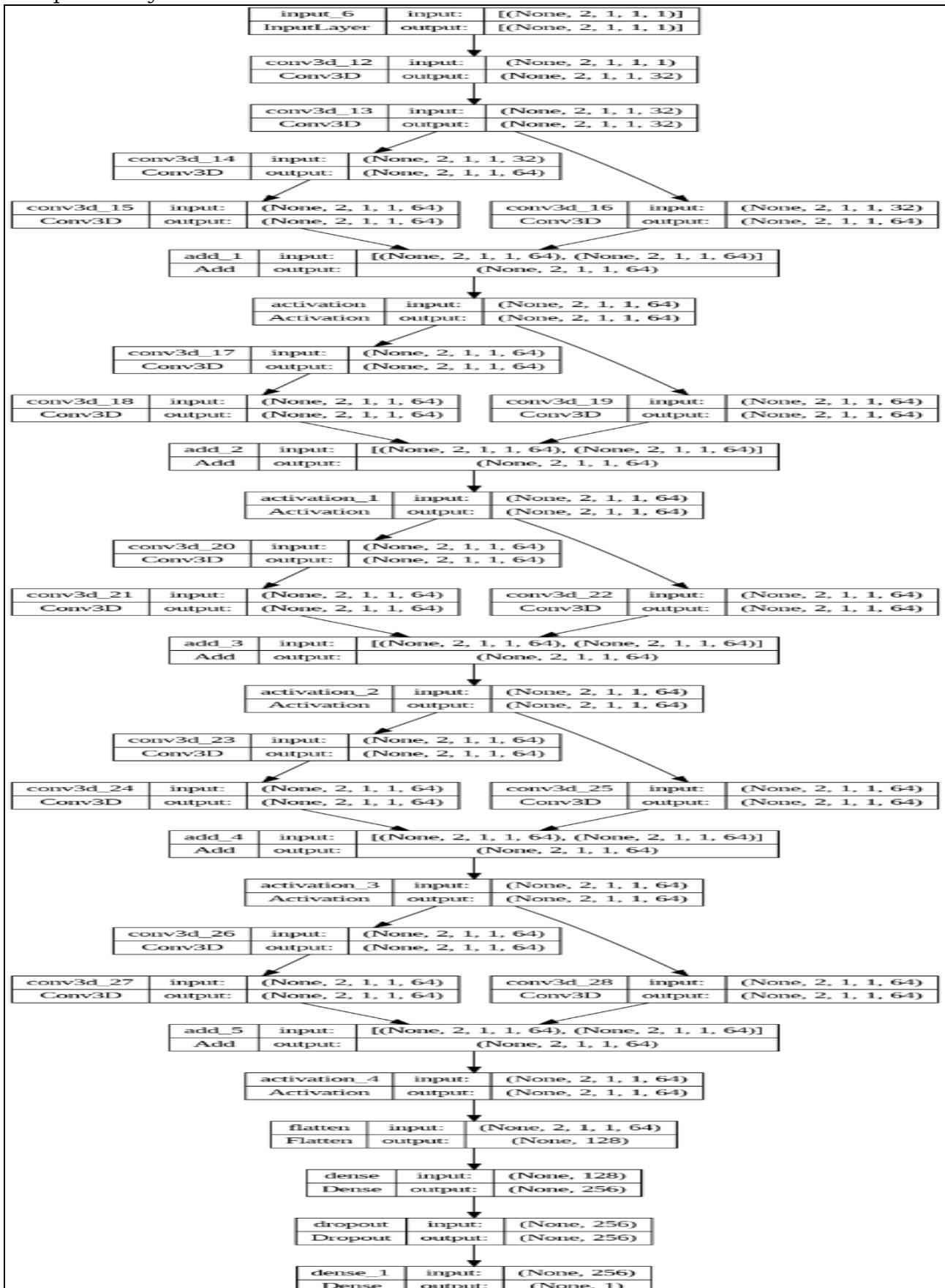
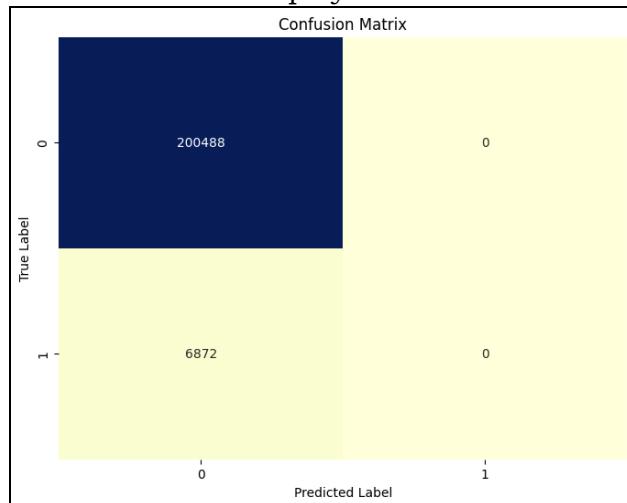


Figure 1: Model summary of Res3DeepNet

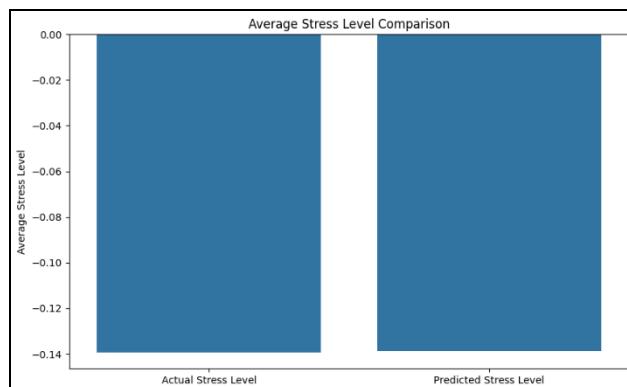
## **RESULTS AND DISCUSSION**

Experimental results demonstrate the effectiveness of the proposed model in predicting stress levels from ECG signals. The model achieves high accuracy and robustness across different stress scenarios, outperforming baseline methods [7, 8]. Comparative analysis with existing approaches further validates the superiority of the proposed model [9, 10]. The 3D-CNN architecture with skip connections proves to be effective in capturing relevant features from the ECG signals, enabling accurate stress prediction. Additionally, the model exhibits good generalization performance, suggesting its potential for real-world deployment.



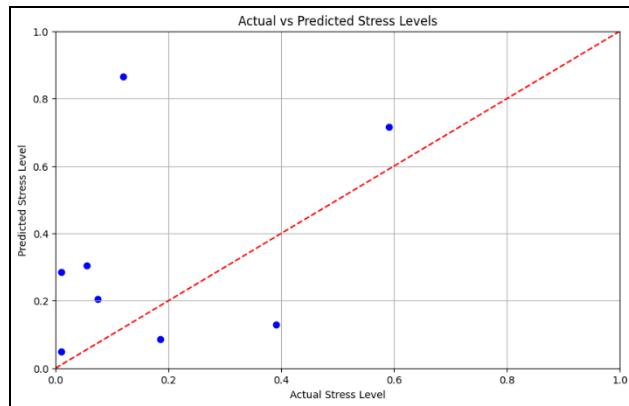
*Figure 2: Confusion Matrix*

The confusion matrix depicts the model performance and ensures the accuracy of 82.775% accuracy [Figure 2]. The following histogram plotting further confirms that most of the time during a test run out model has predicted the presence of stress correctly [Figure 3].



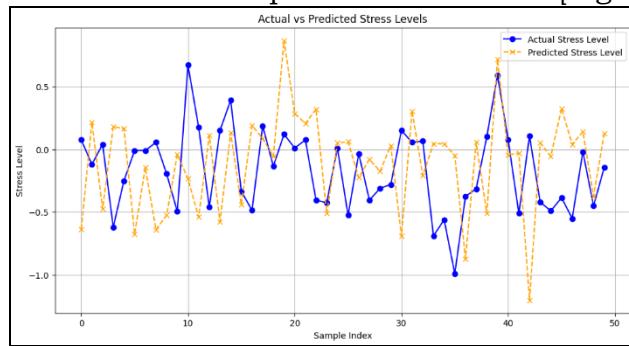
*Figure 3: Histogram of Actual v/s predicted stress levels*

The scatter plot shown below is indicative of the fact that our model has been trained optimally without any biases, underfitting or overfitting [Figure 4].



*Figure 4: Scatter plot of the model performance*

The overall performance can be viewed from the following line plot, which shows the data points precisely of the actual and predicted use cases [Figure 5].



*Figure 5: Line plot for actual v/s predicted stress levels*

However, challenges such as data variability and model interpretability need to be addressed to enhance reliability and applicability. Future research directions may include exploring multimodal data fusion techniques and incorporating domain knowledge to improve model performance and interpretability.

## **CONCLUSION**

In conclusion, this research paper presents a novel approach for predicting stress levels using deep learning techniques and ECG signals. The proposed model offers a non-invasive and objective means of assessing stress levels, with implications for personalized health monitoring and intervention strategies, with a fair accuracy of 82.775%. Moreover, the incorporation of 3D-CNN in this context opens a new door for leveraging higher dimensional models for physiological analysis using various biomedical signals. By leveraging advances in deep learning and physiological signal analysis, this study contributes to ongoing efforts to leverage technology for improving health outcomes and well-being.

## **REFERENCES**

1. Mendelson, Yonatan, et al. "Predicting Stress Levels Using Convolutional Neural Networks on ECG Signals." *International Journal of Psychophysiology*, vol. 150, 2020, pp. 57-66. ScienceDirect, doi:10.1016/j.ijpsycho.2019.12.013.
2. Chen, Zhihan, et al. "Smartphone-Based Stress Detection Using Wearable Sensors: A Review." *Sensors*, vol. 22, no. 18, 2022, article 7034. MDPI, doi:10.3390/s22187034.
3. Amin, Muhammad, et al. "ECG-Based Driver's Stress Detection Using Deep Transfer Learning and Fuzzy Logic Approaches." *IEEE Access*, vol. 10, 2022, pp. 1-1. doi:10.1109/ACCESS.2022.3158658
4. Keshan, N., Parimi, P. V., and Bichindaritz, I. "Machine Learning for Stress Detection from ECG Signals in Automobile Drivers." 2015 IEEE International Conference on Big

- Data (Big Data), Santa Clara, CA, USA, 2015, pp. 2661-2669. doi: 10.1109/BigData.2015.7364066.
- 5. Tzevelekakis, Konstantinos et al. "Real-Time Stress Level Feedback from Raw Ecg Signals for Personalised, Context-Aware Applications Using Lightweight Convolutional Neural Network Architectures." *Sensors (Basel, Switzerland)* vol. 21,23 7802. 24 Nov. 2021, doi:10.3390/s21237802
  - 6. [Dataset] Goldberger, A., Amaral, L., Glass, L., Hausdorff, J., Ivanov, P. C., Mark, R., ... & Stanley, H. E. "PhysioBank, PhysioToolkit, and PhysioNet: Components of a New Research Resource for Complex Physiologic Signals." *Circulation*, vol. 101, no. 23, 2000, pp. e215–e220.
  - 7. R. K and V. R. Murthy Oruganti. "Stress Detection using CNN Fusion." TENCON 2021 - 2021 IEEE Region 10 Conference (TENCON), Auckland, New Zealand, 2021, pp. 492-497. doi: 10.1109/TENCON54134.2021.9707438.
  - 8. Hadi, Usman, et al. "Review of Sensor-Based Wearable Systems for Stress Detection in Nursing." *Journal of Healthcare Engineering*, vol. 2021, 2021, Article ID 9951905, 13 pages. doi:10.1155/2021/9951905.
  - 9. Bannore, A., Gore, T., Raut, A., and Talele, K. "Mental stress detection using machine learning algorithm." 2021 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), Mauritius, 2021, pp. 1-4. doi: 10.1109/ICECCME52200.2021.9590847.
  - 10. Swaymprabha Alias Megha Mane and Arundhati Shinde. "StressNet: Hybrid model of LSTM and CNN for stress detection from electroencephalogram signal (EEG)." *Results in Control and Optimization*, vol. 11, 2023, article 100231. ISSN 2666-7207, doi:10.1016/j.rico.2023.100231.

## Smart Glass: A Solution for the Visually Impaired.

Rounak Gupta  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 rounakgupta0341@gmail.com

Sourav Bhattacharya  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 sourav12112003@gmail.com

Samadrito Roy  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 samadritoroy702@gmail.com

Surya Kiran Mukherjee  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 suryakiranmukherjee@gmail.com

Rudradeep Sen  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 rudradeep.sen23122002@gmail.com

Soumen Sen  
 Electronics and  
 Communication  
 Engineering (ECE)  
 Asansol Engineering  
 College  
 Asansol, India.  
 sensoumen198@gmail.com

**Abstract—**Smart glasses enabling visual sensing to ensure human support for the visually impaired are the key prospect of this work. However, most of the system functions for vision sensing smart glasses are not up-to the mark due to lack of adequate features like erroneous sensing. Here, we work on Smart blind glasses that reduces error by introducing obstacle detection feature to help the visually impaired person. The future development prospects of smart blind glass are overviewed, to boost the development and to provide safe and efficient travel guarantee for the visually impaired. In this article, we will demonstrate how to build Smart Glass using Arduino Uno, Ultrasonic sensors and vibration motors. Building it ourselves will help us to understand how an ultrasonic sensor works and the components required for its construction.

**Keywords—** Smart blind glass; Ultrasonic sensor; Vibration motor; Arduino Uno; Visually impaired.

### **Introduction**

Visual impairment is considered as a major global health issue. According to

World Health Organization and National Federation of the Blind, the visual impairment and causes have been estimated in the year 2010. There are more than 250 million people who are visually impaired and out of which 36 million people are blind [1]. Among them, 82% of the total blindness is for people with 50 years and older. The interesting fact is, India is the home ground to the world's largest number of blind people [2]. In the present world, it is estimated to be almost more than 2 billion people have a vision impairment or blindness. Among 1 billion people includes those with moderate or severe distance vision impairment or blindness due to unaddressed refractive error, cataract, glaucoma, corneal opacities, diabetic retinopathy, trachoma and age-related macular degeneration are more common [3, 4]. It is due to physiological or neurological factors. In terms of regional differences, the prevalence of distance vision impairment in low and middle income regions is estimated to be four times higher than that of the high income regions. With regards to near vision, 80% of unaddressed near vision impairment is addressed in low income regions. While comparative rates in high-income regions, are reported to be lower than 10% [5]. In

their daily life, they are trying to face and overcome some of their challenges, when living life [14]. This paper reviews the challenges and finding the solution to the one of the most important problems face by them. Vision impairment or vision loss, is a decreased ability to see the environment and objects to a low variant of degree. This can be overcomed by using different variants of contact lenses. The term blindness is used for complete or nearly complete vision loss. Those persons who finds very difficult to leave independently such as not able to move freely. Nowadays, different types of such glasses have been used such as white cane<sup>[6]</sup>, the smart cane<sup>[8]</sup>, the smart glasses<sup>[7]</sup> and the laser glass<sup>[9]</sup>. The smart glasses is a pair of glasses with two ultrasonic sensors on each side of the glass, connected to Arduino board thereby connected with the vibration motors which is attached on each leg of the person that helps navigate and avoid obstacles on the road. It is their visual aid that helps identify dents, platform edges, steps, uneven surfaces. Some of them choose to use the glasses to move around while others use it to let people know about their visual impairment. It is important to understand that not all of them are entirely blind or have the same eye condition. Sensing through simple glasses is cost efficient, but time consuming and less efficient, which results in reducing the confidence of visually impaired persons, to do something or go outside from the house. Based on the available validations and analysis reports, the number of visually impaired persons will increase. Mostly, these deficiency is commonly seems to IT professionals, due to continuous work in-front of the computer screen, which also reduces the efficiency of the eye in the future, after a particular age. Many people suffer from serious visual impairments reasons. Sometimes, we can cure the problem through proper analysis and treatment. Some people are born as blind, those issues cannot be cured through surgery. In this scenario, the future generation needs some more technically developed equipments to move and achieve. They need a wide range of tools and techniques to make their mobility make easy, at that time we need a cost effective method or device for the persons to walk independently. Most recently, many techniques have been developed to boost the mobility of blind and visual impaired

persons, which to be dependent on signal processing and sensor technology. These are widely called Electronic Travel Aid. Based on their aspects, they are, mainly of two types: sonar [10, 11] and camera input systems [12, 13]. These equipments are used to identify the direction, height and speed of the objects. Also, the distance between the obstacles. However, all prevailing systems notify the persons, the presence of an object at a specific distance in front of or near to him, through vibrations. Information about the object characteristics can create additional knowledge. To overcome the above-mentioned margins, this experimental work offers a simple, efficient, configurable guidance system for both the blind and visually impaired persons to help them in their mobility, while they are indoor or outdoor. The ingenuity of the proposed system is that, it make the most of an embedded vision system of one ultrasonic sensor and a vibration motor, which brings all-together to provide reflective signals in order to classify an obstacle through Arduino board. Hence, in addition to distance, the suggested guidance system enables to determine the two main characteristics of the obstacles, which are material and shape. Furthermore, the user can wear the glasses, after the purpose, and reduce to desired length, using motors. So, this Paper proposes the design of A Smart Blind Glasses which can be made by anyone with very minimal cost, which can be made applicable for people with different range.

## MATERIALS AND METHODOLOGY

### Smart Configuration Design

The smart blind glass, is basically an embedded system incorporating the following components, which includes: a pair of ultrasonic sensor to detect obstacles in front of the visually impaired person in the range of 2m and vibration motor for haptic sensation. Fig. 1 shows a schematic representation of the smart blind glass. The sensors will collect the real-time data and send it to the Arduino board for processing. After processing, the Arduino gives message to Vibration motors to give haptic sensation. For choosing a wrong length for visually impaired smart cane can make walking a painful and mind-

numbing process, while take small unsure steps. This may result in either not being able to walk as fast as you want or walking faster than your cane allows and it may disturb or risk bumping into people or objects. The smart glasses on sensing an obstacle in front of a person gives message to Arduino thereby to Vibration motors- when it faces an obstacle on the right side then the right leg of the person will vibrate indicating the person that there is a danger and he should be cautioned, and in the same process the left ultrasonic sensor works.

The features are:

- Vibrations on each side of the person for different obstacles
- Cost efficient
- More efficient and economical than other devices.
- Easy to access for blinds.

The system is featured by its small size and low cost when it is compared with other systems that use separate microprocessor, input/output devices, and memory. Mixed signal microcontrollers are common, integrating analog components needed to control non-digital electronic systems.



Fig 1: Smart Blind Glass

## System architecture

### i) Ultrasonic Sensor:

Ultrasonic sensor is used to measure the distance between the obstacles and itself. Since it mounted on to the glasses, it finds the distance between the glass and the obstacles ahead.



Fig. Hardware architectural framework

### ii) Arduino Uno:

Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller (MCU). The microcontroller board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits.



Fig 2: Arduino Uno [15]

## BLOCK DIAGRAM

### iii)Vibration Motors:

Vibrator Motors are the mechanical devices used to develop vibrations. The generation of vibration has happened with the support of an electric motor having an inequitable mass on its driveshaft. It is a miniature sized DC motor that lets the user know the sound through vibrations.

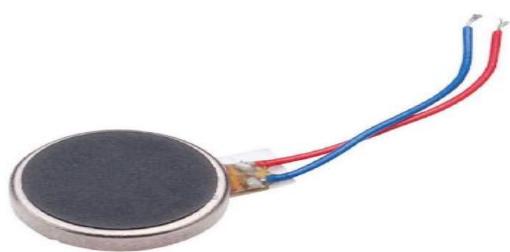


Fig 3: Vibration Motor [16]

### Working

The technology behind the smart glass is pretty straightforward. There are mainly three blocks behind it: input, controller, and output. The input consists of an ultrasonic sensor that is capable of detecting obstacles at a range of up to about 2 meters. It is interfaced to the Arduino, which determines if an obstacle is too close to the spectacles and triggers the output if it is. The output consists of a vibration motor to provide haptic response. When an obstacle comes on the right side of a person at a distance of 2 meters then the right leg will vibrate with the help of vibration motors and when an obstacle comes on the left side at the same distance then the left leg will vibrate and if an obstacle comes in front (from front) then both the legs will vibrate indicating the blind person that there is danger and he/she needs to be cautioned.

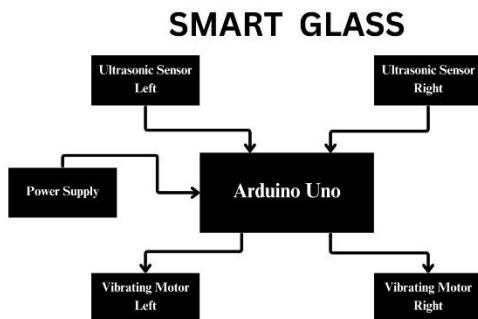


Fig 4: Block Diagram system hardware

## CONCLUSION

With the proposed design, a simple, cheap, configurable electronic blind smart glass is constructed, with at most accuracy, the blind people will be able to move from one place to another without others help, which helps to improve the constructive assistant and support for blind and visually impaired persons for children and aged peoples, also it leads to increase autonomy for the blind. The developed smart glass that is amalgamated with sensors will help in navigating the way while walking and keep alarming the person if any sign of danger or inconvenience is detected. The whole system indicates that the system is more efficient and irreplaceable in its capability in specifying the source and distance of the objects that may encounter. This system does not require a huge device to hold, also does not require any special training. The developed prototype gives good results in detecting obstacles placed at distance in front of the user; it will be a real boon for the blind. The smart glass prototype has successfully designed and analyzed this paper. The newly designed stick complies with the human ergonomics because it is

developed for adult users. The blind glass prototype is tested for different heights of obstacles. This novel blind glass stick is capable to assist a blind person to move independently.

## FUTURE WORK

Future work will be focused on improving the performance of the system by making it wireless and the journey towards a more inclusive and equitable world is ongoing, and smart cane and smart glass technologies represent important steps forward in that journey. Through continued research, innovation, and advocacy, we can harness the power of technology to break down barriers, empower individuals, and create a more accessible and inclusive society for all. Moreover, shape detection test for objects that move at different rotational speeds across several distances will further be considered. Currently we are using rechargeable batteries, with the help of charging ports. For higher proportions, to fix compatible solar panels, for charging purpose, in order to avoid continues charging at instants.

## Acknowledgment

**WE WOULD LIKE TO EXPRESS OUR SINCERE GRATITUDE TO ALL THOSE WHO HAVE CONTRIBUTED TO THE COMPLETION OF THIS RESEARCH PAPER. FIRSTLY, WE EXTEND OUR HEARTFELT THANKS TO THOSE WHO GENEROUSLY SHARED THEIR TIME, INSIGHTS, AND EXPERIENCES, WITHOUT WHICH THIS STUDY WOULD NOT HAVE BEEN POSSIBLE. WE ARE ALSO GRATEFUL TO OUR RESEARCH ADVISORS FOR THEIR GUIDANCE, SUPPORT, AND INVALUABLE FEEDBACK THROUGHOUT THE RESEARCH PROCESS.**

## References

- [1] <https://www.who.int/blindness/publications/globaldata/en/>
- [2] A Basic Smart Stick for Visually Impaired Persons, Sachin Saj T K1, Shruthy Aravind Menon2, Shankar Saj T K3
- [3] <https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment>
- [4] Bourne RRA, Flaxman SR, Braithwaite T, Cicinelli MV, Das A, Jonas JB, et al.; Vision Loss Expert Group. Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and metaanalysis. *Lancet Glob Health.* 2017 Sep; 5(9):e888–97.
- [5] Fricke, TR, Tahhan N, Resnikoff S, Papas E, Burnett A, Suit MH, Naduvilath T, Naidoo K, Global Prevalence of Presbyopia and Vision Impairment from Uncorrected Presbyopia: Systematic Review, Meta-analysis, and Modelling, *Ophthalmology.* 2018 May 9
- [6] <https://www.letsenvision.com/blog/all-you-need-to-know-about-the-white-cane> -- accessed on 13.02.2024
- [7] A Smart Infrared Microcontroller-Based Blind Guidance System, Amjad S. Al-Fahoum, Heba B. Al-Hmoud, and Ausaila A. Al-Fraihat
- [8] A. A. Tahat, "A wireless ranging system for the blind long-cane utilizing a smart-phone," in Proceedings of the 10th International Conference on Telecommunications (ConTEL '09), pp. 111–117, IEEE, Zagreb, Croatia, June 2009.
- [9] D. Bolgiano and E. Meeks Jr., "A laser cane for the blind," IEEE, *Journal of Quantum Electronics,* vol. 3, no. 6, p. 268, 1967.
- [10] S. Shoval, I. Ulrich, and J. Borenstein, "NavBelt and the guidecane [obstacle-avoidance systems for the blind and visually impaired]," *IEEE Robotics and Automation Magazine,* vol. 10, no. 1, pp. 9–20, 2003.
- [11] S. Shoval, J. Borenstein, and Y. Koren, "Auditory guidance with the navbelt—a computerized travel aid for the blind," *IEEE Transactions on Systems, Man and Cybernetics C,* vol. 28, no. 3, pp. 459–467, 1998.
- [12] N. G. Bourbakis and D. Kayraki, "An intelligent assistant for navigation of visually impaired people," in Proceedings of the 2001 IEEE 2nd International Symposium on Bioinformatics and Bioengineering Conference, pp. 230–235, IEEE, 2001.
- [13] G. Sainarayanan, R. Nagarajan, and S. Yaacob, "Fuzzy image processing scheme for autonomous navigation of human blind,"
- [14] <https://www.letsenvision.com/blog/challenges-blind-people-face-when-living-life> -- accessed on 13.02.2024
- [15] <https://en.wikipedia.org/wiki/Arduino Uno> -- accessed on 13.02.2024
- [16] <https://ifuturetech.org> -- accessed on 13.02.2024

## The Scope Cloud Computing: Trends, Obstacles, and Opportunities

Sudip Das

Assistant Professor, Computer Application, Narula Institute of Technology, Kolkata, India

**Abstract - The way that organizations and individuals access and manage data, apps, and services has been completely transformed by cloud computing. This study examines how cloud computing will develop in the future by examining present trends and their possible effects. It explores important areas of development such as server less computing, quantum computing, edge computing, and environmentally friendly cloud operations. The study explores how putting processing closer to the data source using edge computing could improve latency-sensitive applications. It also looks at how complicated issues that are currently unsolvable by conventional computers might be resolved by quantum computing. It also emphasizes how server less computing, which offers greater scalability and cost-efficiency, is becoming more and more popular. The final section of this paper offers insights into the rapidly changing cloud computing ecosystem and its significant ramifications for business, technology, and society at large.**

**Keywords:** Cloud Computing, Cloud Security, Quantum Computing, Internet of Things (IoT), Cloud Service Models, Edge AI.

### I. INTRODUCTION

In recent decades, the information technology environment has experienced a significant upheaval, with cloud computing emerging as a key component of this digital revolution. The distribution of computer services via the internet is known as cloud computing, and it has completely changed how people, companies, and organizations access and manage their data, ap

Given that a new age is about to begin, it is essential to investigate how cloud computing will develop in the future and look into the shifting paradigms and dynamic trends that will influence it.

The cloud has been adopted at a rate never seen before in the last ten years, thanks to its scalability, flexibility, and affordability. But as cloud computing develops, new possibilities and challenges present themselves. This study attempts to give a thorough picture of cloud computing future, highlighting the developments and breakthroughs that will redefine its potential and have an impact on a global scale of sectors.[1]

We'll explore subjects including serverless architectures, edge computing, quantum computing, and the changing security scene—all of which have the power to fundamentally alter the way that we think about cloud computing. We will also look at how cloud computing affects developing industries like bitcoin, IoT, and artificial intelligence. This study paper looks at these important areas in order to give readers a thorough grasp of how the cloud computing industry is changing and to encourage more investigation into the undiscovered regions of this rapidly developing digital frontier.[2]

### II. INTERACTION WITH IOT

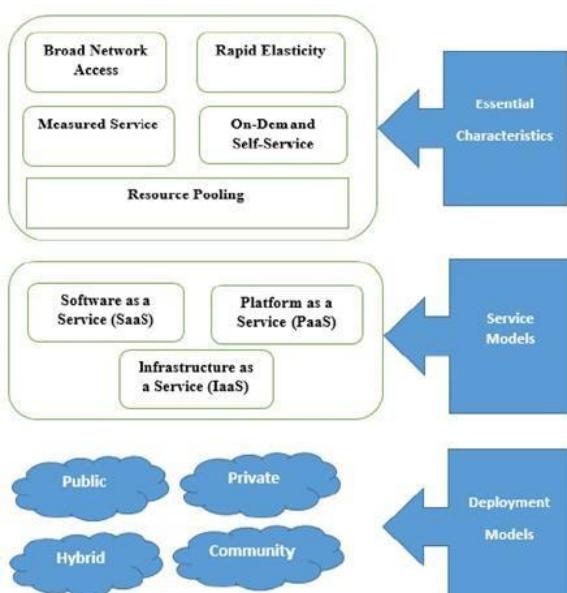
Cloud computing and the Internet of Things (IoT) are two revolutionary technologies that have attracted a lot of attention lately. While cloud computing offers scalable and on-demand access to

computational resources and services over the internet, the Internet of Things (IoT) refers to the connecting of physical items or "things" through the internet. Because IoT and cloud computing are complementary, research at their interface has grown in significance.

**Figure 1: Integration between IOT & Cloud Computing**

Massive volumes of data are produced by IoT sensors and devices; they must be effectively handled, analysed, and stored. The best infrastructure for managing this data flood is provided by cloud computing. Cloud systems offer the scalability, computational power, and storage capacity required to handle real-time Internet of Things data processing and enable data-

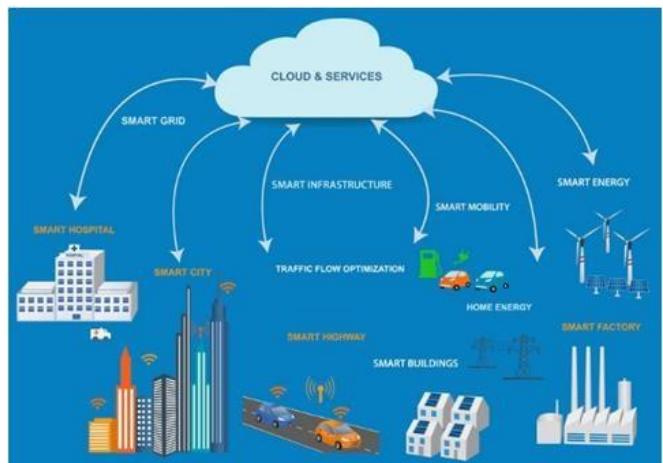
driven applications.



Additionally, because cloud services allow enterprises to take advantage of pay-as-you-go models and avoid the high upfront costs associated with constructing and maintaining on-premises equipment, IoT deployments become more affordable. Optimizing data management, security, and IoT device interaction with cloud platf

areas of research in this field. It also examines cutting-edge uses of cloud computing and the Internet of Things, including smart cities, industrial automation, and healthcare monitoring, among others.

In summary, IoT and cloud computing



have a symbiotic relationship in research, with cloud technology acting as a fundamental facilitator for IoT's expansion and efficacy. Further study endeavors to augment the synergy between these two revolutionary concepts.[3-4]

### III. MODEL of NIST

In cloud computing research, the NIST (National Institute of Standards and Technology) model is essential. NIST's groundbreaking paper, NIST Special paper 800-145, presented a complete framework in the context of cloud computing. The fundamental traits, service models, and deployment patterns that underpin cloud computing are outlined in this paradigm.

**Figure 2: Diagram of NIST Model**

The five key components of NIST's cloud computing architecture are resource pooling, quick flexibility, measurable service, broad and on-demand self-service.

These features, which place a strong emphasis on scalability, flexibility, and affordability, characterize the fundamental qualities of cloud services.[5]

Moreover, NIST names Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) as the three main cloud service models. With the help of these models, customers can access software applications, development platforms, or computer resources without having to worry about maintaining a complex infrastructure.

Cloud deployments are also divided into four primary categories by the NIST model: public, private, community, and hybrid clouds. Every deployment type gives a different degree of control and customization while meeting particular organizational needs.

Finally, it should be noted that the NIST cloud computing model is a key resource for cloud computing research and business applications. It offers a uniform framework for comprehending, contrasting, and putting into practice cloud services, greatly advancing the expansion and use of cloud technology across a range of industries. The NIST model is still used by academics and industry professionals to guide the development of new cloud computing techniques and advances.[6]

#### **IV. FUTURE SCOPE**

Research on cloud computing has a very bright future ahead of it, with numerous important areas of focus emerging. First, because protecting sensitive data and maintaining privacy is becoming more and more important, cloud security innovations will continue to be a major concern. Novel encryption methods, identity management

program, and threat detection systems will all be investigated by researchers.

Second, there will be a greater focus on creating effective algorithms for allocating cloud resources. With cloud usage continuing to soar, resource allocation optimization that maximizes performance while minimizing costs is imperative.

Third, in order to meet the need for real-time, low-latency processing at the network edge, edge computing and fog computing will emerge as crucial research areas. In order to distribute processing power among geographically dispersed devices and data centers, new paradigms will be needed.

Fourth, a key area of emphasis for cloud computing will be sustainability. Researchers will focus on methods for reducing carbon footprints, integrating renewable energy sources, and building energy-efficient data centers.

Ultimately, a major focus of cloud research will continue to be the development of cloud-native technologies

that improve developer productivity, scalability, and agility, including server less computing and containerization.

To summarize, cloud computing research will focus on edge computing, cloud-native technologies, resource optimization, security, and sustainability in the future. These areas will present many chances for creative research and development. [7-8]

## V. CONCLUSION

In summary, the landscape of cloud computing is expected to change dramatically in the future and be characterized by a number of important trends, obstacles, and possibilities. With a growing reliance on edge computing, serverless designs, and multi-cloud techniques, cloud computing is set to become even more commonplace as technology develops. This expansion is not without difficulties, though. Regulatory compliance, security, and privacy concerns will continue to be at the forefront of cloud adoption. Furthermore, there will be a critical need for qualified experts in cyber security and cloud management.[9]

Cloud computing offers a lot of benefits to both individuals and enterprises, even with these drawbacks. Innovation, cost-effectiveness, and scalability are made possible unlike anything else. There is a lot of room for improvement in terms of intelligent and automated solutions by utilizing AI and machine learning in cloud services. Organizations need to prioritize security, maintain agility, and make ongoing learning and development investments if they want to prosper in the rapidly changing cloud world. Cloud computing has a bright future, but utilizing its opportunities and navigating its problems will need a proactive strategy.[10]

## REFERENCES

- [1] Mell, P., & Grance, T. (2011). The NIST definition of cloud computing.
- [2] Armbrust, M., Fox, A., Griffith, R., Joseph, A. D., Katz, R., Konwinski, A & Zaharia, M. (2010). A view of cloud computing. Communications of the ACM, 53(4), 50-58.
- [3] Buyya, R., Yeo, C. S., Venugopal, S., Broberg, J., & Brandic, I. (2009). Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility. Future Generation computer systems, 25(6), 599-616.
- [4] Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud computing—The business perspective. Decision Support Systems, 51(1), 176-189.
- [5] Mell, P., & Grance, T. (2010). The NIST definition of cloud computing. Communications of the ACM, 53(6), 50-58.
- [6] Subashini, S., & Kavitha, V. (2011). A survey on security issues in service delivery models of cloud computing. Journal of network and computer applications, 34(1), 1-11.
- [7] Vaquero, L. M., Rodero-Merino, L., Caceres, J., & Lindner, M. (2009). A break in the clouds: towards a cloud definition. ACM SIGCOMM Computer Communication Review, 39(1), 50-55.
- [8] Armbrust, M., & Fox, A. (2009). Above the clouds: A Berkeley view of cloud computing. EECS Department, University of California, Berkeley, Tech. Rep. UCB/EECS-2009-28.
- [9] Zhang, Q., Cheng, L., & Boutaba, R. (2010). Cloud computing: state-of-the-art and research challenges. Journal of Internet Services and Applications, 1(1), 7- 18.
- [10] Dikaiakos, M. D., Katsaros, D., Mehra, P., Pallis, G., & Vakali, A. (2009). Cloud computing: Distributed internet computing for IT and scientific research. IEEE Transactions on Parallel and Distributed Systems, 20(10), 145-151

## **ARDUINO BASED SMART GLOVE FOR SIGN LANGUAGE RECOGNITION**

Yash Raj Singh<sup>1</sup>, Sukanya Chatterjee<sup>2</sup>, Dr. Anilesh Dey<sup>3\*</sup>

<sup>1</sup> Department of Electronics and Communication Engineering, Narula Institute of Technology

<sup>2</sup> Associate Software Engineer, Accenture

<sup>3</sup>\*Principal, Nagar College, Murshidabad

**In today's world, there are many people with speech disability. The only medium of communication they have is sign language, but it is not practically possible for everyone to know sign language. This research work emphasizes on filling the bridge gap between a speech impaired person and normal masses in the most cost effective way. The arduino based smart glove proposed henceforth aims to improve communication for the speech impaired people. Our Wearable Communication Device (WCD) uses multiple push button types switches configured with arduino and display to project the desired message the impaired person wants to convey. The data displayed will in text form but with the use of text-to-speech converter the text can be converted to speech for more effective communication. Our proposed project aims to be the voice of the dumb people. This proposed model can be extended by adding more combinations of textual matter coded and configured with the arduino.**

**Index terms:** Arduino, speech impaired  
**Wearable Communication Device (WCD)**

### **INTRODUCTION**

Speech is the power of communication that differentiates humans from other creatures. It is the simplest and fastest way of communication. According to the National Institute on Deafness and Other Communication Disorders (NIDCD), approximately 7.5 million people in the United States had difficulty using their vocals as of July 2016. Therefore speech impairment is a very important problem that needs to be addressed. Sign language is one of the approaches to address this problem but sign language is confined to a very few people and moreover different regions of the world have different sign languages. Thus we need a solution to overcome this drawback. There is a sensor-based approach whereby flex sensors are used to decode the sign language based on the angle of bend of the fingers. Another approach to address the problem is by image processing and then recognizing the language using deep learning or machine learning algorithms. This approach is highly effective but it is not possible to be provided to the masses and for effective communication it also requires a camera which shall thereby increase the cost. Therefore to overcome the drawbacks we have put forward a model which is cost effective and a Wearable Communication Device and thus it is portable. We have configured four push buttons with arduino nano and each configuration has a text or phrase coded with it. Since these button type switches are cheap as compared to the sensors, hence our WCD is cost effective and can handle minor impact as well. The user can even code the desired phrase or text with each button switch as per their need and comfort. Moreover we have used arduino nano module for our device and hence the entire device is light weight as well. The use of arduino

nano also contributes in making the device cost effective as there are multiple pins in arduino nano and in our approach we need one analog pin for proper functioning. In case if the configured pin gets damaged, we can use one of the 8 available pins and reconfigure the arduino again. Since we have used arduino nano thus we need maximum 9V to operate our device. The default coding of our device is set to display basic phrases like if the person wants to go to the washroom, or is hungry or wants to introduce himself to the person in front.

Since our we have used four push button switches we can also inter combine them to be 24 such combinations of text and phrases and configure them with arduino and thus the usability of the device increases.

### **RELATED WORK**

The sign language recognition can be approached in two ways, either using a Wearable Communication Device or using computer vision. Bijay et al[1] made a WCD using flex sensors whereby the flex sensor gets triggered if the fingers of the hand are bend to some angle and then accordingly the text/phrase is displayed. Kamal Preet et al[2] used image processing for sign language recognition by comparing images. Rastgoo et al[3] proposed deep learning approach for sign language recognition but this approach required a heavy processing mechanism. Chai et al[4] used a 3D motion trajectory for sign recognition and this approach proved 96.32%. This approach also required a complex infracture. Thus our WCD approach follows a user friendly approach and is easily protable. Ashish Sethi et al[5] presented application system which is the real time gesture to text conversion. The processing steps include: gesture extraction, gesture matching and conversion to speech. Gesture extraction involves use of various image processing techniques such as histogram matching, bounding box computation, skin colour segmentation and region growing. Techniques applicable for Gesture matching include feature point matching and correlation based matching

### **DESIGN AND WORKFLOW**

The device is designed keeping in mind the user's comfort. On the palm section we will have the four button switches mounted. On the wrist we will have our arduino and our LED display mounted. There are 8 analog pins in arduino nano but we have configured our A0 pin of the arduino nano. When the user presses a button, the arduino receives an analog reading and as per the reading the text or phrase is displayed.



Fig 1. Workflow of proposed WCD



Fig 2. Double side demonstration of the design

### **METHODOLOGY OF WORKING**

We have arduino IDE environment for coding.

**Arduino IDE:** The Arduino IDE is an open-source software, which is used to write and upload code to the Arduino boards. The IDE application is suitable for different operating systems such as Windows, Mac OS X, and Linux. It supports the programming languages C and C++. Here, IDE stands for Integrated Development Environment. The program or code written in the Arduino IDE is often called as sketching. We need to connect the Genuino and Arduino board with the IDE to upload the sketch written in the Arduino IDE software. The sketch is saved with the extension '.ino.'

We have arduino nano module as our microcontroller board. It has ATmega328P microcontroller chip. It has total 30 pins out of which 22 are input/output pins. Out of the 22 pins, 14 pins are digital pins and 8 pins are analog pins. A 5v output pin, 2 ground pins, 1 reset pin and one input ( $V_{in}$ ) pin.

The arduino nano module used the ATMega328P microcontroller with a maximum clock frequency of 20MHz, 32KB program flash and 2KB RAM. It can operate within a temperature range of  $-40^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ .

We have used the A0 pin of the arduino nano for configuring our push button switches. The 5v output pin of the arduino is connected in series with the push button switches and  $100\text{k}\Omega$  resistors. The A0 pin is grounded using  $1\text{k}\Omega$  resistor. We are initially displaying our output in the arduino IDE environment. The arduino IDE serial monitor keeps running in loop and if it captures a reading via the A0 pin then it is displayed in the serial monitor. While configuring each push button we noted down the ranges that the serial monitor showed when a particular switch was pressed. The values registered fell in different ranges for different switches.

Accordingly we coded the phrases as per the values.

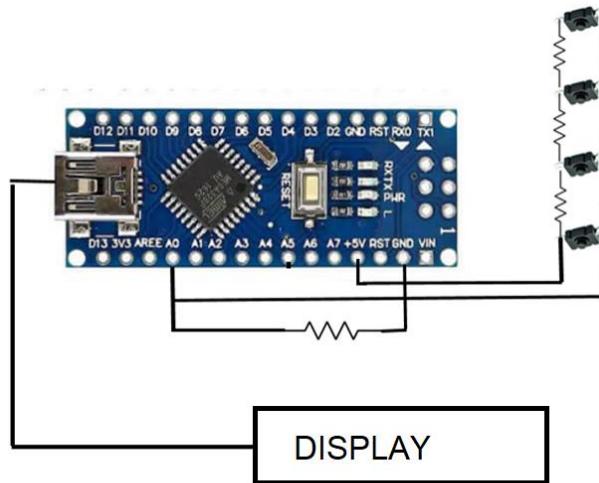
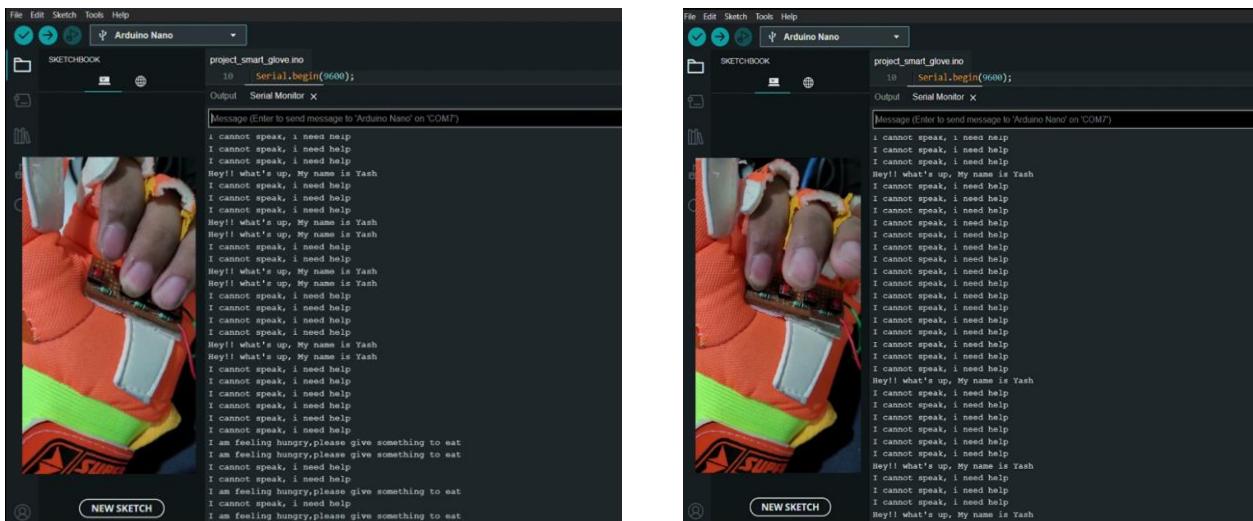


Fig 3. Circuit diagram of proposed device

## **RESULTS AND DISCUSSION**

Thus the project is effective for speech impaired people. The output when different switch buttons are pressed are shown in figure 4. A default phrase is continuously shown in loop so as to ease the communication. Thus the user friendly aspect is kept in mind at every step.



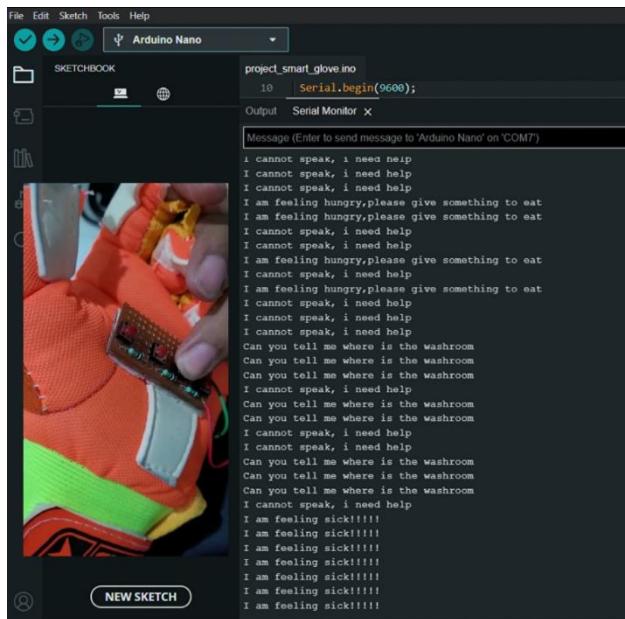


Fig 4. Output snippet of the project

## **CONCLUSION**

This project can thereby work a bridge of communication between the speech impaired people and the normal masses. The scope of the project can be extended by adding a text-to-speech module into the device and by increasing the number of combinations among the switches we can increase more text/phrases into the microcontroller chip.

## **ACKNOWLEDGEMENT**

We would like to express our gratitude to our project supervisor Prof. (Dr.) Anilesh Dey for all the support throughout this project. We would also like to thank our institution, Narula Institute of Technology for giving us the opportunity to work on this project.

## **REFERENCES**

1. Sapkota, Bijay, et al. "Smart glove for sign language translation using Arduino." *1st KEC Conference Proceedings*. Vol. 1. 2018.
2. Kour, Kamal Preet, and Lini Mathew. "Sign language recognition using image processing." *International Journals of Advanced Research in Computer Science and Software Engineering* 7.8 (2017).
3. Rastgoo, Razieh, Kourosh Kiani, and Sergio Escalera. "Sign language recognition: A deep survey." *Expert Systems with Applications* 164 (2021): 113794.
4. Chai, Xiujuan, et al. "Sign language recognition and translation with kinect." *IEEE conf. on AFGR*. Vol. 655. 2013.
5. Ashish Sethi, Hemanth ,Kuldeep Kumar,Bhaskara Rao ,Krishnan R, "Sign Pro- An Application Suite for Deaf and Dumb", IJCSET , Volume 2, Issue 5, pp- 1203-1206, May 2012

## **Scope on Job Opportunities in The Era of Disruptive Technologies in India**

**Somnath Chakraborty, Assistant Professor, Department of Business Administration, Narula Institute of Technology, M: 9830573087, mail id: [somnath.chakraborty@nit.ac.in](mailto:somnath.chakraborty@nit.ac.in)**

### **Abstract**

Technological advancements cause the economy to flourish, which in turn creates new jobs while rendering some older ones obsolete. But as exponential technologies proliferate—think mobile internet, internet of things, big data analytics, artificial intelligence, etc.—they are drastically upending this cycle and hurting employment that required both brains and muscle. In order to avoid the dire threat of jobless Indian growth, this article examines the effects of this change in the Indian context and makes a number of policy recommendations for the government, business community, and educational institutions to get ready for the future of jobs in India.

**Key words:** Jobless growth, Technology, Industry 4.0

### **Introduction**

The advancements in Information Communication and Technology-advanced mechanics, together with other IT innovations, present a promising development of efficiency and consequent financial development in the years to come. Technologies like social networking, smartphone and tablet use, cloud computing and storage and mobile apps have drastically changed workplace behaviour. This leads to huge gain in operational efficiency and a substantial increase in project delivery on time. The application of information and communication

technology, which aims to increase productivity, affects employment across all industries. The first effect of introducing ICT is a decrease in the number of employed personnel. However, the results plateau beyond a certain point. It can become necessary to start hiring more staff in order to keep up with the increased demands of the industry if the business requirements of the company or sector expand.

### **Technology Led Jobs:**

New occupations are also produced by new technology. Technology is becoming outdated at a rate that is accelerating. Because of this, we require more workers to develop new technologies. In addition, humans are needed to manage any newly developed technology, including the Internet of Things (IoT), sophisticated robotics, knowledge work automation, and three-dimensional printing. In addition, people have an obligation to help others use new technologies. Thus One technology can be a creator and another may be a destroyer in a certain field of work. Top 10 most disruptive technologies are -The Internet of Things, Machine Learning Through Artificial Intelligence,(AI), Process Automation via Robotics (RPA), Augmented, Mixed, and Virtual Reality, Perceptual Aids, Printed Matter, Visualization in 3D, Cloud and mobile internet, Big Data analytics and open data, Blockchain

Artificial intelligence is superlatively growing along with the exponential

growth of computing capacity. As a result, translators are being replaced by Google Translate, investment advisors are being replaced by investment advisory algorithms, and airline piloting expertise is being replaced by automated landing systems. Machine-learning-capable computers are no longer limited to using predefined rules and algorithms. Substantial changes occur when many of these exponential technologies come together. The World Economic Forum's founder, Klaus Schwab, refers to the potential disruption posed by the convergence of artificial intelligence (AI), robotic process automation (RPA), machine learning, and cognitive platforms as the "Fourth Industrial Revolution" (Schwab, 2016).

## Literature Review

IoT applications are primarily perceived as enabling automation of data gathering, hence eliminating the need for manual intervention in data capture (Boos et al., 2013). Big data from IoT can be made publicly available for usage by anyone (Hashem et al., 2016). Through the use of IoT technology in industrial applications, efficiency could be increased. To create comprehensive and efficient management systems, it would be essential to develop, design, and integrate a variety of practical sensors for industrial applications (Li et al., 2022b). Georgios Petropoulos(2022) a researcher, has expressed his thoughts on how the Internet of Things can affect industrial jobs. He thinks there may be hazards associated with mid-level employment that need regular manual skills. However, when IoT technology is implemented, there will be a rise in

the number of non-routine work positions available in the economy. After some time to adjust, those who lose their careers can find other employment. Employees in a number of industries won't have to waste time on routine data collection. Therefore, rather of being seen as a danger to jobs, technology should be seen as a tool for efficiency.

**Objective:** A. To understand impact of disruptive technologies

B. To forecast job prospect in these sectors in the wake of IOT and disruptive technology.

**Research methodology:** This research work is totally based on secondary data collected from various journal, website and other sources. Sample in this research is Pan India based on representation. Bernard Marr globally renowned experts in digital transformation tried to predict possible impact of IoT in the following sectors

**A.Impact on Different Sectors:** IoT Adoption in Various Industries. IoT applications are used in a wide range of industries, from manufacturing and agriculture to healthcare and smart cities. IoT-enabled agricultural equipment track crop health, weather patterns, and soil conditions to facilitate precision farming and maximize resource use. IoT-based sensors and predictive maintenance programs reduce downtime and increase operational efficiency in the manufacturing sector. IoT-enabled telemedicine and remote patient monitoring improve the healthcare industry and provide access to healthcare in remote places.

2. Demand for IoT Specialists: The need for proficient IoT specialists in India is increasing in tandem with the growing usage of IoT. IoT experts need to be skilled in hardware design, embedded systems, data analytics, cloud computing, and cybersecurity in order to design, develop, and execute IoT solutions.

3. IoT & Data Science: In order to interpret and extract meaningful knowledge from IoT-generated data, data scientists and analysts are needed. To find patterns, trends, and predictions that guide decisions and enhance operations, they use artificial intelligence, machine learning, and data analytics.

4. Skill Development & Training: Specialized IoT technology courses with an emphasis on practical applications and hands-on experience should be offered by educational institutions. The gap between theoretical knowledge and practical IoT initiatives can be closed through industry-academia alliances and IoT-focused workshops.

5. IoT & Start up: An important factor propelling IoT innovation is India's thriving startup ecosystem. The IoT startup scene creates employment chances for qualified individuals looking to contribute to innovative projects.

#### **B. Effect on Jobs:**

**Healthcare:** Automated robotic systems are already used by surgeons for less intrusive treatments. Much more consistently, IBM's Watson can identify lung cancer by analyzing MRI scans. An FDA-approved device made by Johnson & Johnson may autonomously administer modest

doses of anesthesia, rendering the work of anesthesiologists obsolete.

**Insurance:** Nowadays, computers can do many of the tasks performed by insurance brokers and underwriters utilizing big data and machine learning.

**Architecture:** There are currently programs available to assist people in designing their own homes, automating architectural expertise as well as design and color selection. Currently, the majority of users primarily use the software as a visualization tool, but as the programs become more sophisticated, there will be less need for human architects and designers.

**Journalism:** These days, a lot of the work done by journalists may be automated with the use of machine learning techniques like narrative science, which uses data analysis to produce news stories in natural language. Sports and finance reporting, which mostly rely on data and statistics, will use these programs more and more; other industries are not far behind.

**FinTech:** Accountants are no longer necessary because algorithms can now analyze financial data, produce accounts, and file tax returns. ATMs have already supplanted bank tellers to some extent, but eventually automated technologies will be able to readily replace even high-level bankers, such as loan officers. Big data and machine intelligence are now being used by governments to review tax returns and spot possible tax evasion.

**Teaching Community:** Research has already demonstrated that algorithms

can be more successful than human teachers in tailoring instruction to each student's needs based on their knowledge and progress. The teacher's job description will now include orchestration and facilitation in addition to instruction.

**Human Resource:** Data mining is already having an impact on hiring, headhunting, and human resources as computers are taking over the task of screening resumes and identifying the best applicants.

**Marketing & Advertising:** Human manipulation and persuasive skills are what make up marketing. However, even that is effectively being delegated to computers. Businesses are also experimenting with automated ad buying, where computers will select which publications to place advertising in and on which pages, utilizing billions of data points as a guide, rather than having people do it.

**Legal System:** Sophisticated databases can use big data techniques including syntactic analysis and keyword recognition to accomplish the same tasks in much less time. Watson-style machine-learning system would be legally 'trained' to review precedent and case history and even draft legal briefs—which has traditionally been the job of lower level law firm associates.

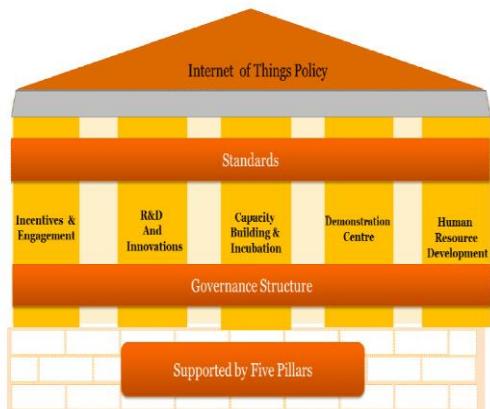
#### **Observation & Analysis: Job Shift in the Current Scenario**

A shadowy and unproductive informal sector continues to be the only source of income for over 80 percent of workers who lack access to formal employment, attesting to a much higher rate of unmeasured unemployment among those looking

to maximize their profits from their abilities in a way that headline statistics do not show. A new technological revolution is underway as India continues its shift to a digital economy, one that will ultimately transform the character of the economy and the nature of labor in the future. Machines can automate routine, straightforward jobs in the current digital economy, but humans are still needed to supply the complexity, depth, and originality that our technology is still unable to provide.

However, as computing power continues to grow, more and more gadgets are becoming internet-connected and algorithms that imitate human cognitive processes are creating a future where complex and unpredictable operations can be automated simply by using a large amount of predicted data. As a result, jobs that are currently thought to be exclusively human domains may be increasingly given over to computers, posing a danger to long-standing employment paradigms.

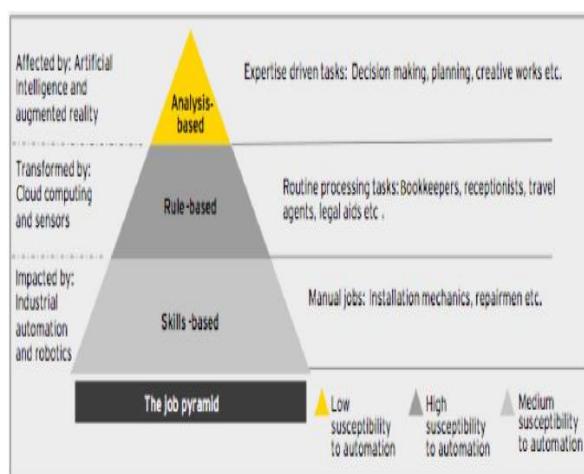
A multi-pillar method has been suggested for the implementation of the IoT Policy's policy framework. The strategy consists of two horizontal supports (Standards & Governance framework) and five vertical pillars (Demonstration Centers, Capacity Building & Incubation, R&D and Innovation, Incentives and Engagements, Human Resource Development).



Picture-1: Approach of IoT in Indian perspective

In an effort to identify the susceptibility of labor to automation, McKinsey Global Institute identified seven discrete categories of tasks which are performed in work, listed below 1. Managing and developing people 2. Applying expertise to decision-making, planning, and creative tasks 3. Interfacing with stakeholders 4. predictable physical activities 5. Collecting data 6. Processing data 7. Predictable physical

#### Future of jobs and its implications on Indian higher education



Source: The Federation of Indian Chambers of Commerce and Industry, November, 2016

The high-skill analytical jobs that are starting to feel the heat from 4IR technologies in industrialized countries are the least susceptible to

automation in India given the existing wage, infrastructural, and capital availability constraints. The labor performed by those at the bottom of the job pyramid is sufficiently irregular and unexpected to prevent automation in the near future, especially considering the low pay of these primarily informal workers.

**Conclusion:** New technology will need to be adopted by the current workforce in order to keep up with the rate at which occupational positions are changing. In order to support the ongoing integration of linked technology into products and services, new job roles can potentially emerge. The proliferation of smart, connected devices would have a big impact on the Indian job market. In addition to a basic understanding of mechanical and electrical engineering, new and diverse skill sets in systems engineering, software development, electronics, and mechatronics are required to build a smart, linked device. The idea behind the Start-up India movement is to encourage young people to aspire to work as employers rather than only as employees. Each year, more than 1,500 tech start-ups are brought to market with features including asset sharing, usage-based pricing, personalization, collaborative ecosystems, and agility. The Indian economy has expanded faster as a whole because to these business ideas. In addition to creating jobs and growing the retail and logistics industries, technology-enabled business innovation has also played a significant role in the economy's transition toward the organized sector, as demonstrated by the examples of e-commerce and cab aggregators (Uber/Ola). A number of other industry business owners have

also embraced the "Uber" model of technology-driven service aggregation.

In India, the IoT revolution offers a plethora of chances for job creation and skill development. The digital transformation of India will require the expertise of data scientists, IoT specialists, and IoT entrepreneurs, as IoT becomes a crucial component. India can establish itself as a worldwide leader in the IoT ecosystem, propel economic growth, and build a society empowered by technology by investing in skill development, encouraging innovation, and embracing the revolutionary potential of IoT. India's objective of equitable and sustainable development in the digital age must be reflected in talent development and job opportunities as the nation leverages the power of IoT.

**Referencing:**

Klaus Schwab." The Transnational Human Rights Review 3. (2017) : DOI: <https://doi.org/10.60082/2563-4631.1023>

<https://digitalcommons.osgoode.yorku.ca/thr/vol3/iss1/4>

Borus P(et al)(2013) The Dual aspects of IoT, A systematic benefits and risks of IoT adoption by organisations, International Journal of Information Management, Volume-51

Li Shan (2022) , Future Industry IoT with zero trust security, Information Systems Frontiers <https://doi.org/10.1007/s10796-021-10199-5>

FICCI, NASSCOM & EY (2017). *Future of jobs in India: A 2022 perspective.* Retrieved on February 28, 2018 from [http://www.ey.com/Publication/vwLUAssets/ey-futureof-jobs-in-india/\\$FILE/ey-future-of-jobs-in-india.pdf](http://www.ey.com/Publication/vwLUAssets/ey-futureof-jobs-in-india/$FILE/ey-future-of-jobs-in-india.pdf)

## **Madhusudan Dutt's Poetic Style: A Masterful Blend of Tradition and Innovation**

Chanchal Ghosh, Department of Bengali, Nagar College

**Abstract:** Madhusudan Dutt, a prominent figure in Bengali literature, is widely regarded as one of the pioneers of modern Indian poetry. His poetic style, characterized by a unique blend of traditional and innovative elements, has left an indelible mark on the literary landscape. Madhusudan Dutt is known for his innovative use of language and vivid imagery. His poetic style blends classical and Romantic elements, often weaving mythology with personal emotions. Dutt's work is characterized by a rich use of metaphors, complex wordplay, and a deep exploration of human experiences, reflecting both Western and Indian influences in his writing. This essay aims to explore the key aspects of Madhusudan Dutt's poetic style, highlighting his mastery in combining traditional poetic forms with innovative techniques, and the impact of his work on subsequent generations of poets. The poetic style of Madhusudan Dutt, a prominent Bengali poet of the 19th century, is often characterized by his use of narrative verse, epic poetry, and a blend of classical and Western influences. His works are known for their rich imagery, intricate language, and emotional depth. The poetic style of Madhusudan Dutt, an eminent Bengali poet of the 19th century, holds a significant place in the realm of Indian literature. His unique style, influenced by both Western and Indian traditions, paved the way for a new era of poetry in Bengal. This essay delves into the historical context surrounding Dutt's literary career, highlights key figures who shaped his poetic style, examines the impact of his work, and presents a balanced analysis of both positive and negative aspects. Furthermore, it discusses potential future developments related to Dutt's poetic style. Madhusudan Dutt's lifetime (1824-1873) coincided with a period of significant societal, political, and cultural changes in India. This era witnessed the emergence of the Bengal Renaissance, a movement that sought to rejuvenate Indian society through rediscovering its rich cultural heritage and embracing new ideas from the West. Dutt's poetry, influenced by these developments, reflects the fusion of Eastern and Western literary traditions.

Michael Madhusudan Dutt's Bengali poetic style was greatly influenced by his mentor, Henry Louis Vivian Derozio, an eminent poet and educator. Derozio introduced Dutt to English literature and fostered his love for poetry, shaping his approach towards incorporating Western influences. Rabindranath Tagore, a towering figure in Indian literature and the first non-European Nobel Laureate in Literature, greatly admired Dutt's work. Tagore's appreciation of Dutt's poetic style likely influenced other writers and poets of the time, making Dutt a significant influence upon subsequent generations.

Madhusudan Dutt's contribution to Indian literature extends beyond his own poetry; he was an influential figure whose inventive style paved the way for future generations. By blending classical Indian and European literary traditions, Dutt crafted a unique poetic style that resonated with readers across cultural boundaries. His fusion of these diverse influences expanded the horizons of Bengali literature and inspired other writers to explore new avenues. Dutt is credited with introducing blank verse to Bengali poetry. This innovation, adopted from Shakespeare's works, led to a revolution in the Bengali literary landscape. Blank verse provided poets with a more flexible and natural tool for expression, enabling them to delve deeper into the complexities of human emotions. Dutt's creation of epic narratives, such as "Meghnad Bodh Kabya" (The Slaying of Meghnad), broke new ground in Bengali literature. Through vivid descriptions and powerful imagery, Dutt breathed new life into ancient Hindu epics, making them accessible to a wider audience. Dutt's mastery over both Bengali and English literature allowed him to express his ideas with beauty and nuance. His exploration of diverse themes, from mythological narratives to social issues, showcased his versatility and made his work relatable to readers from various backgrounds. Dutt's

command over rich and melodious language, combined with his vivid and evocative imagery, captivated readers. His ability to paint emotional landscapes with words left an indelible impression on the literary world.

Some critics argue that Dutt's work heavily imitated European writers, leading to a lack of originality in his poetic style. They claim that his Western influences overshadowed his own individuality as a poet and prevented him from fully exploring his potential. While Dutt's fusion of cultures impressed intellectuals and the educated elite, some critics maintain that his complex language and European allusions made his works inaccessible to the common masses. This limited the broader impact of his poetry. Ongoing research and critical analysis can shed light on the lesser-known aspects of Dutt's poetic style and reevaluate his contributions to literature. Scholars can delve deeper into the diverse influences that shaped his unique approach and unearth hidden gems within his body of work. Dutt's fusion of different poetic traditions serves as an enduring source of inspiration for contemporary poets seeking to break boundaries and create their own distinctive styles. Furthermore, Dutt's exploration and reinterpretation of mythology can offer a roadmap for contemporary writers aiming to infuse age-old tales with fresh perspectives.

Madhusudan Dutt's poetic style remains a beacon of literary excellence that continues to be celebrated. His ability to blend Eastern and Western traditions, introduction of blank verse, and exploration of epic narratives mark his prominent position in Indian literature. While criticisms regarding imitation and lack of accessibility persist, Dutt's influence on subsequent generations cannot be denied. By critically examining his work and its impact, we can appreciate the enduring legacy of Madhusudan Dutt and the significance of his poetic style in shaping the literary landscape of Bengal. Dutt's poetic style can be seen in his magnum opus, "Meghnad Badh Kavya," an epic poem based on the Ramayana, which was originally written in Bengali and later translated into English. In this work, Dutt combines traditional Indian poetic elements with Western literary techniques, creating a unique and evocative blend of the two traditions. Dutt's poetry often displays a mastery of mythological and historical narratives, with a tendency towards grand and dramatic storytelling. His use of elaborate metaphors, vivid descriptions, and rhythmic language adds a lyrical quality to his verses, making his works a testament to his skill as a poet. Madhusudan Dutt's poetic style can be described as a fusion of Eastern and Western literary traditions, marked by its grandeur, emotional intensity, and a keen sense of storytelling. His contribution to Bengali and Indian literature has cemented his place as one of the most influential poets of his time.

One of the defining features of Madhusudan Dutt's poetic style is his adeptness in utilizing traditional poetic forms. Influenced by classical Sanskrit literature, Dutt skillfully incorporates elements such as meter, rhyme, and imagery into his verses. His adherence to traditional forms, such as sonnets and ballads, demonstrates his deep respect for the literary heritage of his culture. For instance, in his famous work "Meghnad Badh Kavya," Dutt employs the traditional Bengali ballad form to narrate the story of the Ramayana from the perspective of the antagonist, Ravana. This fusion of traditional form with a fresh perspective showcases Dutt's ability to breathe new life into age-old narratives. While Dutt's work is rooted in tradition, he also displays a penchant for experimentation and innovation. He seamlessly incorporates Western literary techniques, such as the use of blank verse and dramatic monologues, into his poetry. This amalgamation of Eastern and Western influences creates a unique and captivating poetic style. In his poem "The Captive Ladie," Dutt employs blank verse to convey the inner turmoil of a female protagonist, breaking away from the traditional rhymed verse prevalent in Bengali poetry at the time. This departure from convention showcases Dutt's willingness to push the boundaries of poetic expression. Madhusudan Dutt's poetic style has had a profound impact on subsequent generations of poets. His ability to bridge the gap between tradition and innovation has inspired countless writers to experiment with form and content. Dutt's fusion of classical Indian literature with Western literary techniques laid the foundation for the development of modern Indian poetry.

His influence can be seen in the works of renowned poets such as Rabindranath Tagore and Kazi Nazrul Islam, who further expanded upon Dutt's experimentation with form and content.

Madhusudan Dutt's poetic style is a testament to his mastery of both traditional and innovative elements. His ability to seamlessly blend classical forms with experimental techniques has made him a revered figure in Indian literature. Dutt's influence on subsequent generations of poets cannot be overstated, as his work continues to inspire and shape the trajectory of modern Indian poetry. By embracing tradition while pushing the boundaries of poetic expression, Madhusudan Dutt has left an enduring legacy in the world of literature.

## References

- Dutt, Madhusudan. "Meghnad Badh Kavya." Translated by Michael Madhusudan Dutt, Oxford University Press, 2002.
- Dutt, Madhusudan. "The Captive Ladie." Translated by Michael Madhusudan Dutt, Oxford University Press, 2002.

## **The Significance of Ahlam Mosteghanemi's Writings in Contemporary Literature**

**Nur Islam Shaikh, Department Of Arabic, Nagar College**

Ahlem Mosteghanemi is an influential Algerian novelist whose works have left a significant impact on the literary world. This essay aims to explore the historical context surrounding her work, identify key figures who have influenced her, analyze her impact, and provide a well-reasoned analysis of her contributions. Both positive and negative aspects will be considered, along with potential future developments related to Ahlam Mosteghanemi. Ahlam Mosteghanemi was born on April 13, 1953, in the Algerian city of Tunis. She grew up during a period of great political and social change, as Algeria fought for its independence from French colonization. This historical context shaped her perspective, inspiring her later works. One influential figure in Mosteghanemi's life was her father, Mohammed Mosteghanemi, who was an Algerian political leader. His militant activism influenced Ahlam's writing and later provided her with an understanding of psychological trauma, which is a recurring theme in her novels. Another key figure in Mosteghanemi's life was her husband, Badreddine Khodja, who was also a prominent Algerian writer. Their shared passion for literature helped Ahlam develop her skills as a novelist and expand her horizons. Khodja's support provided the necessary encouragement for Mosteghanemi to pursue her writing career seriously. Ahlam Mosteghanemi has had a significant impact on the literary world, both in Algeria and internationally. Her unique style of writing, characterized by poetic language, complex characters, and poignant themes, has garnered her a dedicated readership.

Mosteghanemi's debut novel, "Memory in the Flesh," published in 1998, became a bestseller in the Arab world, making her the first female Algerian writer to achieve such immense success. This groundbreaking achievement paved the way for other North African female authors and shattered the gender barriers that had previously limited their literary recognition. Furthermore, Mosteghanemi's novels often explore themes of love, exile, war, and identity, capturing the collective consciousness of Algerians and resonating with readers globally. Her ability to depict the human condition in a relatable yet profound manner has won her critical acclaim and numerous literary awards. Mosteghanemi's impact is perhaps most evident in her ability to challenge traditional Algerian patriarchal norms through her writings. She gives voice to silenced and marginalized women, illustrating their struggles and desires in a patriarchal society. By doing so, she empowers women and forces society to confront its structures of oppression. On the other hand, Mosteghanemi's work has also faced criticism. Some argue that her novels rely too heavily on romanticized narratives and repetitive themes, lacking sufficient diversity in storytelling. While her focus on love and relationships is an essential aspect of her work, critics suggest that exploring alternative topics could strengthen her overall literary repertoire.

Looking to the future, the impact of Ahlam Mosteghanemi is likely to continue expanding. With the increasing global recognition of Arabic literature and the growing interest in diverse voices, Mosteghanemi's novels are poised to reach even broader audiences. This can pave the way for a deeper understanding of Algerian culture and contribute to the ongoing dialogue surrounding issues of identity, gender, and social change. Ahlam Mosteghanemi's contributions to the literary world cannot be understated. Despite facing

challenges and criticism, her unique perspective, poetic style, and exploration of themes have impacted readers on a profound level. Through her novels, Mosteghanemi has become a prominent figure in the Algerian literary scene, inspiring and empowering future generations of writers. As her novels continue to gain recognition and global reach, the legacy of Ahlam Mosteghanemi is sure to endure, enriching the literary landscape for years to come.

Ahlem Mosteghanemi, an Algerian author, has made significant contributions to contemporary literature through her thought-provoking and emotionally charged writings. Her works have garnered international acclaim, captivating readers with their unique narrative style and exploration of complex themes. This essay aims to argue that Mosteghanemi's writings are not only artistically compelling but also serve as a powerful medium for addressing social and cultural issues, making her an influential figure in the literary world. Mosteghanemi's writings exhibit a remarkable artistic excellence that sets her apart from other contemporary authors. Her novels, such as "Memory in the Flesh" and "The Bridges of Constantine," are characterized by a poetic and lyrical prose that captivates readers from the very first page. Mosteghanemi's ability to create vivid imagery and evoke deep emotions through her words is a testament to her mastery of the craft. One of the key strengths of Mosteghanemi's writings lies in her exploration of complex themes that resonate with readers on a universal level. Her works delve into topics such as love, loss, identity, and the human condition, offering profound insights into the intricacies of human emotions and relationships. Through her characters' experiences, Mosteghanemi sheds light on the struggles faced by individuals in a rapidly changing world, making her writings relatable and thought-provoking.

Mosteghanemi's writings also serve as a platform for addressing social and cultural issues prevalent in Algerian society. Her novels often tackle themes of patriarchy, gender inequality, and the impact of war on individuals and communities. By highlighting these issues, Mosteghanemi challenges societal norms and encourages readers to critically examine the prevailing structures that perpetuate injustice. Her works act as a catalyst for social change, inspiring readers to question and challenge the status quo. Mosteghanemi's writings have had a profound impact on contemporary literature, both in Algeria and beyond. Her unique narrative style and exploration of complex themes have influenced a new generation of writers, who draw inspiration from her works. Mosteghanemi's success has also paved the way for other Arab women writers, breaking barriers and challenging stereotypes in a male-dominated literary landscape. Her contributions to literature have been recognized through numerous awards and accolades, solidifying her position as a literary icon.

Ahlem Mosteghanemi's writings have left an indelible mark on contemporary literature. Through her artistic excellence, exploration of complex themes, and engagement with social and cultural issues, she has emerged as a powerful voice in the literary world. Mosteghanemi's ability to captivate readers and inspire critical thinking makes her an influential figure, whose works continue to resonate with audiences worldwide. As her writings continue to be celebrated and studied, it is evident that Ahlem Mosteghanemi's contributions to literature will endure for generations to come.

## **References**

- Mosteghanemi, Ahlem. *Memory in the Flesh*. Translated by Baria Ahmar, Bloomsbury Qatar Foundation Publishing, 2012.
- Mosteghanemi, Ahlem. *The Bridges of Constantine*. Translated by Raphael Cohen, Bloomsbury Qatar Foundation Publishing, 2013.

## **Woman and the Narratives of Resistance: Introspecting the Re-creation of *Draupadi* through Dasgupta**

**Suparna Roy**

**Assistant Professor**

**Global Institute of Management and Technology**

### **Abstract**

The ‘politics of silence’ around the body of women has always been an issue addressed with complexly designed patriarchal structures of negotiation. The concept of women when interrogated with an intersectional lens can be found as a pattern created through the process of a forceful ‘*bhava*’ (emotion or feelings), that they are meant to perform based on the culture and social structures. The interconnected yet distinguished lines of definition between femininity, feminine, feminism and feminist often provides an echoing vacuum of voice(s) that generates many questions to the inclusive structure of ‘what constitutes a woman’. The primordial view to the presentation of a woman in India draws the burden of endurance, love, self-sacrifice, servitude, silence and reproduction. These roles frame the identity of what a woman should be and the *Sati* women are generally held as the symbols and markers of such qualities. The cultural diplomacy of India has always re-structured the organization of women in relation to the mainstream male narration(s) in the form of ‘his-story’, making the story of ‘her’ absent and such absence as Simone De Beauvoir regards in her work *The Second Sex* is the creation of why males are left unmarked and women are marked. Henceforth, this paper shall attempt to re-situate Draupadi (a Sati character from Ancient India) within the political constructs of the definition of women by deconstructing the popular notions of what a woman should be, following post-structuralist feminist theory and an empirical and theoretical methodology.

**Keywords-** Draupadi, Sati, India, Cultural Politics, Feminism

### **Introduction**

Mahabharata is an ancient epic that narrates the war between the princely cousins Kauravas and Pandavas. It is a philosophical and devotional text that presents the politics of war and concepts of Dharma. It highlights the presence of Lord Krishna and his teachings of life in the most popular form- Srimad Bhagavad Gita. This epic has the background of a pious and religious settlement of ruling and administration. The epic is a validation of many queer relationships and identities such as Shikhandi, Brihannala, Ali and Mohini. In Srimad Bhagavat Gita, Krishna himself states Krishna’s identity as “nahi purusha hu, nahi hi stree hu, aur nahi napunsak.” This statement clearly shows that there existed a gender beyond male and female and that gender was not constricted to the binarized system of this or that. Also, the stories of Shikhandi shows the evidence of f-m transsexual body, while the concept of Mohini shows gay love; that Brihannala shows the concept of hijra, and Ali was forced to marry Arjuna by the ritual of pisacha vivaha; wherein, she loved the way Arjuna spent the night with her on bed and therefore this process of eroticism quite clearly recalls the presence of queer love. Thereby, Mahabharata not only justifies the existence of queer love and bodies but also validates their existence both theoretically and practically beyond myths.

Draupadi is a character set aside with features ‘progressive’ enough in terms of the time and culture she was placed into. Draupadi (daughter of King Drupad), also known as Panchali (Princess of Panchal Kingdom), Krishnā (for having immense dark complexion), Yajñaseni (for taking birth out of fire) is regarded as the main protagonist of the Epic Mahabharata. She was the only wife of the five brothers called as Pandavas, namely- Yudishtira, Arjuna, Bheema, Nakula, Sahadeva. Since childhood Draupadi has been a woman of her choice and voice unlike the then women folk. She was popular for her courage, stances and polyandrous marriage. She was the only woman with five

husbands. Draupadi subjected herself to an identity that is regarded as ‘pure and chaste’; an identity that the mainstream history always upheld to inspire and encourage any women. She was wife to her five husbands in an alternative way and was booned by Ved Vyasa that her virginity would get restored every time she goes to one of her husbands. She was one of the Panchkanyas (the purest five women in Indian history from Mahabharata and Ramayana), the archetype of female chastity. She was a Sati (a Sanskrit word meaning virtuous woman) not only for being virtuous but also for accompanying her husbands everywhere from kingdom to exile. She was framed by ‘his-story’ as the perfect wife and woman. The character of Draupadi had many interpretations, but what Draupadi felt under every circumstance is somewhat more interesting when and if put under an intersectional and queer feminist lens. So, the voice of Draupadi and her story of herself would now get analyzed with the help of Devakaruni and Dasgupta’s retelling of what Draupadi was and what she could be; of what a woman is and can be; of what a body is and is possible of becoming.

### **Dasgupta’s Draupadi- A Feminine Strength**

Dasgupta’s eclectically enriching work includes re-creation of Draupadi as a character that simply exhibits her emotional independency and complications through a voice that is femininely strong. A feminine power of purity and chastity has been recreated in Dasgupta’s work across the re-narration of Draupadi in terms of being a woman, a wife, a soul that challenged and deconstructed the popular beliefs and culture of people of an era regarding the ‘body’ of a woman, of purity. The character of Draupadi has been built with the essence of the Panchakanyas remarkably ‘marked’ for their devotion towards the cultural expectations done from a woman. But, as we unleash the narrative of Dasgupta, we see this cultural formation of Draupadi popular amongst the people gets a deviating perception of the entire character from the perspective of Draupadi. Here, we see the ‘her-story’ gets a chance to retell the history of Draupadi’s existence and the narrative frames her feminine power as not the strength of sacrifice and endurance, rather a demand for identity, positionality, respect and rights. Through the novel, the author tried voicing the pain and struggles of Draupadi not with swords, rather with words. The recreation of Draupadi broke the silence and verbal opacity that trended this character as the epitome of untouched chastity demarking her sexual pleasures and love for more than one body and soul simultaneously. Dasgupta begins the plot with the intervention of Krishna and Krishnna having a conversation of Draupadi’s possibility of being Sita in her previous birth, and to which Draupadi states and questions Krishna that “Can Ram ever do justice to Sita...I would never marry him if he comes looking for me again” (Dasgupta, 4). Krishna responds that “Sita is bigger than him” (Dasgupta, 4). The powerful representation of feminine voice gets clearly displayed as the sufferings and portrayal of Sita (as the purest form of existence such that the fire test failed to burn her) was never a justice to her identity and emotions. With the feminist introspection Dasgupta commences the story stating the voices of women that has been submerged by the interpretations of confused and patriarchal authors till date regarding the presentation of the Sati characters. Dasgupta’s enriching work details ad frame many small plots and stories within this larger character of Draupadi, but I shall only move to discuss few of the selected frames from the novel.

Dasgupta establishes the urge or desire or kama of Draupadi that has always been obliterated by the historians in their retelling of Draupadi’s character. Her desire for Arjun and the pleasures gets calmly displayed in the very prologue where the author introduces, “His arm circled gently around my neck, by back pressing against his bare chest. The love was addictive...” (Dasgupta, 8). Arjun and Draupadi shared a possible and intense love from amongst the five husbands she had. Their relationship attracted the charm and silence of love and desire in a playful yet stern pattern. Throughout the novel, Dasgupta charmingly used this relationship as the dominating fabric and the lubricant thread that binds the small plots together resulting to the climax. Through the character of Arjun the sexual desire of Draupadi has been wisely presented that deconstructs the “godly” association of Draupadi and humanizes her again to the generic substance of humanly body. The politics of their relationship is in all probability

the flexible horizon for the battle Maha-Bharat. However, the ruling essence of this relationship was how enchantingly Draupadi exhibited her desire(s) for Arjun and they made love numerous times, even in the tent house of the battlefield, as Dasgupta writes in the Prologue- "His arm circled gently around my neck, by back pressing against his bare chest. The love was addictive..." (Dasgupta, 8). Commencing from the very first chapter to the last, throughout we find multiple such lovely instances- "He leaned towards me, eyes drunk with desire even he remained aloof..." (Dasgupta, ch 1, 11-12). Draupadi's desire is a timely presentation of the required concepts of a freed body and acknowledging shows the power of acceptance- "Arjun kept seducing from a distance, arousing in my body the desires didn't know existed" (Dasgupta, ch 2, 13). Their love making has been presented with questions of 'security in love', trust in it, "Separating myself from Arjun's embrace, I lay down...with my body half covered, suggestively available, but purposefully distanced..." (Dasgupta, ch 7, 106). Dasgupta shows a healthy display of Draupadi's sexuality which still far has been overlooked or suppressed by the mainstream historians, wherein, Devakaruni mentions the same to certain extent but the light falls more on the power of Draupadi's body. The perfect play of Draupadi and Arjuna shows how sexuality of Draupadi existed as a humanized form and divine passion of the body, as Dasgupta writes, "...his eyes lingering on me as I Lay watching him lustfully ./Just when he trusted my lethargy, one of my legs went behind his knee...I will be back', mischievous woman" (Dasgupta, 120, ch 7). The use of the term mischievous dominates the pattern of the body's existence in terms of feelings and not just purity, and Dasgupta portrays that quite vibrantly. The historians till date in representing Draupadi only charmed her beauty and elevated her to the position of a goddess by dehumanizing her of the human qualities like kama, and even if presented it was always in the subtle light of 'wife-hood'. Contrary to such, Dasgupta vibrantly draws her love, passion, desire for the Pandavas and Karna too and represents Draupadi as a soul vibrant and pure in all forms; also, fluid in love yet firm as a feminine model and a fulfilling person.

#### Rtu - Draupadi and Vastraharan

Understanding the theoretical politics of Menstruation and the patterns of oppression surrounding Menstruation, Dasgupta perfectly associated the entire conceptually-created notion surrounding the body of a woman by disseminating the strategic link of menstrual power with the Vastraharan of Draupadi. Remarkably, the author applies Menstruation both as a subversive and dominating entity to enrich the feminine energy and identity in her work as when Draupadi was pulled by her hair to the courtroom, her saree was dripping of blood of menstruation and stains of blood marked her saree with spots. When Duryodhan threw her on the floor, in front of the publics, Dasgupta showcased how perfectly a patriarchally poisoned social structure could throw a human as a commodity for consumption amidst the public hunters-

My entire attire was wet with menstrual blood. Drops of red stained the floor, which I had been hauled across. Inhuman force pulled me to immodest, merciless display of womanhood, in cruel violation of privacy. I crumpled under that touch, feeling small and spent...I experienced the helplessness of a woman- hopelessly compromised before the wicked, wriggling to hide herself, ashamed of nature's bountiful giving to her, constrained to belief that her biggest strength was her worst weakness. Even if I discarded the body, will the soul ever forget this encroachment?" (Dasgupta, 176-77).

The narrative of Draupadi's Vastraharan was not an event as portrayed by numerous historians and mainstream frames, rather an action of power reflected by a phallogocentric society where the treatment of the 'body' was marked by objectification of certain perspectives towards that body. The pattern of marking bodies varied since time immemorial, for the phallus determined what sort and type of bodies must be considered for hiding/private and which were accepted to be public. The binarized gender structure played any such powerful battles amongst the nodes of men and women, and that is why phallus power portrayed the body with breasts and vagina must be a 'secret' and marked one as that is only for pleasure of the men. The action as taxonomized to be 'Vastraharan' means without clothes, but then why the unclothing of

a particular body faces such moral questions, for if the power never lied in unclothing, clothes would also become powerless; using and marking the ‘body of a woman’ with norms result in denudating the body with laws of shame. The consumption of power around the body of Draupadi banks the rage of political labeling of a body and lust for control. The actions when analyzed state the headwork of an organization in transacting its channel of lust on a particular form of body to disperse the branches of knowledge and power system with the ‘pain on nakedness of Draupadi.’ The narratives nominalised (act of naming) the power-play with the intervention of the divine to portray the superiority of a section, class, type, group; whilst the intervention of divine by Dasgupta showcases how the body is itself divine.

#### Draupadi’s Narrative of Subversion- Conclusion

Dasgupta in her narrative frames regards Yudishthir as a man of morality and hence also writes that he will be the one to hurt Draupadi the most, for “Idealists are difficult to navigate” (Dasgupta, 165). Draupadi in her intuition had this realization of something is going to kill her soon, and it was Dasgupta’s use of divine motif that exhibited how her genderless soul in form of Krishna guided her that she is going to die, not in terms of leaving her breathe, rather in terms of leaving her body as an object of the five, as an identity of the patriarchs, as the symbol of patronymic culture, and as a pativrata (submissive and faithful devotee of her husband). The use of menstruation stood as a power of feminist resistance to the phallogocentric cultural process. Since menstruation is regarded as an impurity, Dasgupta deliberately uses this to show how the power of menstrual purity allows the woman to strengthen and free herself from the clutches of a patriarchal society. Dasgupta enigmatically narrates the vastraharan of Draupadi as her menstruating body, her wet saree, and the comment of Dushasan, “Come beautiful maid, sit on my lap. Let me devour the beauty you are so proud of” (Dasgupta, 179) forms a triadic structure to subvert Draupadi’s insult and dehumanization. Dasgupta showcased her intuitive power as Draupadi remembers that Krishna said she was going to die, and she was indeed dying in terms of Draupadi, and during death, as Dasgupta writes, “...there is nothing to own. Not even the body, neither an identity” (Dasgupta, 181). It was during this when Draupadi called upon her inner power Krishna who said, “They want to see you pained and insulted Krishna...Defeat them by tiring them...a crime not yours...”(Dasgupta, 181). It was when this divine power called to rest and move free, separate the soul from the body and transforms the identity by instructing her to save Draupadi from the passion platter of Dushasan that equaled all women and described Draupadi, “how my fingers would pleasure a man and how my legs would part in similarity or contrast” (Dasgupta, 183). Lewd comments rise and creates a Draupadi that hyperreals her and the power of this women then gets instructed by intuition of Krishna to “Let go of all love...whatever you drop will get woven into an inexhaustible fabric and wrapped around you...you will never be bare” (Dasgupta, 186). The pulling of saree continued and as powered it was never-ending, for Draupadi had an ocean to disown, Draupadi deceased herself, that self which was a patronymic product of a phallogocentric order and emerged as a soul that was nominalised as “whore” by the courtroom of Duryodhan, but proved a divine soul that remained unbarred to the chastity beyond body and clothes. In an article titled “Understanding Draupadi as a paragon of gender and resistance” by Motswapong Pulane Elizabeth, she writes- Draupadi becomes an image of empowering women because of her strong will power, brilliant intellectuality and pride which mark her as a dignified woman different from other women like Sita who expressed softer feminine qualities. It must be noted that there are few women in Hindu mythology who were aggressive and who spoke their mind in a world of men.” (Elizabeth, 7).

Dasgupta in a way of garlanding the structure challenges the norms responsible for creating such patriarchal structure that humiliates a body for its sexual pleasure through objectification. The insult, pain, trauma, shame, all webs the disgrace of a woman from multiple positions; the sense of molestation and winning the body as circulated in a phallogocentric culture gets challenged through Draupadi’s never-ending saree, and to subvert this system, Draupadi remarkably performs her role as Dasgupta

narrates, "Virtues of feminine maintained beside him in endless folds. I was far from bare" (Dasgupta, 189). Draupadi's nonconformity to the social structure then and her resilience turned her as a feminist figure as Elizabeth writes, "Draupadi was one of those few. That is why she is considered by many as the first feminist of Indian mythology because of her resilience, and nonconformity to male dominated religious hierarchy (Ganguli, as cited in Elizabeth, 7).

### Acknowledgement

It would not have been possible to write this book without the help and the support of the kind people around me, to only some of whom it is possible to give particular mention here.

I would like to express my special thanks of gratitude to my teachers, mentor and friends, my family, particularly my brother. I am really grateful to my closed ones for their patience, enthusiasm, insightful comments, invaluable suggestions, practical advice and unceasing ideas which have helped me tremendously throughout my research and writing of this book. I also wish to express my deepest gratitude to all my seniors and colleagues for their unflagging love and support throughout my life.

For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

### References

- Dasgupta, Koral. *Draupadi*. Pan Macmillan, 22 Sept. 2022.
- Butler, Judith. *Gender Trouble: Feminism and the Subversion of Identity*. London, Routledge, 1990.
- De Beauvoir, Simone. *The Second Sex*. London, Vintage Classics, 1949.
- Motswapong, Pulane Elizabeth. "Understanding Draupadi as a Paragon of Gender and Resistance." *Stellenbosch Theological Journal*, vol. 3, no. 2, 2017, pp. 477–492, [www.scielo.org.za/scielo.php?script=sci\\_arttext&pid=S2413-94672017000200024](http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2413-94672017000200024), <https://doi.org/10.17570/stj.2017.v3n2.a22>.

## **From a Director to a Writer: A Reading of Ray's "A Long Time on the Little Road"**

Dr Ankur Konar  
Assistant Professor of English  
Sir Rashbehari Ghosh Mahavidyalaya

### **Abstract:**

The aim of this article is to situate the making of the film *Pather Panchali* (1955) vis-a-vis Satyajit Ray's self-reflexive statements in his essay "A Long Time on the Little Road", originally published in the famous film journal *Sight and Sound* (1957). A filmmaker of international repute Ray who in fact needs no introduction has two English books to his credit - *Our Films Their Films* (1976) and *Deep Focus: Reflections on Cinema* (2011). The essay "A Long Time on the Little Road", included as a book chapter in *Our Films Their Films* stands somewhat unique in the entire gamut of Ray-canonical because this article attempts to capture an apt articulation of Ray's journey of adaptation and appropriation of another Bengali maestro Bibhuti Bhushan Bandopadhyay's greatest Bengali narrative *Pather Panchali* (1929).

### **Main Article:**

"Film is the medium most integrated within and dependent upon the practices of global capital ... The intense presence of national/local identity in a global medium makes film a particularly suggestive, and a particularly complex, part of postcolonial studies." (Featherstone 97)

This article attempts to situate the making of the film *Pather Panchali* (1955) vis-a-vis Satyajit Ray's self-reflexive statements in his essay "A Long Time on the Little Road", originally published in the famous film journal *Sight and Sound* (1957). A filmmaker of international repute Ray who in fact needs no introduction has two English books to his credit - *Our Films Their Films* (1976) and *Deep Focus: Reflections on Cinema* (2011). The essay "A Long Time on the Little Road", included as a book chapter in *Our Films Their Films* stands somewhat unique in the entire gamut of Ray-canonical because this article attempts to capture an apt articulation of Ray's journey of adaptation and appropriation of another Bengali maestro Bibhuti Bhushan Bandopadhyay's greatest Bengali narrative *Pather Panchali* (1929), a novel that has been turned into 'India's most famous film ever' (Rajadhyaksha 3) by Ray's maverick articulation of various issues related to the Indian lifestyle. The film critic M.K. Raghavendra in his book *Seduced by the Familiar: Narration and Meaning in Indian Popular Cinema* (2008) rightly observes: "Only Satyajit Ray who had developed his own aesthetic without support from any institutionalised programme had represented Indian art cinema, and the industry declared him a cultural icon without jeopardizing its own position." (184) The holy nexus of the director and the film comes out as a cathartic literalization in "A Long Time on the Little Road", an essay that has been referred to by the eminent cultural critic Darius Cooper in the Introduction to his oft-cited book *The Cinema of Satyajit Ray: Between Tradition and Modernity* (2000).<sup>1</sup> Apart from Cooper many other acclaimed authors, both from the East and the West, have focused on the trajectories of Ray's critical engagement to *Pather Panchali*; Mention may be made of Bidyut Sarkar's *The World of Satyajit Ray* (1992), Suranjan Ganguly's *Satyajit Ray: In Search of the Modern* (2000), Andrew Robinson's *Satyajit Ray: The Inner Eye* (2004), Moinak Biswas' *Apu and After:*

*Re-Visiting Ray's Cinema* (2006) and John W. Hood's *Beyond the World of Apu: The Films of Satyajit Ray* (2008). Being tossed between the ideology of criticism and the criticism of ideology, these critical works focus on the pedagogical and the performative aspects of Pather Panchali, a cinema that has been hailed by many as the best representative one from the perspective of Indian context: "Pather Panchali is not necessarily the best Indian film ever made, nor is it even the best film made by Satyajit Ray, but it is arguably the most famous opus in Indian cinema and has, in its half century existence." (Hood 11) Apart from these existing corpus of criticism on Ray, this article attempts to credit the essay "A Long Time on the Little Road" from the perspective of Ray's catharsis and how he unpacks his intentio operis in filming the Bengali cult novel.

In the Introduction to Our Films Their Films Ray projects that the whole process of filming takes place in three broad stages – 'writing, filming and editing' (3) and he thinks that the everydaynesss of struggle that a film-maker is accosted with should have been textualised in the mode of writing: "In writing about my own work, I have realised why film makers have written so little about film making. So complex is the process, so intricate and elusive the triangular relationship between the maker, the machines and the human material that is deployed, that to describe even a single day's work in all its details of conception, collaboration and execution would call for abilities beyond most film makers." (10) Even in the Introduction to Our Films Their Films Ray emphasises on the typicality of Indian context that needs to be seriously considered during the time of filming: "What our cinema needs above everything else is a style, an idiom, a sort of iconography of cinema, which would be uniquely and recognisably Indian." (22) Ray's Our Films Their Films and Deep Focus: Reflections on Cinema concurrently have offered to his readers the proper corresponding amount of cinemas and discourses. Apart from "A Long Time on the Little Road", Our Films Their Films includes another very interesting article titled "Problems of a Bengali Filmmaker" which needs to be addressed for the proper understanding of the structure and stricture of film fraternity.<sup>2</sup>

In the Foreword to Deep Focus, Shyam Benegal portrays Ray as a 'game changer' for not only creating a milestone in Indian cinema but also for the fact that Ray, apart from being a film director, has an expertise to "create film narrative (xi)." By initiating the process of generating meaning, "A Long Time on the Little Road" projects Ray's consistent view on cinema. In the soft darkness of the auditorium the audience is lost in the world of fantasy and is hardly aware that in making a film the director is repeatedly hamstrunged by many problems. In this essay Ray deals with those problems which a filmmaker is generally accosted with as he thinks that cinema "combines the cold logic of science with the subtlest abstractions of the human imagination" (Our Films 19). Ray is however not making any generalised statements about film-making by using clichés and gargantuan words, but by using racy and immaculate style he is speaking of his personal experiences particularly his experiences on his debut while he started shooting Pather Panchali, a cinema that has been hailed as a 'landmark film' (Raghavendra xiv) in the history of Indian cinema. In his erudite book of essays on cinema titled Bishoy Chalachitra (1976), later translated as Speaking of Films (2005), Ray himself confesses that his awareness for the Indian ethos made the film critically acclaimed:<sup>4</sup> "I am convinced that it was the irresistible human appeal of Pather Panchali which made it work with all classes of audience in spite of the absence of conventional claptrap. I fully believed that I was making something new, even innovative, for India when I made Pather Panchali. In fact, the main incentive for me was provided by the insipid, hidebound, hybrid nature of Bengali films, which had discovered early on what the audience wanted, and stayed resolutely on the safe path." (62)

In the reminiscential essay "A Long Time on the Little Road" Ray minutely records the major problems he had to grapple with in the film-making: "Ten years of film making has taught me, above anything else, not to make a fetish of anything." (Our Films 56) The moment the director is on set, "problems come thick and fast". And when the movie-camera becomes operative the director is faced with an avalanche of questions and doubts: "Where to place the camera? High or low? Near or far? On the dolly or on the ground?" (Our Films 34) He is not sure whether to use the thirty five mm aperture or to

switch back the position and use the fifty. He vacillates between two options – if he gets too close to the action ‘the emotion of the scene spills over’; on the other hand if he gets too far ‘the thing becomes cold and remote’ (Our Films 34). The greatest problem is that to each problem the filmmaker has to find out a quick answer because any delay in making decision implies the shifting of time and would naturally destroy the light continuity.

The problem of sound is also being accosted with. Dialogue has to be ‘reduced to a minimum’ to save the cost of dubbing. Sometimes the director has to express the most necessary dialogues with a telling gesture. Thus, on a note of simplicity and authenticity, Raghavendra compares between Ray’s Pather Panchali along with Basu Chatterji’s Sara Akash (1969) and Mrinal Sen’s Bhuvan Shome (1969). Apart from the problems of light and sound, a director has to work under constraints of budget: “Cost, indeed, was a dominant factor at all times, influencing the very style of the film.” (Our Films 34) Equally important is the human problem where the filmmaker has to deal with the human weaknesses of actors and actresses involved in the film-making. Ray cites the examples of an eighty year old woman (the Auntie in Pather Panchali) who could not be forced to stand in hot midday sun and go through the same speech and same action in pursuit for perfection. Not only that, as the number of takes increases, the cost goes up and much more than the urge for perfection the director has to keep in mind the economical limitations. The eminent cultural critic Charles Tesson rightly praises the ‘strange accuracies’ (Das 59) of Ray in dealing with the active engagement during film-making. At times it puts so much stress that the filmmaker feels an urge for to give up. Besides, the film-making depends on many other extraneous circumstances. In the Introduction to Our Films Their Films Ray very pertinently observes: “Words need the backing of action, or there is no revolution. And the only action that counts is that which a film maker calls into play by snapping out his word of command in his own particular field of battle.” (15) Vagary of nature is also another obstacle in making a film which has generally been neglected even in the ‘surface interpretations of a film.<sup>5</sup> A filmmaker needs luck as much as they need the other things – talent, money, perseverance and so on. Actually it is a ‘preposterous balancing act’ (Our Films 35) between the desire for perfection and the limitations of money looming large upon the director’s mind. According to Ray who is “admittedly the most important Indian filmmaker” (Raghavendra xiv), cinema does not solely depend on the latent of the maker; it depends of the performances of the actors, the financier, the sound recordist as well as the technician. All these issues have been tackled in such a mastery of articulation by Ray that the eminent filmmaker Buddhadeb Dasgupta in the Foreword to Hood’s book Beyond the World of Apu: The Films of Satyajit Ray (2008) praises the cohesive and coherent outcome: “... the characters of a novel projected so faithfully on celluloid – just the way I had imagined them when I read the book.” (ix) Thus through an ‘ever-expanding network of textual relations’ (Sanders 3), Ray offers his own vignettes that validate the broader spectrum of Bibhuti Bhushan’s novel and it is needless to say that the cinematic adaptation became a remarkable one in the entire history of Indian cinema.<sup>6</sup> As Marie Seton in the definitive biography of the director titled Portrait of a Director: Satyajit Ray (2003) observes: “Pather Panchali was, however, so remarkable a film that temporary obstacles of indifference, ignorance or prejudice could not eliminate the certainty that such a contribution to film-making would ultimately find unequivocal appreciation.” (4) It will not be an exaggeration to say that through Pather Panchali, Ray “integrated Indian film-making practice with world cinema” (Raghavendra 62) and the cinema became the icon to represent the nation.<sup>7</sup>

Being essentially an ‘eye-opener’ for the director, film-making is a creative process’ and it has an obvious ‘inexorable rhythm’ (Our Films 35).<sup>8</sup> The experience of the rhythm provides a lot of excitement; yet no film maker can “deny that he has learned from past matters, or even present ones” (Our Films 55). Once the film is shot, there comes the problem of editing. The film maker has to rush down to the lab and wait with utter expectancy while the ‘ghostly negatives’ slowly emerge. Then the editor and the director spend a ‘gruelling couple of hours filled with aching suspense’ (Our Films 36) while the

montage goes on. At the end the director can watch the first print on moviwala and only then he can realise whether the scenes and shots have been alive or his entire effort has been wasted. The director has to judge the film with an element of detachment and objectivity and it is very difficult to be objective where the product is his own child. Thus Ray's strategic engagement on "how things will happen" rather than on "what will happen next" (Thomas 130) is manifestly textual in this essay.

In spite of all the gruelling problems that haunt the filmmaker, there are also certain rewards for a filmmaker who becomes successful in establishing a 'tacit agreement' (Das Gupta 59) between himself and audience. As he grapples with the medium he realises his own inefficiencies and understands that theorists cannot provide all the answers and his approach should always be rooted in the soil of his own country. As a filmmaker is "essentially a free artist, being responsible only to his own artistic conscience" (Our Films 38), the greatest reward is that after all the troubles, anxieties and expectations: "You can be sure of one thing: you are a better man for having made it." (Our Films 37) The eminent film critic Adoor Gopalakrishnan's consideration of Ray's *Pather Panchali* as "a beginning of the true Indian cinema – a beginning for all of us" (Das 57) bears the cultural seepage of the director's poetics of narratives where meanings are simply entangled with effects.<sup>9</sup> To conclude, Ray's "A Long Time on the Little Road" becomes a specific site of interrogation on film-making that is very rare among the writings on cinema across the nation and beyond.

#### **Notes:**

1. p. 3.
2. The chapter titled "Notes on Filming Bibhuti Bhushan" from *Deep Focus* may also be mentioned.
3. *The Apu Trilogy* is a book that contains Ray's vivid and minute screenplays of the three films and an erudite and engaging interview with Shyam Benegal.
4. Another Bengali book titled *Ekei Bole Shooting* (1979) by Ray may be worth mentioning here.
5. "Surface interpretations, unlike deep interpretations, refer to the way the intended audiences might understand a film." (Raghavendra 17)
6. Vis-a-vis the adaptation from literature to film one may go through the critical discourses proposed by the editor Deborah Cartmell in the book *A Companion to Literature, Film, and Adaptation* (2012) and the author Mary H. Snyder in the book *Analyzing Literature-to-Film Adaptations: A Novelist's Exploration and Guide* (2011).
7. There is an extensive discussion on Ray's *Pather Panchali* with full of critical insights in Raghavendra's book - pp 56-63.
8. "If this first shot pulled me up and taught me a lesson, it was also an eye-opener." (Our Films 51)
9. Even the digital world has attempted some serious critical discussion on Ray - <https://www.sahapedia.org/the-cinema-of-satyajit-ray-the-prison-house-of-humanism>. (Accessed on 02.12.2020)

#### **Works Cited**

- Cartmell, Deborah, ed. *A Companion to Literature, Film, and Adaptation*. Wiley-Blackwell, 2012.
- Cooper, Darius. *The Cinema of Satyajit Ray: Between Tradition and Modernity*. Cambridge University Press, 2000.
- Das, Shanti, ed. *Satyajit Ray: An Intimate Master*. Papyrus, Second Edition, 2004.
- Das Gupta, Chidananda. *The Painted Face*. Roli Books, 1991.
- Featherstone, Simon. *Postcolonial Cultures*. Edinburgh University Press, 2005.
- Hood, John W. *Beyond the World of Apu: The Films of Satyajit Ray*. Orient Longman, 2008.

- Ray, Satyajit. Deep Focus: Reflections on Cinema. Ed. Sandip Ray, Harper Collins, 2011.
- . Our Films Their Films. Orient Longman, 1976.
- . Speaking of Films. Trans. Gopa Majumdar, Penguin, 2005.
- . The Apu Trilogy. Seagull, 2020.
- Raghavendra, M.K. Seduced by the Familiar: Narration and Meaning in Indian Popular Cinema. Oxford University Press, 2008.
- . 50 Indian Film Classics. HarperCollins, 2009.
- Rajadhyaksha, Ashish. Indian Cinema: A Very Short Introduction. Oxford University Press, 2016.
- Sanders, Julie. Adaptation and Appropriation. Routledge, 2007.
- Seton, Marie. Portrait of a Director: Satyajit Ray. Penguin, 2003.
- Snyder, Mary H. Analyzing Literature-to-Film Adaptations: A Novelist's Exploration and Guide. Continuum, 2011.
- Thomas, Rosie. "Indian Cinema: Pleasures and Popularity." Screen 26 (3-4), 1985.

[Dr Ankur Konar is an Assistant Professor at the Department of English, Sir Rashbehari Ghosh Mahavidyalaya, the University of Burdwan. He has authored Cultural Poetics: Poetry, Society, Theory (2012), Drama, Dattani, Discourse (2013), Kolkata and Narrative Geographies (2019) and The Kolkata Football: History and Representation (2022) and has also edited Discourses on Indian Drama in English (2013) and Popular Narratives: Texts and Contexts (2020).]

## Utilizing Fuzzy Linguistic Hedges in Decision Making for Sentiment Classification

Swasti Sundar Mistry, Debrupa Pal  
Computer Application, Narula Institute of Technology, Kolkata, India  
[swastimistry1@gmail.com](mailto:swastimistry1@gmail.com)

**Abstract**—The aim of this study is to devise a model for precise sentiment classification of online product reviews by employing fuzzy linguistic hedges. This model, trained on a corpus of reviews, categorizes them into distinct sentiment classes like positive, neutral, and negative. The incorporation of fuzzy linguistic hedges enhances the accuracy of sentiment analysis by providing contextual nuances, facilitating finer discrimination between subtle variations in sentiment. The effectiveness of the proposed model is evaluated using a microblog electronics dataset, demonstrating its utility in decision-making processes

**Keywords**— *Fuzzy linguistic modifiers, text categorization, sentiment assessment, preprocessing component*

### I. Sentiment analysis

Sentiment analysis entails analysing text data to extract subjective information, typically to gauge the overall sentiment as positive, negative, or neutral. This involves employing natural language processing and machine learning methods to identify and extract subjective content from textual data. It finds applications in evaluating customer satisfaction, market sentiment, and brand perception by analysing reviews, conversations, and other forms of text to gain insights into people's feelings about a given topic.

Fuzzy-based sentiment analysis employs fuzzy logic to discern the sentiment expressed in a text. It utilizes fuzzy set theory to interpret the text's meaning and subsequently assigns a sentiment score. This method proves valuable in scenarios where conventional sentiment analysis struggles to accurately capture the sentiment, such as texts containing ambiguous terms. Furthermore, fuzzy-based sentiment analysis offers a more nuanced approach to understanding sentiment compared to traditional methods. Fuzzy logic, a variant of logic, permits the representation of degrees of truth rather than being confined to binary true or false values. Its mathematical expression is encapsulated through a set of fuzzy membership functions.

$$P = \{\mu(x) \mid x \in X\}$$

In this context, let  $X$  represent the universe of discourse, and denote  $\mu(x)$  as a real-valued function assigning a membership degree to each element  $x$  within  $X$ .

Hedges within sentiment analysis refer to linguistic expressions utilized to mitigate the intensity of a statement or opinion. These linguistic cues signal doubt, uncertainty, or a lack of firm commitment to a statement. Examples of hedges encompass terms like "maybe," "perhaps," "sort of," and "kind of," as well as phrases such as "I'm not sure," "It could be," and "I think." Hedges serve to either temper the sentiment of a statement, making it appear less forceful or opinionated, or amplify it, rendering it more assured or confident. They function to adjust the sentiment conveyed in a statement, catering to the reader's receptivity.

### II. LITERATURE SURVEY

Numerous research studies have investigated the role of linguistic hedges in sentiment analysis. Among the pioneering works is the study by Wallis and Dunne (1994), which delved into hedges in natural language processing. Their findings revealed that leveraging hedges can enhance the precision of sentiment analysis by mitigating the uncertainty associated with the sentiment conveyed in a text. In their study, [1] introduced an unsupervised learning algorithm that determines the semantic orientation of sentiment terms within a dataset by employing Pointwise Mutual Information and information

retrieval algorithms. Their approach achieves an accuracy rate of 74%. [2] introduced an aspect-based sentiment analysis technique utilizing sentiwordnet to train a Support Vector Machine classifier. Additionally, they employed a term weighting method combining sentiwordnet with conventional aspect-based weighting techniques such as Term Frequency and Inverse Document Frequency. Their approach yielded an impressive overall accuracy of 87.15%. [3] introduced a method for aspect-based sentiment classification, comprising two stages: pre-processing and categorization. In the classification phase, a Naive Bayes classifier was employed for training, while fuzzy logic was utilized for evaluating sentences in the test set. To enhance product description clarity, classification was enhanced, integrating fuzzy linguistic hedges into both sentiment classification and term weighing tasks. The proposed approach achieved commendable accuracy in both binary and fine-grained sentiment classifications of user reviews. [4] introduced a methodology for customer attitude classification utilizing computational intelligence techniques, such as fuzzy c-means clustering. The user-friendly interface significantly engaged the target audience, with potential enhancements focusing on privacy, accuracy, and reliability. [5] developed a supervised fuzzy inference system incorporating hedge functions in the presence of adverbial modifiers. This method was utilized to scrutinize the n-grams of adverbial modifiers, where linguistic hedges were employed to discern opinions, complemented by fuzzy criteria to amplify opinion influence. The system generated a spectrum of degree values to articulate ambiguous and imprecise information, yielding promising results. The previous methodologies overlooked the incorporation of slang vocabulary alongside sentiment and hedge scoring, highlighting the necessity for a more effective model capable of accommodating slang expressions, sentiments, and hedges concurrently. To address this gap, a sophisticated framework leveraging fuzzy-based classification techniques is required, enabling a nuanced analysis that captures the subtleties of language usage. By integrating slang detection seamlessly with sentiment analysis and hedge identification, this comprehensive approach promises a fine-grained analysis of textual data, thereby enhancing the accuracy and depth of insights derived from the analysis. Text preprocessing stands as a pivotal phase within natural language processing (NLP), encompassing the cleaning, transforming, and normalization of raw text data to ready it for analysis [6-7]. Within NLP, an array of techniques is employed for text preprocessing, several of which are delineated in Table 1.

### **III. PROPOSED METHODOLOGY**

Data collection and pre-processing is the first step. Sentiment analysis has been conducted on diverse electronic datasets comprising online microblog reviews obtained through web crawlers. However, these collected reviews contain extraneous text that hinders effective knowledge extraction. To address this issue, preprocessing techniques must be applied to the selected datasets. These techniques aim to refine the data by eliminating irrelevant or noisy text, thereby facilitating more accurate sentiment analysis and enabling the extraction of valuable insights from the reviews.

TABLE I. TEXT PRE PROCESSING TECHNIQUE

<b>Name of the mechanism</b>	<b>Working Technique</b>	<b>Example</b>
Lexical Analysis	Tokenization is the act of dividing a sentence into smaller components, such as words or subwords, aiding in	After tokenization, the sentence will be segmented into

<b>Name of the mechanism</b>	<b>Working Technique</b>	<b>Example</b>
	the creation of structured data suitable for subsequent analysis.	distinct tokens, such as ["I", "love", "eating", "pizza", "."].
Linguistic categorization by assigning grammatical labels	Part-of-speech tagging involves annotating each word in a text corpus with its appropriate grammatical category, such as noun, verb, adjective, adverb, pronoun, preposition, conjunction, interjection, or other relevant parts of speech.	After tagging, the words will be represented as [('I', 'PRP'), ('love', 'VBP'), ('to', 'TO'), ('go', 'VB'), ('running', 'VBG'), ('in', 'IN'), ('the', 'DT'), ('park', 'NN'), ('.', '.')], indicating their respective grammatical categories.
Elimination of stop words	Stop words, such as "the," "is," "a," "an," etc., lack significant semantic meaning and are typically excluded from text data to enhance the accuracy of analysis.	After removing stop words, the sentence transforms to: "cat sitting mat."
Root word normalization	Stemming and lemmatization are methods employed to transform a word into its base or root form, known as its lemma. Stemming entails removing suffixes from the word to derive its root, while lemmatization involves referencing a dictionary to determine the base form of the word.	When subjected to stemming, both "running" and "ran" are reduced to "run". In contrast, through lemmatization, "running" transforms to "run" while "ran" remains unchanged as "ran".
Lowercasing	Lowercasing text aids in reducing the diversity of unique words within the data, facilitating simplified analysis processes.	Upon converting to lowercase, the sentence reads: "the quick brown fox jumps over the lazy dog."
Eliminating Punctuation	Punctuation marks, such as commas, periods, and exclamation marks, can be excluded from the text data as they don't contribute to the analysis.	After removing punctuation, the sentence becomes: "I am feeling happy."

In summary, employing these techniques facilitates the cleansing and standardization of text data, rendering it well-suited for subsequent natural language processing (NLP) tasks. The text data cleaning in this work is accomplished using the NLTK tool in Python [8].

Pre-processed text has been given as an input for text classification using lexicons. This approach employs trigram-based feature selection, incorporating sentiment words, slang terms, and linguistic hedges. Scores are assigned based on the frequency of these words using SentiWordNet (SWN). A curated lexicon of slang terms is utilized to assign scores to these terms. By analyzing the occurrence of these lexicons, words are classified into subjective (opinionated) and objective (non-opinionated) categories. Hedges, also known as modifiers, can either augment sentiment values (enhancers) or diminish them (reducers). Each linguistic hedge, denoted as  $H$ , acts as a unary operator, represented by  $h$  within the interval  $[0,1]$ . The sentence's total score is determined by summing the scores of sentiment words, slang terms, and linguistic hedges. This cumulative score serves as input for the fuzzy-based classification system.

#### **IV. Fuzzy based classification**

It fine-tunes the classification of user reviews using fuzzy logic, which defines linguistic variables by establishing a range of values represented by natural language terms or labels [9-11]. These labels are defined through membership functions, allocating a degree of membership to each value within the range for each label. Membership values of fuzzy sets are defined within the range of 0 to 1. Fuzzy membership functions, in conjunction with fuzzy if-then rules, are employed to assess the sentiment of text. This involves evaluating the degree of membership of linguistic variables to various sentiment categories and integrating the outcomes to ascertain the overall sentiment. In the proposed system, the scores of hedges and slang words are combined and utilized as input for the fuzzy-based classification system. However, these input values may have varying ranges. To ensure uniformity across these ranges, normalization is necessary. Given the high values of each word, min-max normalization is employed to normalize the scores.

#### **V. Min Max Normalization**

Fuzzy-based sentiment analysis, it's common to employ min-max normalization as a technique to standardize data, enabling easier comparison and combination. Fuzzy logic systems utilize linguistic variables and fuzzy sets to denote the degree of membership of a sentence to a specific sentiment category, like "positive" or "negative." These linguistic variables often have distinct scales and ranges. For instance, "battery life" may span from 0 to 100, while "price" might range from 0 to 1000. Without normalization, comparison and combination of these variables become challenging due to their differing scales[12-13].

Min-max normalization addresses this issue by transforming the values of linguistic variables onto a uniform scale, typically between 0 and 1. This is achieved by subtracting the minimum value from each data point and then dividing by the range (i.e., the maximum value minus the minimum value). This normalization process ensures that all linguistic variables share the same range and scale, facilitating their comparison and combination using fuzzy logic operations.

$$Y_{\text{normalized}} = (Y - Y_{\text{min}}) / (Y_{\text{max}} - Y_{\text{min}})$$

where:

$Y$  is the original value of the data point

$Y_{\text{min}}$  is the minimum value of the data points in the dataset

$Y_{\text{max}}$  is the maximum value of the data points in the dataset

$Y_{\text{normalized}}$  is the normalized value of the data point, which ranges between  $[0,1]$

#### **Fuzzifier**

Fuzzification refers to the process of translating a precise, or crisp, input value into a degree of membership within one or more fuzzy sets. In the context of fuzzy sentiment analysis, fuzzification is utilized to assign input linguistic variables—such as words or

phrases conveying sentiment—to degrees of membership within fuzzy sets representing sentiment categories, such as positive, neutral, and negative.

In the Proposed System, fuzzification of input linguistic variables involves initially mapping the input value to the suitable fuzzy set via the corresponding membership function. The system employs three linguistic variables: Design, User Interface, and Camera Quality. The word set for the linguistic variable "Design" is specified as {Stylish, Modern, Outdated}. For "User Interface," it's {Intuitive, User-friendly, Confusing}. Lastly, for "Camera Quality," the set consists of {Excellent, Blurry, Bad}.

### **Fuzzy Rules**

In a fuzzy logic system, rules are commonly formulated as "if-then" statements. In these statements, the "if" part outlines the conditions necessary for the rule's application, while the "then" part specifies the consequent action or output.

Fuzzy logic serves as a mathematical framework adept at managing imprecision and uncertainty in data. It achieves this by allowing values to be represented as fuzzy sets, which can exhibit degrees of membership ranging from 0 to 1. "If-then" rules within fuzzy logic systems leverage these fuzzy sets to delineate relationships between inputs and outputs. Through fuzzy reasoning, decisions are made based on these rules, enabling handling of uncertain or imprecise data effectively.

The proposed system utilizes the following rules to aid in decision-making for the benefit of both customers and business organizations:

- If the Design is stylish, User Interface is intuitive, and Camera Quality is excellent, then the customer rating is highly recommended.
- If the Design is stylish, User Interface is user-friendly, and Camera Quality is excellent, then the customer rating is recommended.
- If the Design is modern, User Interface is user-friendly, and Camera Quality is blurry, then the customer rating is Average.
- If the Design is outdated, User Interface is user-friendly, and Camera Quality is blurry, then the customer rating is Satisfactory.
- If the Design is outdated, User Interface is confusing, and Camera Quality is bad, then the customer rating is poor.

### **Defuzzifier**

Defuzzification in fuzzy logic involves converting a fuzzy output into a precise, numerical value suitable for decision-making. This process is essential because fuzzy logic operations often yield fuzzy outputs, represented as fuzzy sets with varying degrees of membership.

One prevalent defuzzification technique is the centroid method, which determines the center of gravity of the fuzzy output set. This method calculates the weighted average of the values within the fuzzy set, with the degrees of membership serving as the weights.

The formula for centroid defuzzification is:

$$\text{Output} = \frac{\sum(x * \mu(x))}{\sum(\mu(x))}$$

In this formula,  $\sum(x)$  represents the value in the fuzzy set,  $\sum(\mu(x))$  is the degree of membership of  $\sum(x)$ , and the summation is performed over all values in the fuzzy set.

For instance, consider a fuzzy sentiment analysis system assessing customer reviews of a mobile phone. Let's assume the fuzzy set representing the sentiment "positive" has a triangular membership function with parameters (0.4, 0.7, 1.0). At its peak value ( $x=0.7$ ), the degree of membership is 0.9, indicating high certainty of a positive sentiment.

Using the centroid method to defuzzify the output:

$$\text{Output} = \frac{(0.4 * 0 + 0.7 * 0.9 + 1.0 * 1)}{(0 + 0.9 + 1)}$$

The resulting value of 0.79 represents the degree of positivity of the reviews on a scale from 0 to 1. This precise output facilitates decision-making tasks, such as ranking the mobile phone based on sentiment analysis among other products.

### **CONCLUSION**

Before The proposed fuzzy-based model conducts detailed sentiment analysis of online product reviews by incorporating fuzzy linguistic hedges. It outlines fuzzy-based rules to effectively classify user sentiments. The methodological diagram illustrates the system's

crisp inputs, membership functions, linguistic variables, and output variables. This model aims to assist internet users in decision-making processes. By integrating sentiment analysis, linguistic hedges, and slang words using fuzzy-based classification, the model offers a straightforward yet effective approach. Despite its simplicity, the proposed model demonstrates superior performance.

## References

- [1] P. D. Turney, "Thumbs up or thumbs down?," in *Proceedings of the 40th Annual Meeting on Association for Computational Linguistics - ACL '02*, 2001. Accessed: Feb. 08, 2024. [Online]. Available: <http://dx.doi.org/10.3115/1073083.1073153>
- [2] Y. Dang, Y. Zhang, and H. Chen, "A Lexicon-Enhanced Method for Sentiment Classification: An Experiment on Online Product Reviews," *IEEE Intelligent Systems*, vol. 25, no. 4, pp. 46–53, Jul. 2010, doi: 10.1109/mis.2009.105.
- [3] G. Anuradha and D. Joel Varma, "Fuzzy based Summarization of Product Reviews for Better Analysis," *Indian Journal of Science and Technology*, vol. 9, no. 31, Aug. 2016, doi: 10.17485/ijst/2016/v9i31/98481.
- [4] Reshma V and A. John, "Aspect based summarization of reviews using naïve Bayesian classifier and fuzzy logic," in *2015 International Conference on Control Communication & Computing India (ICCC)*, Nov. 2015. Accessed: Feb. 08, 2024. [Online]. Available: <http://dx.doi.org/10.1109/iccc.2015.7432970>
- [5] R. Katarya and O. P. Verma, "An effective web page recommender system with fuzzy c-mean clustering," *Multimedia Tools and Applications*, vol. 76, no. 20, pp. 21481–21496, Oct. 2016, doi: 10.1007/s11042-016-4078-7.
- [6] Shengdong Zhang, Chunxiang Zhu, J. K. O. Sin, and P. K. T. Mok, "A novel ultrathin elevated channel low-temperature poly-Si TFT," *IEEE Electron Device Letters*, vol. 20, no. 11, pp. 569–571, Nov. 1999, doi: 10.1109/55.798046.
- [7] M. Wegmuller *et al.*, "Analysis of the polarization evolution in a ribbon cable using high-resolution coherent OFDR," *IEEE Photonics Technology Letters*, vol. 13, no. 2, pp. 145–147, 2001, doi: 10.1109/68.910516.
- [8] V. K. Tripathi, "Interconnect modeling for high speed digital and RF circuits and systems," in *Proceedings of 1997 Asia-Pacific Microwave Conference*. Accessed: Feb. 08, 2024. [Online]. Available: <http://dx.doi.org/10.1109/apmc.1997.656392>
- [9] Dr. P. Bastin thiagaraj, Dr..A. Aloysius, "Data Reduction Based Truth Discovery Analysis by Resolving the Conflicts in Big Data using Continuous Data", *International Journal for Innovative Engineering and Management Research*, volume 12, issue 02, ISSN 2456-5083, Feb 2023.
- [10] B. N. Supriya, V. Kallimani, S. Prakash, and C. B. Akki, "Twitter Sentiment Analysis Using Binary Classification Technique," in *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, Cham: Springer International Publishing, 2016, pp. 391–396. Accessed: Feb. 08, 2024. [Online]. Available: [http://dx.doi.org/10.1007/978-3-319-46909-6\\_36](http://dx.doi.org/10.1007/978-3-319-46909-6_36)
- [11] A. Angelpreethi and S. B. R. Kumar, "An Enhanced Architecture for Feature Based Opinion Mining from Product Reviews," in *2017 World Congress on Computing and Communication Technologies (WCCCT)*, Feb. 2017. Accessed: Feb. 08, 2024. [Online]. Available: <http://dx.doi.org/10.1109/wccct.2016.30>
- [12] [12]"IEEE Standard for Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications", doi: 10.1109/ieeeestd.1997.85951.
- [13] J. Padhye, V. Firoiu, and D. Towsley, "A stochastic model of TCP Reno congestion avoidance and control," Univ. of Massachusetts, Amherst, MA, CMPSCI Tech. Rep. 99-02, 1999.

تأثير اللغة العربية والأعمال الأدبية في اللغات والأدب الهندي

Influences of Arabic language and literary works on Indian languages and Literature

Rakibul Islam

State Aided College Teacher ,Nagar College

[kaffrakibulislam@gmail.com](mailto:kaffrakibulislam@gmail.com)

### **Abstract**

In this Paper an attempt has taken to throw light on the reciprocal relationship between Arabic and Indian languages and its literature. Arabic language literary works have significantly influenced Indian languages, particularly in the fields of literature, culture and language. The entrance of Arabs to the Indian subcontinent led to the introduction of Arabic scripts, vocabulary, and poetic forms into various Indian languages. Many Indian languages, such as Urdu, Hindi, Kannada and Bengali, have borrowed words poetic meters and storytelling techniques from Arabic literature. This influence can be seen in the use of Persian-Arabic loanwords, the development of Urdu poetry and ghazals, and the adaptation of literary themes and motifs. Additionally, the translation of Arabic works, especially in fields like science, philosophy and medicine, contributed to the enrichment of Indian intellectual traditions. Arabic literary works have had a notable influence on various Indian languages and literary traditions.

#### **❖ Introduction:**

The entrance of the Arabs of to the Indian subcontinent occurred primarily through trade, conquest, and missionary activities. Arab traders established early connections with the Western coast of India, bringing with them not only goods but also their cultural and religious practices. Over time, the teachings of Islam began to spread through interactions between merchants and local communities. Conquests by Muslim rulers also played a significant role in spreading of Islam. Starting in the 7th century, Arab armies led by Muhammad bin Qasim and later Ghaznavids and Ghurids, invaded parts of present-day Pakistan and Northern India, introducing Islam to new regions. Subsequent rulers like the Delhi Sultanate and the Mughal Empire furthered the influence of Islam across the subcontinent. Missionary efforts also played a role, as Sufi saints and scholars traveled to India to preach and convert. Their approach, emphasizing spirituality and mysticism, resonated with local traditions, facilitating the acceptance of Islam among various communities. Over time, this blend of cultural, religious, and linguistic interactions resulted in the development of unique syncretic cultures, languages (such as Urdu), and artistic expressions that combined elements of both Islamic and Indian traditions.

#### **❖ Arabic Script and its impact:**

Arabic script is a writing system used for various languages across the Middle East, North Africa, and other regions. It has also had a significant impact on writing systems in other languages, including those in the Indian subcontinent. The Arabic script is written from right to left and consists of a combination of letters and diacritical marks, which indicate vowel sounds and other phonetic distinctions. The script is cursive, meaning that many letters are connected in a flowing manner when written. In the Indian subcontinent, the Arabic script has been used for languages like Urdu, Persian, and Sindhi. Urdu, for example, uses an extended version of the Arabic script with additional characters to accommodate sounds specific to the language. This script has been a unifying factor for diverse linguistic communities in the region, allowing them to

communicate across different languages that share a common script. Arabic script's influence has also extended beyond language and writing. It has been used for calligraphy, religious manuscripts, architectural inscriptions, and various forms of art, reflecting the aesthetic and cultural significance of the script in the Islamic world and beyond. The influence of Arabic script on Indian languages is primarily seen in languages that have adopted or adapted the script for writing purposes. Here are a few key points of influence:

- **Urdu:** Urdu is one of the most prominent examples of Arabic script influence in India. It developed as a fusion of Persian, Arabic, and local Indian languages. The Arabic script was adapted to accommodate the phonetic needs of Urdu, resulting in a script that allows for the representation of sounds unique to the language.
- **Persian:** While Persian itself does not originate from the Indian subcontinent, it has been historically used as a court language and enjoyed significant influence on Indian languages and culture. The Persian script, which is closely related to the Arabic script, was used for writing Persian poetry and official documents.
- **Sindhi:** Sindhi is another language in India that has adopted the Arabic script. It uses a modified form of the script to represent its sounds, and this has allowed for the preservation of Sindhi literature and culture.
- **Kashmiri:** The Kashmiri language has also used a variant of the Arabic script for writing. The script has been adapted to suit the phonetic needs of Kashmiri.
- **Malayalam:** While not as widespread, the Arabic script has had some influence on the writing of the Malayalam language in the state of Kerala. The script was used for writing religious texts among the Muslim community.

These examples highlight how the Arabic script, adapted to suit the phonetic requirements of different languages, has played a significant role in shaping the linguistic landscape of the Indian subcontinent and facilitating communication across diverse linguistic communities.

❖ ***Influences of Arabic vocabulary on Indian languages and literature:***

The influence of Arabic vocabulary on Indian languages is a result of cultural, religious, and linguistic interactions between the Arabic-speaking world and the Indian subcontinent. Here are a few ways in which Arabic vocabulary has impacted Indian languages. Arabic words have had a significant influence on various Indian languages due to historical, cultural, and linguistic interactions. Many Indian languages have incorporated Arabic loanwords, enriching their vocabulary and reflecting the historical ties between the two regions.

**Religious Terminology:** Arabic vocabulary has deeply influenced religious terminology in Indian languages. Islamic terms, names of prophets, religious concepts, and terms related to rituals have been adopted into languages like Urdu, Hindi, Bengali, and others due to the spread of Islam in the region.

**Science and Medicine:** Arabic has a rich tradition in science, medicine, and mathematics. Many technical terms in these fields, as well as the names of stars, plants, and minerals, were introduced into Indian languages through Arabic texts and translations.

**Trade and Commerce:** With the Arab traders' interactions in India, words related to trade, commerce, and economy found their way into Indian languages. This includes terms related to currency, weights, and measures.

**Law and Governance:** Administrative terms, legal concepts, and titles were borrowed from Arabic into Indian languages due to the influence of Muslim rulers who used Arabic-based terminology for governance.

**Culinary Terms:** Arabic vocabulary has also influenced culinary terminology in Indian languages. Names of foods, spices, and dishes have been adopted due to the culinary exchanges that took place.

**Literary and Academic Vocabulary:** Arabic's influence on academic disciplines, literature, and philosophy led to the adoption of numerous technical terms and philosophical concepts into Indian languages.

**Place Names:** Some place names in India, especially in regions with a historical Arab presence, have Arabic origins or influence.

**Food and Cuisine:** Words related to food, spices, and culinary practices, like "qahwa" (coffee), "sukkar" (sugar), and "za'atar" (a herb mixture), have been adopted.

**Clothing and Fashion:** Terms for clothing and attire, such as "jubba" (robe) and "tarbush" (fez), have become part of Indian languages.

**Art and Architecture:** Arabic terms for architectural elements, like "minar" (tower) and "qibla" (direction of prayer), are commonly used.

**Geographical Terms:** Some place names, especially those in regions with a historical Arab presence, have Arabic origins. These examples highlight the widespread influence of Arabic on Indian languages, showcasing the cultural and linguistic connections between the two regions over centuries.

**Numerals and Mathematics:** The Indian numeral system, including the concept of zero, was transmitted to the West through Arabic translations of Indian works. These numerals, known as Arabic numerals, are now commonly used globally.

**Literary and Academic Vocabulary:** Arabic contributions to philosophy, science, and literature have enriched Indian languages. Terms related to logic, philosophy, astronomy, and medicine were introduced through Arabic translations of Greek, Persian, and Indian works.

**Poetry and Prosody:** Arabic poetic forms, meters, and stylistic techniques influenced Indian poetry. Concepts like "ghazal," "qasida," and "rubaiyat" were adopted into Indian literary traditions.

**Legal and Administrative Terms:** Arabic terms related to governance, administration, and law made their way into Indian languages due to the influence of Muslim rulers and legal systems.

**Geographical and Cultural Terms:** Some place names and cultural terms in Indian languages have Arabic origins, particularly in regions with historical Arab connections.

**Culinary Vocabulary:** Words related to food, spices, and culinary practices were introduced to Indian languages through trade and cultural exchange.

**Science and Medicine:** Arabic contributions to mathematics, astronomy, medicine, and other fields introduced technical terminology that became part of Indian languages.

**Art and Architecture:** Arabic terms related to architecture, calligraphy, and art were absorbed into Indian languages.

**Philosophical and Intellectual Vocabulary:** Arabic expressions related to philosophy, logic, and intellectual discourse have influenced Indian languages, especially in scholarly and philosophical writings.

The depth and extent of Arabic vocabulary influence vary across different Indian languages, regions, and historical periods. These influences collectively showcase the interconnectedness of cultures and languages in the Indian subcontinent.

#### ❖ **Impression of Arabic Poetic Forms on Indian poetry:**

Arabic poetic forms have left a notable impact on Indian languages, particularly in the realm of poetry and literary expression. Here's how Arabic poetic forms have influenced Indian languages:

**Ghazal (غزل)** : The ghazal, a poetic form originally from Arabic poetry, was introduced to Indian languages through the influence of Persian and Arabic literature. Urdu, in particular, embraced the ghazal form, becoming one of its primary vehicles of expression. The ghazal's structure, with rhyming couplets and a recurring rhyme scheme, influenced the way emotions, love, and themes of longing were articulated in Urdu and other Indian languages./

**Qasida (قصيدة)**: The qasida, a long Arabic poem often used to praise rulers or patrons, was adapted into Persian and subsequently into Indian languages like Urdu and Punjabi. These qasidas were used to eulogize kings, nobles, and patrons, and the form was employed to showcase linguistic virtuosity and express admiration.

**Rubaiyat (رباعيّة/Quatrain)**: The rubaiyat, a four-line stanza form, made its way into Persian and Arabic poetry from earlier Indian traditions. These quatrains, with their succinctness and ability to convey profound thoughts, were embraced by Persian and later Indian poets, enriching the poetic landscape of various languages.

**Marsiya (مرثية) and Noha**: These are elegiac forms of poetry used to commemorate the martyrdom of Imam Hussein, a significant figure in Islamic history. These forms originated in Arabic and were adopted and adapted in Urdu, Persian, and other Indian languages, becoming essential to the Muharram observances.

**Nazm (نجم)**: While not a direct import from Arabic, the concept of "nazm," which refers to the arrangement and structure of a poem, has parallels in Arabic and Persian poetry. Urdu poets like Faiz Ahmed Faiz and Allama Iqbal drew from these influences while crafting their nazms.

Overall, the influence of Arabic poetic forms has resulted in a fusion of cultural and literary elements in Indian languages. The adoption and adaptation of these forms have allowed for the exploration of a wide range of emotions, themes, and artistic techniques in the poetry of the Indian subcontinent.

These linguistic influences have left a lasting impact on Indian languages, contributing to their vocabulary, expressions, and cultural expressions. They showcase the interconnectedness of cultures and the way languages evolve through interactions over time.

#### ❖ **Influences of Arabic storytelling techniques on Indian literature**

Arabic storytelling techniques have had a significant influence on Indian literature, contributing to the development of narrative styles, structure, and themes in various genres. The exchange of literary ideas between the Arab world and the Indian subcontinent facilitated the incorporation of Arabic storytelling techniques into Indian literary traditions. Here are some ways in which Arabic storytelling techniques have influenced Indian literature:

**Narrative Structure**: Arabic storytelling's use of nested narratives, where characters within the story tell their own stories, influenced Indian literary narratives. This technique adds complexity and depth to the storytelling, as seen in works like "Panchatantra" and "Katha Sarit Sagara."

**Imagery and Metaphor**: Arabic storytelling's vivid imagery and metaphorical language have inspired Indian writers to use similar techniques to evoke emotions and sensory experiences. This is evident in the works of Indian poets and novelists.

**Moral Lessons and Allegory:** Arabic storytelling's inclusion of moral lessons and allegorical elements influenced Indian literature's exploration of ethical values through narrative. Fables in Indian literature often carry moral messages similar to those found in Arabic folktales.

**In Media Res:** The Arabic technique of starting a story "in media res," immediately immersing readers into the action, has been adopted in Indian narratives to create engaging openings.

**Cultural Context and Descriptions:** Arabic storytelling's attention to cultural context, landscape, and setting has influenced Indian literature's emphasis on describing social customs, regional traits, and environments.

**Epistolary and Diary Forms:** Arabic storytelling's use of letters and diary entries to convey narratives has been adopted by Indian writers, contributing to the epistolary and diary forms of Indian literature.

**Character-Driven Narratives:** Arabic storytelling's focus on characters' inner thoughts and emotions has influenced Indian literature's exploration of psychological and emotional depths.

**Intertextuality and Allusion:** Indian writers have integrated allusions to Arabic literary works and storytelling techniques, showcasing the interconnectedness of literary traditions.

**Frame Narratives:** The Arabic storytelling technique of using a frame narrative to enclose multiple tales has been embraced by Indian writers, creating layered and interconnected story structures.

**Dialogue and Verbal Wit:** Arabic storytelling's use of dialogue, repartee, and verbal wit has influenced Indian literary dialogues, adding liveliness and depth to character interactions.

**Sufi Narrative Techniques:** Arabic Sufi storytelling techniques, which often use allegory and symbolism to convey spiritual insights, have influenced Indian Sufi literature's approach to conveying mystical experiences.

The infusion of Arabic storytelling techniques into Indian literature has led to a fusion of narrative styles, resulting in unique and diverse literary expressions that reflect both cultural heritage and shared human experience

#### **References-**

1. "The Arabs in Sindh, 711-1026 AD" by Muhammad Kabir
2. "India and the Arabs: The Historical Background" by J.Cottrell
3. "Arabic Elements in the Vocabulary of Indian Languages" by T.G Mainkar
4. "Arabic Loanwords in Indo-Aryan" by S.M Azizuddin Husain
5. "The Influence of Arabic Poetry on the Development of Persian Poetry" by Pieter Smoor
6. "The Art of the Ghazal in Urdu and Persian Poetry" by Mahmood Jamal
7. "The Ghazal: A World History" by John Hollander
8. "The Qasida in Persian Literature: A History" by Julie Scott Meisami
9. "The Rubaiyat of Omar Khayyam: A Critical Appraisal" edited by Paul Kriwaczek
10. "The Influence of Arabic Literature on Medieval Indian Narratives" by Alok Bhalla
11. "The Arabian Nights and Orientalism: Perspectives from East and West" edited by Yuriko Yamanaka and Tetsuo Nishio
12. "Indian Tales of the Arabian Nights" by Shahrukh Husain  
"The Arabian Nights in Historical Context: Between East and West" edited by Saree Makdisi and Felicity Nussbaum.

## Image Compression Techniques: A Review

Disha Maity , Debrupa Pal  
*Computer Application ,Narula Institutof Technology*  
 Kolkata, India  
 swastimistry1@gmail.com

**Abstract**—Sharing and storing image data successfully in contemporary communicative and network computing has been an important challenge. Millions of photographs are shared, sent, and stored every second by people all over the world. Although the area of enhancing storage device capacity has seen tremendous improvement, the creation of digital photos has also expanded in that ratio. As a result, there is still a great need for attractive image compression algorithms. Image compression is the process of reducing the number of bytes that make up an image without sacrificing the image's quality. Compression of photos can be done in a variety of ways. This essay examines various methods of image compression. The compression-decompression (CODEC) approach must be as straightforward as possible and totally lossless or of high quality to enable quick and efficient transmission of high quality digital images. Researchers worldwide are working to find a compression method that may readily achieve the desired result while keeping this demand in mind. Various steps in the general process for compressing photos have been presented. This examination of several compression methods enables the identification of beneficial characteristics and aids in the selection of the ideal compression approach.

**Keywords**— *Compression, DCT, Wavelet Compression, DWT, vector quantization, SPIHT*

### INTRODUCTION

As high speed compression and excellent image quality are in high demand, image compression is receiving more and more attention every day. The ability to transmit images more quickly is one benefit of picture compression. A picture, for instance, contains 512 rows and 512 columns. Without compression, a total of 2,097,152 bits of data had to be stored ( $512 \times 512 \times 8$ ). Additionally, an 8-bit data format is used to represent each pixel. Compressing now means to lessen the amount of data that must be stored while maintaining a high level of image quality. Figure 1 depicts the complete compression-decompression flow. Reducing the amount of data needed to depict a digital image is known as image compression. It is a method designed to produce a compact representation of an image, hence lowering the need for image storage and transmission. More photographs can be saved in the same amount of memory due to the reduction in image size. Reducing transmission time is also highly helpful in satellite communication [1-3]. The reduction of one or more of the three fundamental data redundancies can result in compression.



FIGURE 1:THE BASIC FLOW OF IMAGE COMPRESSION CODING

Finding an image representation with less linked pixels is the main goal of image compression. The two cornerstone ideas in picture compression are irrelevant and redundant. By eliminating one or more of the three fundamental data redundancies, compression is achieved. The basic flow of image compression coding

- Coding redundancy
- Interpixel redundancy
- Psychovisual redundancy

Coding redundancy - When less-than-ideal code words are utilised, coding redundancy is present. A code is a set of symbols that is used to represent a collection of data or a sequence of events. Each item of information or event is given a code word, which is a

collection of symbols. Each code word has a set number of symbols that make up its length [4].

**Interpixel redundancy** - Redundancy between pixels in an image is known as interpixel redundancy. Individual pixels carry extremely little information since it is possible to infer the value of any given pixel from the value of its neighbours [5].

**Psychovisual redundancy** - Psychovisual redundancy results from information that the human visual system ignores. By removing these types of data, the human eye is unable to detect the removal of the original image data. We can use a quantizer to lessen psychovisual redundancy, because there is a loss of quantitative information when psychovisually redundant data is removed. By reducing the size of the data, the compression method lowers the bandwidth, transmission time, and associated costs. Utilizing the discrete cosine transform (DCT) and discrete wavelet transform (DWT), numerous techniques have been created for data compression [6].

### **Types of Image Compression Techniques**

Lossless and lossy compression are the two basic subcategories of digital picture compression. Artificial images are compressed without loss. They employ low bit rate. During this process, there is a chance that part of the data will be lost. Although lossless compression is preferable for military and medical imaging [7].research studies have investigated the role of linguistic hedges in sentiment analysis. Among the pioneering works is the study by Wallis and Dunne (1994), which delved into hedges in natural language processing. Their findings revealed that leveraging hedges can enhance the precision of sentiment analysis by mitigating the uncertainty associated with the sentiment conveyed in a text.

### **Lossy Image Compression**

Accuracy is crucial in lossy compression and decompression techniques. There will be data loss, but it should be minimal compared to the tolerance level. It ought to be sufficient for image processing applications. When there is room for loss, this type of compression is employed to transmit or store multimedia data. Lossy signal processing repeatedly performs file compression and decompression in contrast to lossless data processing. That will eventually have an impact on data quality. Rate distortion theory provides support for the idea of lossy compression. Examples of lossy signal processing techniques include CPC, JPEG, and fractal compression [8].

### **Lossless Compression**

The images under this method of compression are nearly identical to the output images following decompression. It can tolerate a certain amount of discrepancy between the original image and the rebuilt image. In situations when the reconstruction must adhere to severe constraints, lossless compression can be a useful technique. Additionally, this approach is helpful when every pixel's small amount of information is crucial. We refer to wavelet as a lossless method. In the wavelet algorithm, we reconstruct in steps. As a result, there will be no data loss and you will be able to obtain all the information. Entropy coding, RLE, and LZW are a few examples of lossless data compression [9].

[1] introduced an unsupervised learning algorithm that determines the semantic orientation of sentiment terms within a dataset by employing Pointwise Mutual Information and information retrieval algorithms. Their approach achieves an accuracy rate of 74%.

### **Image compression basic**

Although there are numerous methods, algorithms, and strategies for compressing images, one of the three primary data redundancies can be removed from any image to significantly reduce its size. Below is an explanation of them.

### **Reduce the Correlation between Pixels**

The correlation between a pixel and its neighbouring pixels is quite high, or we may say that the values of a pixel and its adjacent pixels are very comparable, which is the cause behind image compression. Once there is less association between the pixels, we can use statistical properties and variable length coding theory to lower the amount of storage needed. The picture compression algorithms most crucial component, there are many different types of recommended processing techniques that are pertinent [10]. The following are the most popular techniques:

Predictive Coding - The decoded image and the original image share the same value for each corresponding element thanks to predictive coding, such as DPCM (Differential Pulse Code Modulation).

Orthogonal Transform-cc The two most well-known orthogonal transformations are the Karhunen-Loeve Transform (KLT) and the Discrete Cosine Transform (DCT). The lossy coding technique used by DCT-based picture compression standards like JPEG will cause some detail loss and irrecoverable distortion.

Subband Coding- A lossy coding technique is subband coding, such as the discrete wavelet transform (DWT). Subband coding's goal is to separate an image's spectrum into its lowpass and highpass components. A 2-dimension DWT-based picture compression standard is JPEG 2000.

### **Quantization**

The goal of quantization is to increase compression ratio while reducing precision. For instance, the original image utilises 8 bits to store one element for each pixel. If the image information is saved using fewer bits, such as 6 bits, the storage requirement is decreased and the image can be compressed. The drawback of quantization is that it is a lossy operation, leading to accuracy loss and irreversible distortion. The quantization techniques used by image compression standards like JPEG and JPEG 2000 differ from one another [11].

There are further two forms of quantization. Scalar quantization and vector quantization are the two methods. In comparison to scalar quantization, vector quantization offers greater compression. Subband coding is used in conjunction with quantizers like EBCOT, EEWITA, EZW, and SPIHT, among others.

### **Entropy Coding**

Entropy coding's primary goal is to reduce the average length of the image. According to the probability of the symbols, entropy coding assigns code words to the appropriate symbols. Entropy encoders, which replace symbols represented by equal-length codes with codewords whose length is inversely related to corresponding probability, are typically used to compress data. The lossless method of data compression is entropy coding, which includes Huffman, Runlength, Arithmetic, and Reed-Solomon coding [12].

### **Discrete Wavelet Transform**

The next step after color coordinate conversion is to divide the three color components of the image into many  $8 \times 8$  blocks. Typically, a hierarchical filter structure is used to implement the discrete wavelet transform. It is used on the preprocessor's produced image blocks. The approximation coefficients at level  $j$  are divided into four components using two-dimension DWT: the approximation at level  $j+1$ , and the details in three orientations (horizontal, vertical, and diagonal). The subband is quantized for additional compression following DWT transformation, and the coefficient is then entropy coded. JPEG 2000 employs DWT, whereas JPEG algorithm use DCT [13].

## Conclusion

A more effective and economical compression-decompression technique is still needed in the industry, even though picture compression involves a trade-off between compression ratio and peak signal to noise ratio. JPEG, a DCT-based picture compression format, operates admirably at moderate bit rates, but at greater compression ratios, the image quality deteriorates due to block-based DCT artefacts. On the other hand, wavelet-based coding, such as JPEG 2000, significantly improves picture quality at low bit rates due to the overlapping basis functions and superior energy compaction property of wavelet transforms. DCT and DWT can be combined to improve compression while maintaining image quality.

## References

- [14] [1] Marpe, D., Blattermann, G., & Riecke, J. (2000). A two-layered wavelet-based algorithm for efficient lossless and lossy image compression. *IEEE Transactions on circuits and systems for Video Technology*, 10(7), 1094-1102.
- [15] [2] Song, C., Li, Y., & Huang, B. (2011). A GPU-accelerated wavelet decompression system with SPIHT and Reed-Solomon decoding for satellite images. *IEEE Journal of selected topics in applied earth observations and remote sensing*, 4(3), 683-690.
- [16] Padmaja, G. M., & Nirupama, P. (2012). Analysis of various image compression techniques. *ARPN Journal of Science and Technology*, 2(4), 371-376.
- [17] Kaushik, A., & Gupta, M. (2012). Analysis of image compression algorithms. *International journal of engineering research and application*.
- [18] Manik Groach, Dr. Amit Garg, "DCSPIHT: Image Compression Algorithm", *International Journal of Engineering Research and Applications* Vol. 2, Mar-Apr 2012, pp.560-567
- [19] Kaur, R., & Randhawa, N. (2012). Image compression using DCT and DWT. *International Journal of Computing & Business Research*.
- [20] Hasan, M., & Nur, K. M. (2012). A lossless image compression technique using location based approach. *International Journal of Scientific & Technology Research*, 1(2).
- [21] Kaur, A., & Kaur, J. (2012). comparison of DCT and DWT of Image Compression Techniques. *International journal of engineering research and development*, 1(4), 49-52.
- [9] Kramer, O., & Kramer, O. (2016). Scikit-learn. Machine learning for evolution strategies, 45-53.
- [22] Gonzalez, R. C., Eddins, S. L., & Woods, R. E. (2004). *Digital image publishing using MATLAB*. Prentice Hall.
- [23] Hussain, A. J., Al-Fayadh, A., & Radi, N. (2018). Image compression techniques: A survey in lossless and lossy algorithms. *Neurocomputing*, 300, 44-69.
- [24] Singh, M., Kumar, S., Singh, S., & Shrivastava, M. (2016). Various image compression techniques: lossy and lossless. *International Journal of Computer Applications*, 142(6), 23-26.
- [25] Reichel, J., Menegaz, G., Nadenau, M. J., & Kunt, M. (2001). Integer wavelet transform for embedded lossy to lossless image compression. *IEEE Transactions on Image Processing*, 10(3), 383-392.
- [26] Mentzer, F., Gool, L. V., & Tschannen, M. (2020). Learning better lossless compression using lossy compression. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (pp. 6638-6647).

## MEDIA AND PUBLIC OPINION IN NEW MEDIA ENVIRONMENT

JOEL TUDU, Assistant Professor, Department of Philosophy, JATINDRA RAJENDRA MAHAVIDYALAYA

### ABSTRACT

Traditional media is the main source all our information, ideas, and knowledge that plays a vital role in shaping human behaviour, attitudes, preferences, and public opinion. However with the advent of Information and Communication Technologies (ICTs) and the access of high speed internet, the concept of media and people themselves have changed unimaginably. A *Digital life* has been oxygenated in us, even though the digital world is in a constant war between *true semantic information* (information) and *false semantic information* (misinformation). Under such circumstances, media undertakes to develop the public perception and opinion, and holds the powerful accountable. In fact, the digital world and the media are all connected in terms of information. In order to know the overall picture of what information is, the study adopts semantic approach in the light of Philosophy of Information with special reference to the contribution of Professor Luciano Floridi. The paper briefly discusses about information, and disinformation its tools and strategies in reference to Indian radicalism or extremist ideology from the perspective of philosophical analysis. Finally it promotes certain potential solution to combat the conflicts of information.

**Key Words:** Media, Information, Semantic Information, Philosophy of Information, Disinformation, and Radicalism.

## MEDIA AND PUBLIC OPINION IN NEW MEDIA ENVIRONMENT

### INTRODUCTION

Media plays an important role in our daily lives in shaping our behaviour, attitudes and preferences by imparting data, information, ideas, and knowledge. Our digital life has been oxygenated with the advent of Information and Communication Technologies (ICTs) and the access of high speed internet, which has an extensive potentiality to change the course of our day to day life. It can uplift our life or destroy it. The digital world is in a constant war between true semantic information (information) and false semantic information (misinformation) [see diagram 1]. Media communicates the true semantic information to the public to develop the public perception and opinion, holds the powerful accountable. Everything is all about information. But what is information? Information galaxy is very vast, and necessary to adopt semantic approach to know the overall picture of information. Generally speaking, media is all about communication and again speaking in the light of the correspondence theory of meaning media deals with information that is to show the picture of the world of affairs (Wittgensteinian sense). Media evolved from traditional time to contemporary time, and new terms are also infused to mean them such as multi-media, new media, alternative media, social media and also digital media. Media, Public Opinion and New Media Environment are the key concepts of my investigation, being done from the perspective of Philosophy of Information and Philosophical Analysis, and briefly outlined issues related to information, and disinformation with some of its tools and strategies in reference to

Indian radicalism or extremist ideology. Finally the paper provides some potential solution to combat the conflicts of infosphere.

## MEDIA

Oxford Leaner's Dictionaries defines the word media as "the main ways that large numbers of people receive information and entertainment, this is television, radio, newspapers, and the Internet". The term media is used here in the sense of journalism. That means media can be instruments of free speech, expression, and opinion; of sharing data, information, ideas, and knowledge, promoting interconnectedness among people and accommodating diversity through regionalization of contents. New media refers to the television, print media, radio, online media, and social media and messaging platforms such as Facebook, X (Twitter), YouTube, Instagram, WhatsApp etc through which information is circulated. They are guided by virtues: intellectual virtues (wisdom, understanding, and prudence) and moral virtues (courage, justice, and truthfulness).

From Indian perspective, nature of the media is found to be bipolar based on the above ethical principles. Only a few carry out true and independent journalism faithfully, while the majority of them do not. Mr. Ravish Kumar, the renowned Indian journalist termed the second category of media as "Godi Media" which literally means media sitting on the laps of the governments. Literally speaking, their only job is to defend the ruling party or the governments by vehemently spreading their political narratives and disinformation in order to distract the public attention and opinion from all sorts of real issues such as failures, accountabilities, responsibilities, incompetence, corruption, infringements of rights of citizens, erosion of democratic-constitutional principles, provisions and institutions etc. Mohammed Hazim Alkawaz and Sayeed Ahsan Khan of Management & Science University, Malaysia conducted a research study on Indian media under the title "Use of Fake News and Social Media by Main Stream News Channels of India" in which they have established how Indian mainstream media use social media and fake news to fuel nationalism and polarization to divert the public attention from real issues like employment, health care, education, infrastructure, crime against women and children, economy etc.

Another study has been done by Md. Sayeed Al-Zaman of Bangladesh, on misinformation during the Covid-19 pandemic in his article "A Thematic Analysis of Misinformation in India during the COVID-19". His study focuses on the impacts of misinformation in Indian societies and public health by analyzing themes of 228 pieces of popular misinformation prevalent in India from 1st February 2020 to 11th April 2020. It also outlined two types of religious misinformation of which religious and divinity based misinformation is less harmful (i.e. Islamic misinformation) while religious politics and communalism is more harmful (i.e. Hindu misinformation).

Thus credibility of Indian media has drastically diminished in recent time. These types of larger scale of damages can only be done by those who follow the ideologies like extremism, radicalism, fanaticism, fundamentalism, fascism, dictatorship, aristocracy, or autocracy. They weaponize disinformation systematically in order to build up the public opinion.

## PUBLIC OPINION

Facts, logic and science are the bases for establishing the public opinion. Media is one fundamental aspect of infosphere to convey information. That is why media has to be neutral to be considered as the fourth pillar of any democracy. In this juncture, the focal point is INFORMATION and discussing here two aspects of information – information as content and information as communication.

According to Floridi, Information consists of data (see diagram 2) that are well formed and meaningful. Well-formed means data (informants) that are correctly arranged together in accordance with the media ethics and principles (syntax) and meaningful means data must comply with meaning of constitutional and democratic values, principles, provisions (semantic). If such nature of data (meaningful and well formed) are used to picturize the world and describe it, then we get a semantic content which has twofold functions: Picking up a fact or state of affairs or reality and modelling or describing that reality into the semantic world. For example, media is to pick up a reality, extract its information and use to model that reality into semantic world (true journalism) in which that information could be so and so. This depends on two conditions – resource of that reality (realism) and intention or purpose to use (teleologism). Realistically the reality must be true and teleologically the nature of it must be successfully communicated to the masses to establish public opinion. In this case the informer and the informee may have the same background knowledge about the message. If the informee does not have the background knowledge of the informer's intention or purpose (epistemic vacui), he/she could be the potential victims of disinformation. So we need to tackle the other side of information i.e. misinformation.

## **MISINFORMATION**

Professor Floridi defines it as the semantic information that is simply false. Media is supposed to pick up true semantic information. That means when false information is shared, it may or may not cause harm. Unintentional misinformation like jokes, satire, sarcasm, and parody do not cause harm while intentional misinformation does mislead and causes harm (see diagram 4).

### **1. Malinformation:**

It refers to genuine information that is intentionally shared to cause harm or to profit out of it or by blackmailing to strengthen one's party/ affiliation/ office etc. For example, genuine WhatsApp chat (or private pictures/ videos) may be shared to cause harm to certain politician to influence the voters against him/her and political affiliations. In India, investigating agencies like CBI, ED, IT, NCB, etc are used by the central government against the opposition leaders, activists, celebrities, bureaucrats, judges, industrialists, or media in order to profit out of them like horse-trading, assembly seat sharing, favourable court judgements, becoming their influencers, becoming Godi media, etc.

### **2. Disinformation:**

Public opinion under the fascist regime around the world is heavily influenced by disinformation, using varieties of tools, techniques and strategies. Media is used as one of them. According to the European Union, the concept of disinformation refers to "verifiably false or misleading information that is created, presented and disseminated for economic gain or to intentionally deceive the public and may cause public harm." The concept of fake news comes under the umbrella of disinformation. According to Wardle, fake news is an instance of misinformation. It is the veneer of the genuine news, and motivated by financial and ideological inclination. It is mainly based on political bias, de-context, logically invalid, intentionally misleading for profit, and fabricated in a way that cannot be verifiable. The term fake news has got its origin from Donald Trump who termed it as the "enemy of the people" (2016). He meant "the news he simply didn't like" or "the news that he didn't want his supporters to hear." Its aim is to discredit the real news or issues. Based on this definition, I have outlined the following characteristic features of disinformation:

**HUMAN INSTRUMENTS:** Leadership, Instigators, Agents, Supporters and Defenders, and the Silent Majority.

**TOOLS:** Mainstream Media (Godi Media), Social Media and Tek Fog, Bots (Software Robots), Photo Editors Softwares, and Deepfake Technology.

**TECHNIQUES AND STRATEGIES:** Systematic Lies and False Promise, Silence and Inaction, Contemporary Negative Tales, Trolls and Aggressive Militancy, Astroturf Campaign, Propaganda, Sophisticated and Micro-targeting Disinformation, Manufactured Amplification, and Impersonation of Authority.

## SOCIAL FACTORS

It is also worth important to mention the reasons or the factors that instigate to propagate disinformation. Both educational and economic factors play pivotal role together in shaping the public perception and opinion that facilitate to create a new environment in the society. Absence of one of them is not enough to realize one's ideology; and both factors contribute to be the necessary conditions for a nation's destiny.

1. Educational Factors: Control over Academic and Research Institutes and Mainstream Media Platforms
2. Economic Factors: Control over 'Means to Food and Security' means through which the public get food, health facilities, quality education, shelter, job, affordable agriculture expenditure, industry development, reduction of unemployment ratio, implementation of rational economic policies, increase of budgets, giving due shares to states etc.

## CONCLUSION

Media being the main source of news and information, it also our task to check their contents, their ethical behaviour, political and ideological inclination, motives, etc before believing in them. Until and unless we doubt the piece of content, we may become a potential victim of misinformation without knowing its truthfulness. A kind of Cartesian doubt is necessary to detect the disinformation. For this we need to verify the content by applying questions with what, who, when, where, why to the piece of content, source of creation, time and situation of dissemination, location of the content and intention or the purpose of its creation. Then only we can successfully consume true semantic information. If we detect the contents replete with disinformation, falsehood, fallacious, malicious in nature etc that are potential to cause public harm or damage, then we must raise our voices against them by writing, talking, discussing, campaigning awareness and extending our support to those who disprove them so that we can make our digital world safe, secure, and trustworthy.

## SUPPLEMENTARY MATERIALS:

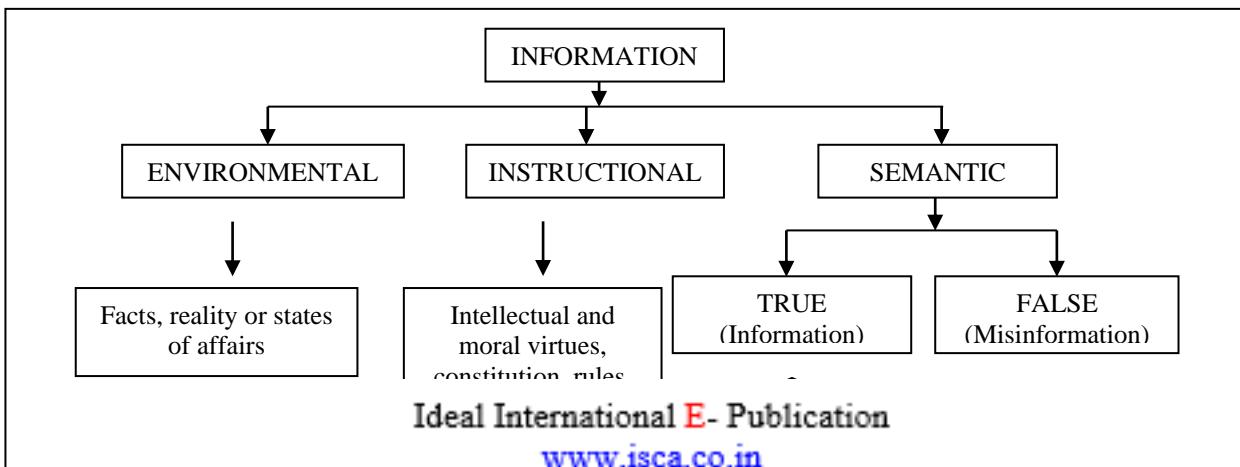


Diagram 1: Taxonomy of Information in relation to Medi

TRACES → DATA → INFORMATION → KNOWLEDGE → WISDOM

Diagram 2: Procedure of Information

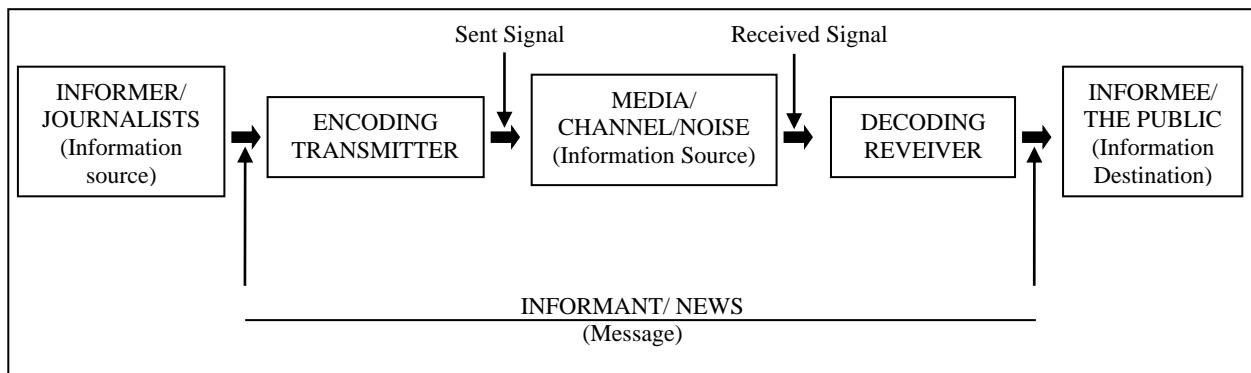


Diagram 3: shows that journalists or media are informer and the viewers/readers/supporters are the informee while news or message is the informant. Coding and decoding procedure takes place through a language common to both the information source and information destination carried out with the help of a channel of communication (media platforms) with some possible noise (received but unwanted data).

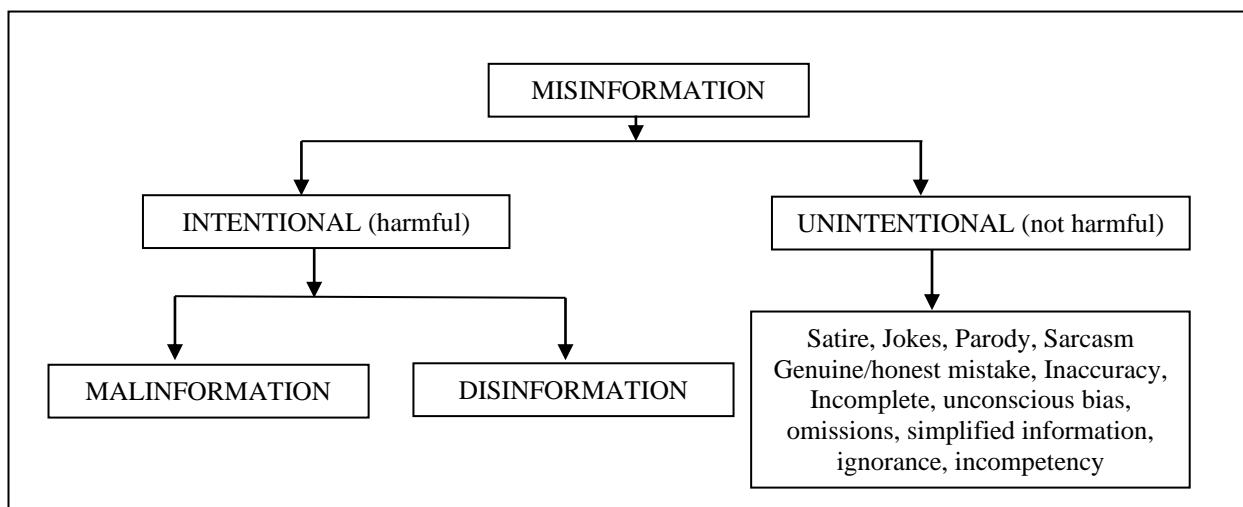


Diagram 4: Taxonomy of Misinformation.

## ACKNOWLEDGEMENT

First of all, I extend my heartfelt thanks to the members of the IQAC, Nagar College for organizing this National Conference on Multidisciplinary Research (NCMR-2024) and giving me the opportunity to put forward my philosophy reflections on the platform, and also I thank the Principal and Professors of Philosophy department, Jatindra Rajendra Mahavidyalaya for sharing this information with me and influencing me to undertake the task on the topic 'Media and Public Opinion in New Media Environment'. I also sincerely thank Professors of Philosophy Department, University of North Bengal for guiding my philosophical thinking and endeavours. At last my wife (Pinki Mardi) also deserves my sincere thanks and gratitude for encouraging and supporting me unceasingly to study day-night.

## REFERENCES

1. Edson C. Tandoc Jr., Zheng Wei Lim, and Richard Ling. "Defining Fake News." *Digital Journalism*, 2017, [dx.doi.org/10.1080/21670811.2017.1360143](https://dx.doi.org/10.1080/21670811.2017.1360143)
2. Floridi, L. "Information Quality." May 01, 2013, [ssrn.com/abstract=3853555](https://ssrn.com/abstract=3853555) or [dx.doi.org/10.2139/ssrn.385355](https://dx.doi.org/10.2139/ssrn.385355)
3. Floridi, L. "Information ethics: On the philosophical foundations of computer ethics." *Ethics and Information Technology*, vol. 1, no. 1, 1999, pp. 37–56. Reprinted, with some modifications, in *The Ethicomp Journal*, vol. 1, no. 1, 2004, [www.ccsr.cse.dmu.ac.uk/journal/articles/floridi\\_1\\_philosophical.pdf](http://www.ccsr.cse.dmu.ac.uk/journal/articles/floridi_1_philosophical.pdf).
4. Floridi, L. "Information." *The Blackwell guide to the philosophy of computing and information*, edited by L. Floridi, Oxford: Blackwell, 2004, pp. 40–61.
5. Floridi, L. Information Quality (May 01, 2013), [dx.doi.org/10.2139/ssrn.385355](https://dx.doi.org/10.2139/ssrn.385355)
6. Floridi, L. "The Onlife Manifesto". *The Onlife Manifesto*. Cham: Springer, 2014b, pp. 264–13, [doi.org/10.1007/978-3-319-04093-6\\_2](https://doi.org/10.1007/978-3-319-04093-6_2)
7. Floridi, L. "Soft Ethics and the Governance of the Digital." *Philosophy & Technology*, vol. 31, no. 1, 2018, pp. 1–8, [doi.org/10.1007/s13347-018-0303-9](https://doi.org/10.1007/s13347-018-0303-9)
8. Sloman, A. "What is Information? Meaning? Semantic Content?" *School of Computer Science, University of Birmingham*. 12 April, 2012, [www.cs.bham.ac.uk/research/projects/cogaff/misc/whats-information.pdf](http://www.cs.bham.ac.uk/research/projects/cogaff/misc/whats-information.pdf)
9. Das, A. and Ralph Schroeder. "Online disinformation in the run-up to the Indian 2019 election." *Information, Communication & Society*, 2020, [doi.org/10.1080/1369118X.2020.1736123](https://doi.org/10.1080/1369118X.2020.1736123).
10. Colomina. C, Héctor Sánchez Margalef, and Richard Youngs. "The impact of disinformation on democratic processes and human rights in the world." *European Union, Directorate-General for External Policies, Policy Department*, 2021, [doi.org/10.2861/59161](https://doi.org/10.2861/59161) or [www.europarl.europa.eu/RegData/etudes/STUD/2021/653635/EXPO\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2021/653635/EXPO_EN.pdf)
11. Jaffrelot, C. "The Modi-centric BJP 2014 election campaign: new techniques and old tactics." *Contemporary South Asia*, Vol.23, No.2, 2015, pp. 151-166. [dx.doi.org/10.1080/09584935.2015.1027662](https://dx.doi.org/10.1080/09584935.2015.1027662).
12. Jaffrelot, C. and Vihang Jumle. "One-Man Show." *The Caravan: A journal of politics & culture*, 15 December, 2020. [caravanmagazine.in/media/republic-debates-study-shows-channel-promotes-modi-ndtv](http://caravanmagazine.in/media/republic-debates-study-shows-channel-promotes-modi-ndtv)
13. Freelon, D. and Chris Wells. "Disinformation as Political Communication." *Political Communication*, 2020, [doi.org/10.1080/10584609.2020.1723755](https://doi.org/10.1080/10584609.2020.1723755)
14. "Deepfakes: What You Urgently Need To Know." Podcast by Carl Miller and Nina Schick. *YouTube*, uploaded by Intelligence Squared, 5 Aug. 2020, [youtu.be/gLjRP-nHjkg](https://youtu.be/gLjRP-nHjkg)

15. Roston, E. "How Donald Trump, Elon Musk, and Gwyneth Paltrow Short-Circuit Your Ability to Think Rationality." *Bloomberg*, 15 October, 2021. [www.bloomberg.com/news/features/2021-10-15/rhetorical-tricks-donald-trump-and-elon-musk-use-to-control-how-you-think](http://www.bloomberg.com/news/features/2021-10-15/rhetorical-tricks-donald-trump-and-elon-musk-use-to-control-how-you-think)
16. Brown, É. "Propaganda, Misinformation, and the Epistemic Value of Democracy." *Critical Review*, 2019, [doi.org/10.1080/08913811.2018.1575007](https://doi.org/10.1080/08913811.2018.1575007)
17. "Explained: What Are Deepfakes?" *webwise.ie*, [www.webwise.ie/news/explained-what-are-deepfakes/](http://www.webwise.ie/news/explained-what-are-deepfakes/)
18. Giulietti, P.A. "The Hidden Danger of Trump: How Trump Changed the Language Game of Politics and its effect on Truth and Democracy." *Liberated Arts: a Journal for Undergraduate Research*, Vol. 4: No. 1, 2018, [ojs.lib.uwo.ca/index.php/lajur/article/view/7266](http://ojs.lib.uwo.ca/index.php/lajur/article/view/7266)
19. Egelhofer, J.L. and Sophie Lecheler. "Fake news as a two-dimensional phenomenon: a framework and research agenda." *Annals of the International Communication Association*, 2019, [doi.org/10.1080/23808985.2019.1602782](https://doi.org/10.1080/23808985.2019.1602782)
20. Al-Zaman, Md. S. "A Thematic Analysis of Misinformation in India during the COVID-19 Pandemic." *International Information & Library Review*, 2021, [doi.org/10.1080/10572317.2021.1908063](https://doi.org/10.1080/10572317.2021.1908063).
21. Omorogie, U. "Online Misinformation Analysis and Information Quality Theory." 25 Jan. 2021, [doi.org/10.31235/osf.io/82swk](https://doi.org/10.31235/osf.io/82swk)
22. Rubin, V.L., Niall J. Conroy and Yimin Chen. "Towards News Verification: Deception Detection Methods for News Discourse." *HICSS2015*, 2015, [works.bepress.com/victoriarubin/6/](http://works.bepress.com/victoriarubin/6/)
23. Raj, Y. "Facebook made 'disastrous' choices: Whistleblower Frances Haugen to US lawmakers." *msn.com* edited by Amit Chanda, 5 October 2021, [Facebook made 'disastrous' choices: Whistleblower Frances Haugen to US lawmakers \(msn.com\)](https://www.facebook.com/2021/10/05/10572317.2021.1908063)
24. Chakrabarty, S. "Nationalism a driving force behind fake news in India, research shows." *BBC News*, 12 Nov. 2018, [www.bbc.com/news/world-46146877](http://www.bbc.com/news/world-46146877)
25. Suwananakorn, S. "Fake videos of real people – and how to spot them." *Youtube*, uploaded by TED. 25 July, 2018, [www.ted.com/talks/supasorn\\_suwananakorn\\_fake\\_videos\\_of\\_real\\_people\\_and\\_how\\_to\\_spot\\_them\\_up-next](https://www.ted.com/talks/supasorn_suwananakorn_fake_videos_of_real_people_and_how_to_spot_them_up-next)
26. Morgan, S. "Fake news, disinformation, manipulation and online tactics to undermine democracy." *Journal of Cyber Policy*, vol. 3, no. 1, 2018, pp. 39-43. [doi.org/10.1080/23738871.2018.1462395](https://doi.org/10.1080/23738871.2018.1462395)
27. Jameela, K. "Unravelling Truth of Women the Recent Riots in Manipur." *International Journal of Multidisciplinary Educational Research*, vol. 12, no. 9(1), September 2023, pp. 156-160. DOI: [ijmer.in.doi./2023/12.9.20.3](https://ijmer.in.doi./2023/12.9.20.3)
28. Ferrara, E., et all. "The Rise of Social Bots." *Communications of the ACM*, vol. 59, no. 7, July, 2016, pp. 96-104, [www.loebner.net/Prizef/loebner-prize.html](http://www.loebner.net/Prizef/loebner-prize.html)
29. [www.aljazeera.com/news/2023/7/21/what-is-happening-in-indias-manipur](http://www.aljazeera.com/news/2023/7/21/what-is-happening-in-indias-manipur)
30. [www.thehindu.com/news/national/manipur-violence-updates-july-20-2023/article67100435.ece](http://www.thehindu.com/news/national/manipur-violence-updates-july-20-2023/article67100435.ece)
31. [www.theguardian.com/world/2023/jul/21/manipur-india-why-is-there-conflict-and-how-is-the-government-responding](http://www.theguardian.com/world/2023/jul/21/manipur-india-why-is-there-conflict-and-how-is-the-government-responding)
32. [www.reuters.com/world/india/why-is-indias-manipur-state-grip-ethnic-violence-2023-07-21/](http://www.reuters.com/world/india/why-is-indias-manipur-state-grip-ethnic-violence-2023-07-21/)
33. [www.oxfordlearnersdictionaries.com/definition/american\\_english/media](http://www.oxfordlearnersdictionaries.com/definition/american_english/media)
34. "Indian education paradox: Over 86.8% of youth being taught but 25% cannot read regional languages fluently" [www.deccanherald.com/india/over-868-in-14-18-age-group-in-india-enrolled-in-educational-institutions-2852562](http://www.deccanherald.com/india/over-868-in-14-18-age-group-in-india-enrolled-in-educational-institutions-2852562)

- 35.“Media in India: Access, Practices, Concerns and Effects”  
[www.kas.de/de/web/indien/laenderberichte/detail/-/content/media-in-india-access-practices-concerns-and-effects](http://www.kas.de/de/web/indien/laenderberichte/detail/-/content/media-in-india-access-practices-concerns-and-effects)
- 36.Swerzenski, J.D. “Fact, fiction or Photoshop: Building awareness of visual manipulation through image editing software.” *Journal of Visual Literacy*, vol. 40, no.2, pp.- 104-124, 26 Mar. 2021, <https://doi.org/10.1080/1051144X.2021.1902041>

## **Revisiting Ship Building Industry and Technology in Medieval Bengal -A Historical Excursion**

Gopal Singha, Ph-D Scholar, Islamic History and Culture, University and Calcutta,  
gopalsinghacu00@gmail.com

### **Abstract**

In this paper mainly highlight the shipbuilding technology and impact trade and economy in medieval Bengal. The methods of shipbuilding has mentioned in the contemporary sources of Persian, Arabic, Chinese and foreign travellers testimonies. Through the maritime ships of Bengal were made Arabian and Chinese style but the war ships construction totally followed indigenous styles by the local technicians.

Key words; Shipbuilding, crafts technology, maritime trade, Bajra, Navy

### **Introduction**

Indian Shipping had a long history since the Indus Valley civilization.<sup>1</sup> India has a very long shoreline, covering form Sind to Bengal, and surrounding the southern Peninsula and also a huge network of rivers, especially in Bengal. Thus, plentiful in rivers and linked with the Bay, was the major cause for shipbuilding in Bengal.<sup>2</sup> The indigenous shipping made Bengal self-sufficient in the matter of foreign affairs defence and commerce.<sup>3</sup> It was key industry of Bengal and played an important role of sea-born trade relations with Europe, Africa and Asia. The practice of shipbuilding tradition was prevalent since ancient time which continued up to the medieval times in Bengal.

Bengal had a glorious tradition of shipbuilding industry. For the purpose of communications, internal trade and naval warfare in the riverine country, the Bengali artisans manufactured varieties of boats big and small from the Hindu times. In the ship building industry received further impetus in view of the growing need for naval warfare and unprecedented stimulus to the sea-faring and commercial activities. It is known from the contemporary records of the period of the independent Muslim rule in Bengal that the Bengali merchants built very big and swift sailing boats. The author of *Masalik al- Absar* mentions that many of the ships of Bengali merchants built very big and swift sailing boats. The author of *Masalik al – Absar* mentions that many of the

---

<sup>1</sup> R. K. Mookherji, Indian Shipping, A History of maritime trade, pp- 124

<sup>2</sup> Ibid p- 126

<sup>3</sup> P. C. Bagchi, Political Relation between Bengal and China, 1945, pp 114-15

Bengali had mills ovens and bazaars. He says that these ships were so large that the passengers of the same vessel came to know each other only after some time. Regarding the speed of the boats he observes that if an arrow was shot at the foremost one of two hundred moving boats it would fall on the middle one of them on account of their fast speed.<sup>4</sup>

The evidence of *Masalik al- Absar* is corroborated by the accounts of the Italian merchant Varthema who records. These people [of Bengal] make use of very large ships and of various kinds some of which are made flat- bottomed, because such can enter into places where there is not much water.<sup>5</sup> Another kind are made with prows before and behind, and they carry two helms and two masts and are uncovered. There is also another kind of large ship which is called Giunchi and each of these is of the tonnage of one thousand butts, on which they carry some little vessels to a city called Melacha.<sup>6</sup>

The accounts of the Portuguese merchant Barbosa further confirms the existence of ship- building industry in the 16<sup>th</sup> century Bengal. In writing of the Arab, Persian, Abbasinian and Indian merchants of the city of Bangalah, he says. They are all great merchants and own large ships of the same build which they call Jungos[Junk], which are very large and carry a very considerable cargo.<sup>7</sup> With these ships they navigate to Cholemender [Coromondal], Malabar, Cambay, Peigu, Tarnasari [Tenasserim], Sumatra, Ceylon and Malaca, and they trade in all kinds of goods from many places to others.<sup>8</sup>

The contemporary Bengali literature reflects the ship- building industries and commercial enterprises of the merchants of the adventures of the merchant Dhanapati of Gaur and his son Srimanta in ships of 100 yards length and 20 yards breadth with prows shaped like makara [crocodile] or the head of an elephant or lion. The Manasamangala poem of Jagajjivana throws some light on the prosperity of the ship-building industry in Bengal.<sup>9</sup>

According to Manasamangala 'the merchant Chand Saudagar summons to his presence the master craftsman named Kusai and orders him to build 14<sup>th</sup> ships for material to build the various parts of the boats with. There were soon hewed out three or four lakhs of planks which were afterwards joined together by means of iron nails. It is significant

<sup>4</sup> *Masalik al-Absar*, by Prof. A . Rashid, pp-17

<sup>5</sup> Verthema, The Travels of in India Ludoyico Di Varthema in Egypt, London, 1886, p-221

<sup>6</sup> Purchas, His Pilgrims, Varthema, Verthema, The Travels of in India Ludoyico Di Varthema in Egypt, London, 1886, p-222

<sup>7</sup> Barbosa, The Book of Duarte Barbosa, 1918, p-145

<sup>8</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Asssam, 1936 p-170

<sup>9</sup> Manasamangala, Vijaya Gupta, Calcutta university press, 1962 pp-127

to note that some very old masts of ships have been unearthed in some of the villages in the neighbourhood of Pandua through which the Mahananda once flowed.<sup>10</sup>

Bengal had sufficient area under forests which provided wood for the shipbuilding's in this perspective Abul Fazl says that 'widespread forests in the Sarkar of Bazuhu provided long and thick timber of which mast were made.<sup>11</sup> The contemporary local source Kavikankana Mukundaram supported Abul Fazl and his viewed that 'ships were constructed with the timbers of Jackfruit, Piyal, Sal and other trees which were available in Bengal during this period. If further states, 'some ships were hundred yards long and twenty yards wide'.<sup>12</sup> The front parts of the ships had the appearances of various animals carved on them and decorated with precious stones, ivory, silver and gold.<sup>13</sup>

### **Tools and Techniques**

The engineering arts of shipbuilding, various kinds of ships and boats were made by artisan's class of Bengal. Therefore various methods were applied for the shipbuilding. Here, we may discuss in brief : galui, (prow), danda (spinal) chord, gura (plank for sitting), hansabata (swanlink wooden screen extending between the prow and the roof ), koljharp (door panel of the cabin) jharp (door panel made of bamboo mat), soaribata (straight path made of bamboo extending on either side of the roof), charat, (angular space of wood adjacent to prow) malum kath (mast), kandar (helm), baitha (mal oar) patoal (large oar).<sup>14</sup> These technical terms applied for the shipbuilding construction. Later in the beginning of 18th century the indigenous ship building methods had lost due to European influence. The English East India Company built ships with European technique and under the direction of the expert of European supervisor of their interests.<sup>15</sup> Various types of boats and ships were made such as river ships maritime ships, worships, Hajj pilgrimage ships, pleasure boat and so on.

### **River Route Shipbuilding**

Purgoo and Olacko were two important river ships engaged in the river route between Hooghly, Pipli and Balasore mainly served as loading and unloading ships. Beside these, several other types of ships were built in the river route for trade and communication perhaps purpose. Ibn Battuta has mentioned the importance of these boats and remarked. There are countless boats on its river and each boat carries a drum, when

<sup>10</sup> R. K. Mukherjee, History of Indian Shipping, p-159

<sup>11</sup> *Ain-i-Akbari, Abul Fazl, English translation of vol-1, by H. Blochmann, edited by D. C. Phillot, p-132*

<sup>12</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p-170

<sup>13</sup> *Ain-i-Akbari, Abul Fazl, English translation of vol-1, by H. Blochmann, edited by D. C. Phillot, p-132*

<sup>14</sup> M. R. Tarafder, Trade technology and Society Medieval Bengal, Dhaka, 1990.

<sup>15</sup> Iftikhar-ul-Awwal, State of Indigenous Industries, in Sirajul Islam, ed, History of Bangladesh

boats meet, each of them beats a drum and they salute another. In river borne trade, Bengal activity involved Ganga valley, Sindh region and Assam was mainly exchanged the goods among these reasons.<sup>16</sup> About this kinds of ships, Thomas Bowrey mentioned as 'great flat bottomed vessels of an exceeding strength which are called Patellas and built very strong.<sup>17</sup> Each of them would bring down 4000-5000 or 6000 Bengal mounds. These boats were engaged to goods exported and imported regions of Brahmaputra between Bengal and Assam also Ganges between Patna and Hooghly-Balasor and Hugli-Dhaka. Besides trading activities in river route, these broads were also used for communications within these states. <sup>18</sup>

### **Maritime Shipbuilding**

Saptadinga was one of the important maritime ships used for inland and coastal trade.<sup>19</sup> This ship was made by wood and its appearance was light and looking beautiful. Besides Saptadinga, the Chinese and Arabian type maritime ship building was in practice especially under the patronage of Hussain Shah and Nusrat shah in Bengal during 15thand 16th centuries.<sup>20</sup> The Chinese ship known as Junk, generally made of deodar timber, had a single floor provided with 50 or 60 cabins. It was 250 fit long and 110 fit broad.<sup>21</sup> The same method was also applied by the Sultans of Bengal. The structure of the ships such as over the flat bottom of ship, the two sides were so much elevated that the whole frame took the shape of a rectangle. In the main body of the ship was built with a long narrow flat piece of wood and similar material of the type also used for making floors joined with iron nails. It was made watertight by stopping up any gaps in the main body of the ships. Furthermore, outside and inside the ships were a dividing wall or barrier were made of strong planks with several watertight compartments. The floor of the ships some rooms were built for residential purpose.<sup>22</sup> Additionally the floor house towards the back part of the key must was occupied by a compass room a prayer room, several cabins, go downs and a kitchen.<sup>23</sup>

### **War Shipbuilding**

The Bengal Sultan built war ships which were also used in transporting the troops up and down the river sand for attacking seashore, riverside or island based fortresses

<sup>16</sup> Ibn Battuta, *Travels of Ibn Battuta*, 3vols, translation by H. A. R. Gibb, Cambridge, 1971, p- 234

<sup>17</sup> Thomas Bowrey, A Geographical Account of countries round the bay of Bengal, 1669, 79, Cambridge, Cambridge University Press, 1919 pp 143-145

<sup>18</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Asssam, 1936 pp-145-146

<sup>19</sup> M. R. Tarafder, Trade, Technology and Society, Medieval Bengal p-32

<sup>20</sup> Ibid, p-32

<sup>21</sup> Marco polo, the Travels of Marco polo, Trans by R. E. Latham, London, 1953, pp-213-14

<sup>22</sup> Jhon Masefield, The travels of Marco Polo, p-156

<sup>23</sup> Ma- Huan, Ying-Yai Sheng – lan, vol-3, 1970, p-305

during the military expedition.<sup>24</sup> The deltaic land of Bengal with many tributaries of the Ganges and heavy rainfall during rainy season cavalry was not effective for save the kingdom from outsiders, Therefore strengthen the naval power was only alternative option for the Bengal sultan. Ghiyasuddin Iwaz for the first time used against the military expedition of the Iltutmish.<sup>25</sup> Subsequently during the time of Mughals the practice of the worships used against Assam mentioned detail by Mirza Nathan in his book Baharistan - i- Ghaibi. Mention may be made various war ships were made the Mughal subadar in Bengal such as kosa, jalba, gurab, Parinda, Bajra, Patila, slab, palil, Bharbalam, khatgiri, mahalgiri, and Palwara, Mughal Subhadar, Shaista Khan started war ship building mandatory custom for the merchants class to increase the naval defence of power of Bengal.<sup>26</sup> Therefore, the merchants of Hooghly, Jessore, Pipli and Balasore were well built and fitted the ships of weight of 400-500 or 600 tons. The Subahdars also having strict order to see them finished with all speed and gunned well manned and send up to the Ganges. The artisan class known as Nawara made the ships under the patronage of the Mughals. Sometimes the services of European specialists were also utilised for the worship constructions. Through the maritime ships of Bengal were made Arabian and Chinese style but the war ships construction totally followed indigenous styles by the local techniques.<sup>27</sup>

### **Bajra and Dingee**

The Bajra and Dingees were the pleasure boat, Bowery made a drawing on Bajra boat and shows, that it was a long boat with both ends, a little extended and tapering symmetrically, moderately above the water. There was an open cabin like structure at one of the ends. <sup>28</sup> Dingee was a small boat made by artisans for fishing on the river side.

Ships were built for the other purposes too, the pilgrimages of Bihar and Bengal used to go the Mekka for Hajj from the Chittagong port. This information has been revealed from a letter of Maulana Muzaffar Shams Balkhi a spiritual disciple and successor of Sufi Hazrat Sharf, Uddin Yahya Maneri of the 14th century of Bihar in the letter or number 152 addressed the Bengal Sultan Ghiyas udin Azam Shah, the Sufi wrote now the pilgrim season is approaching. A Farman may kindly be issued to the official (karkuns)

<sup>24</sup> Ibn Battuta, *Travels of Ibn Battuta*, 3vols, translation by H. A. R. Gibb, Cambridge, 1971, p- 130

<sup>25</sup> Mc Grail, Sean and Lucy Blue, The Rivers Clinker Boats of Bangladesh, in Sean Mc Grail [ed.], Boats of South Asia, London and New York, 2002, pp-65-66

<sup>26</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p- 168

<sup>27</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p-170

<sup>28</sup> M. R. Tarafder, Trade, Technology and Society, in medieval Bengal, Dhaka, p-29

of Chatgaon, directing them to accommodate in the first ship the band of the darwesh pilgrim for Mecca who has assembled around me, the poor man.<sup>29</sup>

### **The Navy**

The navy was the most vital element of the military organization of the Muslim rulers of Bengal. Founded by Ghiyath al-Din Iwad Khalji, the naval force made continuous progress under the succeeding generations of rulers, particularly under Mughith al-Din Tughral, Fakhral – Din Mubarak Shah and Shams al-Din Ilyas Shah who constituted it into a most effective institution of warfare in Bengal. Expert in Boat-making, the Bengalis excelled in sailing as well as in naval fighting.<sup>30</sup>

The author of *Masalik al – Absar*, Ibn Fazl Allah al – Umari, has recorded glowing tribute for the shipbuilding workmanship and the boatmanship of the Bengali people of his time, speaking of their skill in rowing and of the speed of their boat. He observed there Lakhnawti two hundred thousand small but swift-moving boats. If one were to shoot an arrow at the foremost one of them it will fall on the middle one of them on account of their fast speed.<sup>31</sup>

Abul Fazl says the Bengalis make boats of different kinds for purposes of war carriage or swift sailing. For attacking a fort they are so constructed that when run ashore, their prow overtops the fort and facilitates its capture. The skill of the Bengalis in shaping and organizing their war boats most scientifically was the secret of their success over their opponents.<sup>32</sup>

Fully conscious of the great importance of the naval forces, the Bengali rulers always maintained a big fleet of warboats. The writings of Ibn Battuta reflect the naval strength of Fakhr al-Din Mubarak Shah and the decisive role the navy played in the warfare in Bengal. Ibn Fazl Allah al-Umari's record of two hundred thousand boats in Lakhnawti might be an exaggerated number, even though the private boats were included.<sup>33</sup> It however leaves the impression that the rulers of Bengal had a large establishment of the naval force.<sup>34</sup> This idea is confirmed by the evidence of Emperor Jahangir who writes that the Bengali rulers always kept 5000 war boats. Even the Bara Bhuyans of Bengal had a large fleet of war boats.

---

<sup>29</sup> Syed Hasan Askari, *The Correspondence of Two 14<sup>th</sup> century* p-256

<sup>30</sup> Mirza Nathan, *Baharistan- i-Ghayebi*, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p-170

<sup>31</sup> *Ain-i-Akbari*, Abul Fazl, English translation of vol-1, by H. Blochmann, edited by D. C. Phillot, p-132

<sup>32</sup> *Ain-i-Akbari*, Abul Fazl, English translation of vol-1, by H. Blochmann, edited by D. C. Phillot, p-132

<sup>33</sup> *Ain-i-Akbari*, Abul Fazl, English translation of vol-1, by H. Blochmann, edited by D. C. Phillot, p-133

<sup>34</sup> *Ibn Battuta, Travels of Ibn Battuta*, 3vols, translation by H. A. R. Gibb, Cambridge, 1971, p-

From Mirza Nathan's account of the naval battle of Salka, it is known that the grabs and piaras led the attack in the naval engagement.<sup>35</sup> There were in Bengal various types of war-boats, such as kushas, Julia, dhura, Sundara, bajra, khelna, piara, balia, salwar, etc. Different in size and shape, these boats were used for different modes of naval fighting. The grab was the floating battery or gunboat and jailia was the galliot. Some were for the use of cannoniers, archers, lancemen, and other classes of soldiers and naval fighters.

In their swift war boats, the Bengali soldiers, who were noted for their boatman-ships and clever naval tactics enjoyed great superiority over the enemy forces. They appeared suddenly to be superior over enemy forces. They appeared suddenly to surprise the enemy and disappeared before their opponents could prepare themselves for retaliation. Skilled in rowing as well as swimming they were also ingenious in improvising newer tactics of warfare. In appreciating the skill of the Bengali boatmen, Mirza Nathan says that they constructed near Dakchera to resist the imperial forces. It was covered by the river on one side and marshes on the other three.<sup>36</sup>

The boatmanship and naval tactics of the Bengali soldiers accounted for their great advantages in the warfare in Bengal. Merely a zamindar Isa Khan drove away the Mughal Nawara from the waters of East Bengal in 1575 A. D. It was with the help of his swift navy and skilled naval force that he often raided the Mughal possessions in North Bengal.<sup>37</sup>

### **Conclusion**

The patronage of medieval Bengal Sultans the artisan's class built various kind of ships which were used in for communication, trade and maritime warfare. The ships were also used in transporting the troops up and down the rivers and for attacking seashore and riverside. The above description shows that ships of every kind for both civil and military use were made in good number and shipbuilding was a flourishing occupation during the medieval Bengal. Globalization and Capitalism exposed Bengal to the British rulers thereby establishing direct links between India and Europe by the maritime route. These were not confined to commercial activities. There were exchanges of knowledge in various fields including shipbuilding technology.

---

<sup>35</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936

<sup>36</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p-154

<sup>37</sup> Mirza Nathan, Baharistan- i-Ghayebi, 2 vols, trans. M.I. Borah, Gauhati, Government of Assam, 1936 p-156

**HISTORY AND TREND OF SUSTAINABLE AGRICULTURE IN INDIA**  
**Banti Das**

**State Aided College Teacher, Nagar College, Nagar, Murshidabad**  
**Mail: [bantidas957@gmail.com](mailto:bantidas957@gmail.com)**

**Abstract:**

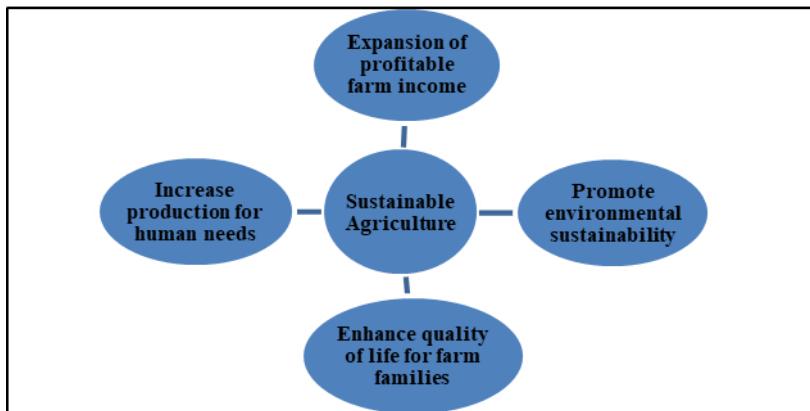
Sustainable agriculture is the efficient process of food production which assures improvement and protection of environment, conservation and best use of natural resources and enhancement of social and economic conditions of farmers. It is the key aspect of environmental sustainability in a country with agriculture based economy like India. It aims to conserve natural resource, minimize agricultural waste and environmental damage and maintain farm yield. The study depicts the emergence and trend of sustainable agriculture in Indian states. The growth of sustainable agriculture is also measured by calculating the decadal growth rate of Agricultural Sustainability Index in India. Though this agriculture process faces various challenges and could not include itself to the mainstream of agriculture, it has great potentiality near future. Proper education, training, and research can make sustainable agriculture a part of conventional production process without endangering natural resource and polluting the environment and can make this system more profitable to the farmers.

**Key words:** Sustainable agriculture, environmental sustainability, farm yield, Agriculture Sustainability Index

**Introduction:**

Agriculture is the art and science of cultivating soil, growing and harvesting crops, domesticating animals, and raising livestock (Husain 45). Agriculture is an important step in the rise of sedentary human civilization. Aside from food, agriculture meets a wide range of human requirements, from cultivating crops to animal husbandry (Singh & Dhillon 7). The growth of population is continued to rise with time, many technologies are being used to boost crop output in order to meet their food and fiber needs. Malthus mentioned that unrestricted population increases in a geometrical ratio and human subsistence in an arithmetic ratio (6). As a result, plant breeding, agrochemicals such as pesticides and fertilizers and technical advancements have all led to increasing crop yields in the contemporary agricultural system, but they have also cause ecological damage. Environmental concerns include contributions to climate change, aquifer depletion, deforestation, antibiotic resistance, and other agricultural pollution. Agriculture is both a cause of and effect to environmental deterioration, such as biodiversity loss, desertification, soil degradation, and climate change, all of which can reduce agricultural productivity and lead environmental unsustainability. As an alternative measure, the concept of sustainable agriculture has been emerged. According to National Agricultural Library, United States Department of Agriculture (USDA), "Sustainable agriculture is farming in such a way to protect the environment, aid and expand natural resources and to make the best use of nonrenewable resources". The purpose of sustainable agriculture is to fulfill society's current food and textile demands while preserving future generations' capacity to meet their own. It tries to make balance between need for food production and preservation of nature. Environmental health, economic profitability and socio-economic equity are three major goals sustainable agriculture strives to include. Everyone participating in the food

system, including producers, processors, suppliers, sellers, customers, and waste management, can contribute to ensure a sustainable agricultural system (UC Sustainable Agriculture Research and Education Program, 2021).



*Source: National Institute of Food and Agriculture, United States Department of Agriculture.*

### **Objectives:**

Main objectives of the study are:

- To know about the sustainable agriculture system prevails in India.
- To describe the growth of sustainable agriculture by measuring the decadal growth in Agricultural Sustainability Index in India.

### **History of Sustainable Agriculture:**

Around 11,000 years ago, cultivation of crops began in India, making it one of the world's oldest regions. The Indian subcontinent is one of the world's eight crop plant-originating centers. Approximately 166 agricultural species and 320 wild relatives of crops evolved here (Pathak et al. 4). Agriculture plays an essential role in the Indian economy by contributing up to 54% of national income in 1950-51, and decreased to around 30% in 1994-95 (Hussain, 313). It supplies food, fodder, and raw materials, so contributing to general economic prosperity. Its good performance throughout time contributes to the creation of additional jobs, lowering poverty, hunger, and malnutrition rates. Population growth and the necessity for foreign currency have forced Indian farmers to expand the farming sector as vegetables and cattle were grown and reared with little regard for how methods of cultivation affected the neighboring ecosystem. As a result, Green Revolution took place to transform the agricultural sector by adopting HYV seeds, mechanized tools, pesticides, fertilizers etc. The Green Revolution is widely regarded as the most significant period in Indian agriculture during the past century. India's input-intensive and technology-focused strategy reduced food imports, preventing famines and assuring food security. Meanwhile the Green Revolution has helped India to achieve self-sufficiency and had a significant influence on farmers but created major environmental issues such as degrading soils, lowering groundwater levels, poisoning water bodies, diminishing biodiversity etc. Crop yields cannot sustain themselves without greater fertilizer use. Smallholders are turning away from farming due to fragmented land holdings and low profit. Climate change science demonstrates that input-intensive agriculture not only contributes but also affected by climate change (Gupta et al. 2)

At the same time, increasing of the influence of modern (industrial) technology on the environment became obvious when pesticides were detected in food chains. Crop nutrients began to gather in streams and underground aquifers. Water resources became exceeded, giving rise to the "spaceship earth" notion. However, the energy "shortage" of the early 1970s was a watershed moment for us. For the first time, we were keenly aware that the natural assets of the planet are finite (Harwood 11). Sustainable agriculture is an agricultural system that aims to provide resources for current human populations while preserving the planet's capacity to support the next generation. It has grown from three distinct viewpoints: as a method of production for food self-sufficiency, as a stewardship idea, and as a means of sustaining rural communities. The concept of sustainability is not new in agricultural practice which is now thought to have been part of European agricultural thinking and practice for hundreds of years, until the mid-nineteenth century (MacRae 2).

Sustainable agriculture is more than simply a trend; it is a fundamental rethinking of how we grow our food. This represents a significant shift in farming techniques, emphasizing the importance of achieving long-term ecological balance, conserving essential resources, and prioritizing the well-being of agricultural communities (Kumar 1). Achieving sustainability in Indian agriculture, which accounts for around 126 million hectares of farmland and employs 48% of the country's 1.35 billion people, is essential to reaching global sustainable development targets (Suresh et al. 2). Since 2015-16, the government has promoted sustainable agriculture by encouraging organic farming in the country via projects such as Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER). Both programs give comprehensive support to organic farmers, including production, processing, certification, marketing, and post-harvest management. PKVY is being introduced in all states except the North Eastern States (Reddy 6). As catastrophic climatic events like droughts, floods, and desert locust infestations become more common, farmers are demonstrating resilience and the potential of sustainable agriculture.

The Council on Energy, Environment and Water (CEEW) has identified 30 sustainable agriculture practices (SAPs) prevalent in India. Among them, 15 main sustainable agricultural processes are described below:

**Natural Farming** is a chemical-free farming approach based on Indian heritage but enhanced with current knowledge of ecology, resource recycling, and on-farm resource efficiency. It is regarded as an agro-ecology based diversified agricultural system that incorporates crops, trees, and livestock while preserving functional biodiversity. It is primarily focused on on-farm biomass recycling, with a strong emphasis on biomass mulching, the utilization of on-farm cow dung-urine formulations, soil aeration, and the elimination of all synthetic chemical inputs. Masanobu Fukuoka, a Japanese scientist and philosopher, is credited with popularizing natural farming. In India, famous agriculturalist Subhash Palekar has helped spread the method throughout the country. On a larger scale, the technique originated in Karnataka. Many states like Andhra Pradesh, Karnataka, Himachal Pradesh, Gujarat, Uttar Pradesh, and Kerala have previously adopted natural farming and built successful models. It presently covers more than ten lakh hectares in India. Various crops like cereals, millets, cotton, fruits, vegetables, and spices are cultivated under natural farming.

**Organic farming** restricts the use of synthetic agro-inputs like fertilizers and pesticides. Organic materials (e.g. crop residues, animal residues, legumes, bio-pesticides) are used

to maintain soil productivity and fertility, as well as manage pests in a sustainable and environmentally friendly manner. Sir Albert Howard, a British agriculturist and scientist who worked in India in the early twentieth century, was a pioneer in organic farming. Organic farming is used to grow many crops, including grains, millets, cotton, fruits, and vegetables. Organic farming is used to grow many crops, including grains, millets, cotton, fruits, and vegetables. Madhya Pradesh, Kerala, Sikkim, Karnataka, Maharashtra, Rajasthan are leading states in organic farming ( Raj).

**Agroforestry** refers to the intentional integration of trees, bushes, bamboos, palms on land with crops and animals in various spatial or temporal configurations. Agriculture and forestry interconnections encompass farmers, woody perennials, forests, and livestock on different scales. It is a practical and low-cost method of adopting various forms of integrated land management, and it contributes to a green economy by encouraging long-term, sustainable, and regenerative forest management, particularly among small-scale farmers. Following an agroforestry seminar in Imphal, India in May 1979, the ICAR started an All India Coordinated Research Project on Agroforestry in 1983, spanning 20 centers across the country (Singh, 134). Almost all Indian states have started adopting this farming system, Uttar Pradesh, Maharashtra and Rajasthan are three leading states in coverage of area in agroforestry. There are 20 types of agroforestry system practiced across India. They are: agri-silviculture, agri-horticulture, agri-silvi-horticulture, agri-silvi-pasture, boundary plantation, block plantation, energy plantation, alley cropping, silvi-olericulture, horti-pasture, horti-olericulture, silvi-pasture, forage forestry, shelter belts, wind breaks, live fence, silvi or horti-sericulture, horti-apiculture, aqua-forestry and homestead.

**System of Rice Intensification (SRI)** is a climate-conscious agro-ecological method that improves crop output by managing plant, soil, water, and nutrients. The state agricultural universities in Tamil Nadu and Andhra Pradesh promoted SRI research in 2002-2003. SRI techniques were gradually expanded in India due to yield-loss concerns about SRI principles. Andhra Pradesh, Tamil Nadu, Karnataka, West Bengal, Pondicherry, Tripura, Bihar, Chhattisgarh, Uttar Pradesh, Punjab, Gujarat, Orissa, and Jharkhand are involved in SRI system.

**Precision farming (PF)** is a farm management strategy that employs technological innovations to ensure that crops and soil receive precisely what they require for optimal health and productivity. In India, precision farming has yet to be integrated in main agricultural system. The ICAR National Rice Research Institute (NRRI) demonstrated the potential for low-cost PF technologies in India (NRRI). The Tamil Nadu Precision Farming Project (TNPPF), which began in 2004-2005, was instrumental in spearheading drip irrigation as a part of this system.

**Conservation Agriculture** has been proven to enhance biological processes, reduce tillage, and to optimise the use of external inputs to prevent biological interruption. It entails immediate sowing of crops with minimal soil disturbance following the harvest of the preceding crop. This requires slashing or rolling the weeds or last crop remnants, and then directly planting through the mulch without plough. Major states of Indo-Gangetic region like Punjab, Haryana, Uttar Pradesh, Bihar and West Bengal are gradually adopting this system.

**Crop rotation** is the technique of growing a variety of crops in the same area across a number of growing seasons, whereas Intercropping is the process of growing multiple crops simultaneously in the same area during a specific growing season. Crop rotation is an important traditional farming system implemented in nearly every state in the

country. Intercropping is widely used in India's semi-arid and arid tropical regions. It is more prevalent in Karnataka, Telangana, Tamil Nadu, Maharashtra, Gujarat, and Madhya Pradesh, although it is also prevalent in many other states.

**Cover crops** are crops that are planted to protect the soil rather than to be harvested. Cover crops can help controlling soil erosion, contribute organic matter, supply nitrogen, suppress weeds, and combat pests. Mulching involves covering the soil surface with organic or synthetic materials and retains soil moisture, reduces runoff, and boosts soil production. They are now widely used in conservation agriculture. In rainfed areas of eastern India, farmers produce short-duration pulses as a second crop or cover crop.

**Integrated pest management (IPM)** system is a suitable technique of controlling pest populations by cultural, biological and chemical measures to provide an environmentally sustainable method of crop disease management. In 1974-75, India began researching IPM for two crops: rice and cotton. In 1985, India declared IPM to be official government policy. Maharashtra, West Bengal, Kerala and Karnataka are much more advance in adopting this IPM system.

**Vermicomposting** is a biotechnological process rearing and utilizing earthworms to convert biomass waste like vegetable waste or food waste into high-quality compost. In 1985, Maharashtra Agricultural Biotechs was established to initiate the process of vermicomposting which currently producing 5000 tonnes of vermicompost every year (Jambhekar). Assam, Maharashtra, Madhya Pradesh, Karnataka are leading states in vermicomposting.

**Bio-Dynamic Agriculture (BDA)** or Bio-Dynamic Farming is a participative and responsible farming method that collaborate soil, plants, animals, people, and the environment. Bio-dynamic farming handles animals, crops, and soil as an integrated system, utilizing old systems while also developing new indigenous breeds and categories. Gujarat, Madhya Pradesh, Uttarakhand, Uttar Pradesh, Andhra Pradesh, Kerala, Punjab, Karnataka, Tamil Nadu, Telangana, West Bengal, and Assam are some of the states with the most biodynamic farms.

**Integrated farming systems (IFS)** combine many components, including horticulture, livestock, aquaculture, poultry/ducks, apiculture, and mushroom cultivation. This approach combines advanced agronomic management technologies with the basic principles of lowest competition and maximal complementarity. Kerala and Tamil Nadu have already adopted projects to develop this process.

**Contour farming** involves ploughing and planting along a contour line, the imaginary line joins the land of equal height horizontally across a hill, rather than vertically. Contour farming has been proposed as a significant mitigation approach for reversing land degradation in agro-climatic zones such as hilly areas, Indo-Gangetic plains, arid and semi-arid areas, and southern peninsular India.

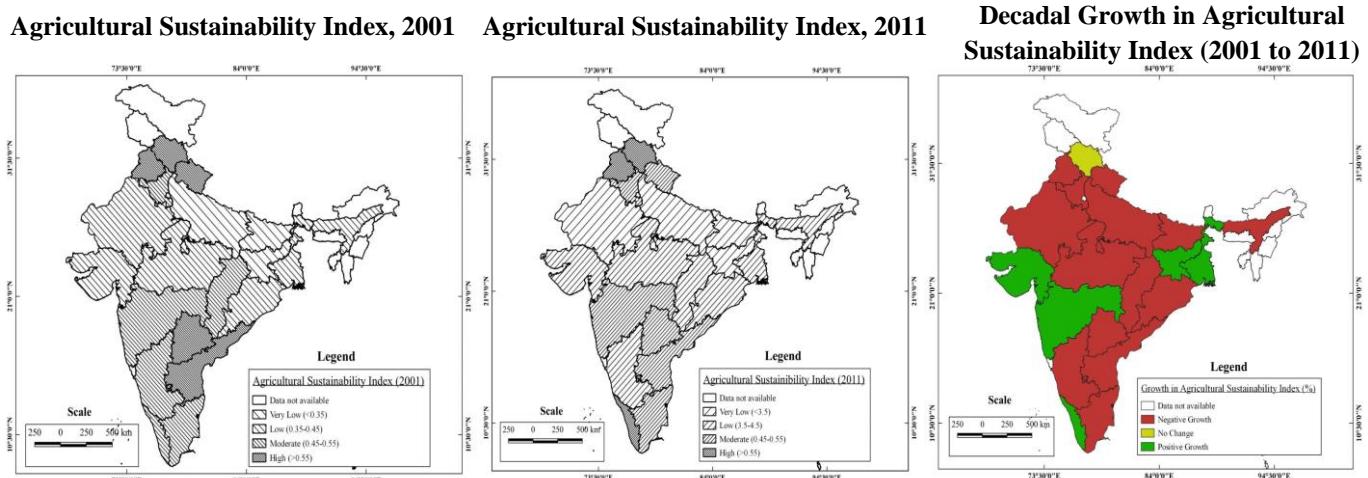
**Permaculture** is a sustainable agriculture system that takes inspiration from nature to create collaborative farming systems based on crop diversity, resilience, natural productivity, and sustainability. In 1986, Bill Mollison led the way in introducing permaculture to India, conducting workshops for farmers and organizations interested in learning more about this agricultural system. The first permaculture demonstration farm was constructed in 1987 in Andhra Pradesh's Zahaeerabad district with the cooperation of the Deccan Development Society, a development NGO. Permaculture is practiced in almost all states mainly by small and marginal farmers in India.

**Floating farming** is a method of producing food in locations that have been waterlogged for an extended period. It is mostly focused on adapting agriculture to increase or

extended flooding and creates agricultural land in wet areas. There is no policy or framework governing floating farming in India.

### **Agricultural Sustainability Index in India:**

Sustainability refers to the ability to maintain or support a process continuously over time. The three main components as well as pillars of sustainability are environmental, economic and social. Environmental sustainability is the ability to maintain ecological balance in our planet's natural environment while conserving natural resources for the benefit of current and future generations. Economic sustainability refers to policies that promote long-term economic growth while minimizing negative impacts on the community's social, environmental, and cultural aspects. Social sustainability refers to a community's ability to set up structures and procedures that not only suit the demands of its current members, but also support future generations' ability to maintain a healthy community. The Agricultural Sustainability Index is measured by the indices of all these three indicators as it is the mean value of these three indicators (Suresh et al. 4).



*Author.*

### **Decadal Growth Rate of Agricultural Sustainability Index in India:**

Here (Map No.-3), decadal growth rate of Agricultural Sustainability Index of Indian states has been calculated from 2001 to 2011. Himachal Pradesh, Haryana, Telangana and Andhra Pradesh and Uttarakhand states had high ( $>0.55$ ) agricultural sustainability index, whereas Bihar, Jharkhand and Rajasthan had very low ( $<0.35$ ). In the year 2011, Himachal Pradesh, Punjab and Kerala scored high ( $>0.55$ ) and Bihar, Uttar Pradesh, Jharkhand and Rajasthan scored very low ( $<0.35$ ) in Agricultural Sustainability Index in India. The decadal growth rate from the year 2001 to 2021 shows that positive growth rate too place in Maharashtra, Gujarat, Kerala, West Bengal and Jharkhand, no change found in Himachal Pradesh and the other states shows negative growth in Agricultural Sustainability Index. Growth rate is very high in Kerala (13.04%), Maharashtra (12.96%) and Gujarat (12.82%). States without shades indicates data unavailability. So, it can be stated that to carry on sustainable development through sustainable agriculture in India, positive growth in agricultural sustainability index is very much needed in Indian states which can only be attain by balancing between environmental, economic and social elements.

### **Challenges and Future Prospect:**

Sustainable agriculture has a number of issues across environmental, economic, and social dimensions. Key issues include inefficient resource management, the effects of climate change, over-reliance on chemical inputs, land degradation, genetic diversity loss, water scarcity, market access issues, economic viability concerns, knowledge gaps, insufficient policy support, and the need for consumer awareness. Addressing these difficulties requires a multifaceted approach that includes farmers, policymakers, academics, and consumers in order to promote sustainable practices and ensure an environment resilient food system. The future prospects of sustainable agriculture in India are promising, given the increasing awareness of environmental issues, the need for food security, and the government's emphasis on sustainable development. The Indian government has promoted sustainable agriculture techniques through a variety of programs and initiatives. The National Mission for Sustainable Agriculture (NMSA) and Paramparagat Krishi Vikas Yojana (PKVY) aim to promote organic farming, water efficiency, and biodiversity conservation. Adopting sustainable techniques will help raise productivity, enhance farmer livelihoods, and make India's agriculture industry more resilient and ecologically balanced.

### **Conclusion:**

In conclusion, it can be stated that the outlook for sustainable agriculture in India is positive, with a convergence of forces favoring ecologically responsible and economically viable farming practices. This transition is being driven by government initiatives, technical improvements, and an increasing demand for environment friendly products. Precision farming, agro-ecological methods, climate-smart strategies, and effective water management are helping farmers adapt to climate change and resource restrictions. While obstacles remain, an integrated strategy involving several stakeholders prepare India for a sustainable, productive, and environment friendly agricultural future.

### **References:**

1. Gupta, Niti, Shanal Pradhan, Abhishek Jain, and Nahya Patel. Sustainable Agriculture in India 2021: What We Know and How to Scale Up. New Delhi: Council on Energy, Environment and Water, 2021, p-2.
2. Harwood, Richard R. A History of Sustainable Agriculture. Sustainable Agricultural Systems, edited by Clive A. Edwards, Rattan Lal, Patrick Madden, Robert H. Miller and Gar House. St. Lucie Press, 1990, p-11.
3. Husain, Majid. Systematic Agricultural Geography. Jaipur: Rawat Publications, 2007, p-45.
4. Jambhekar, Henamgee. Vermiculture in India. Maharashtra Agricultural Biotechs, Pune, 2020. <<http://www.fadr.msu.ru/rodale/agsieve/txt/vol7/art3.html>>
5. Kareemulla, K, R. Venkattakumar and Manoj P. Samuel. An analysis on agricultural sustainability in India. Current Science, 112 (2582), 2017, p-265.
6. Kumar, Shashank. Rise of Sustainable Agriculture Amidst Modern Challenges. Outlook Planet, 2023.<<https://planet.outlookindia.com/opinions/evolution-of-sustainable-farming-practices-from-traditional-news-416028#:~:text=Sustainable%20agriculture%2C%20a%20holistic%20and,security%20and%20safeguarding%20the%20planet.>>.
7. MacRae, Rod. Strategies for overcoming the barriers to the transition to sustainable agriculture. Ecological Agriculture Project, McGill University, 1990, p-1.
8. Malthus, Thomas. An Essay on the Principle of Population. Electronic Scholarly Publishing, 1998, p-6.

9. National Agricultural Library, United States Department of Agriculture (USDA), United States.
10. Pathak H, JP Mishra and T Mohapatra. Indian Agriculture after Independence. Indian Council of Agricultural Research, New Delhi 110 001, 2022, p- 4.
11. Raj, Sakshi. History of Organic Farming in India. Times of Agriculture: A Resonance in Agriculture. Monthly Agriculture e-magazine, October, 2023. E-ISSN: 2582-6344
12. Reddy, A Amarender. Impact Study of Paramparagat Krishi Vikas Yojana. National Institute of Agricultural Extension Management (MANAGE), 2017, Hyderabad-500030, Pp.210.
13. Singh, G.B. Agroforestry in the Indian subcontinent: past, present and future. Agroforestry: A Decade of Development, edited by Howard A. Steppler and P.K. Ramachandran Nair. International Council for Research in Agroforestry, Nairobi, 1987, p-134.
14. Singh, Jasbir and S S Dhillon. Agricultural Geography. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2005, p-7.
15. Suresh A, P. Krishnan, Girish K. Jha and A. Amarender Reddy. Agricultural Sustainability and Its Trends in India: A Macro-Level Index-Based Empirical Evaluation, A Macro-Level Index-Based Empirical Evaluation. Sustainability, 2022, 14, 2540 p-2. <<https://doi.org/10.3390/su14052540>>
16. UC Sustainable Agriculture Research and Education Program, 2021. "What is Sustainable Agriculture?" UC Agriculture and Natural Resources. <<https://sarep.ucdavis.edu/sustainable-ag>>

**Introduction about the author:** Banti Das, author of the paper titled "**History and Trend of Sustainable Agriculture in India**" is a State Aided College Teacher (SACT) of Nagar college (department of Geography), Nagar, Murshidabad. She has 5 years of teaching experience in this college and one research paper titled " Gender Discrimination in Agricultural Sector: A Study on Murshidabad District, West Bengal, India" published in International Journal of Social Science and Economic Research (IJSSER).

**Educational background:** The author graduated from Nagar College, Nagar, Murshidabad in the year 2014 and got masters degree from University of Kalyani, Kalyani, Nadia in the year 2016. She has qualified National Eligibility Test (NET) in July, 2018 and National Eligibility Test (NET) with JRF in December, 2018 conducted by University Grant Commission (UGC), New Delhi, India.

## **Exploring the Role of Artificial Intelligence in Library Services: A Comparative Analysis**

Dr. Reshma Sarkar, Librarian, Budge Budge College, Budge Budge, Kolkata – 700137  
email : [sreshmi2009@gmail.com](mailto:sreshmi2009@gmail.com).

**Abstract:** The integration of artificial intelligence (AI) in libraries has revolutionized the way librarians deliver services to patrons. AI applications in libraries include chatbots, recommendation systems, digital preservation, data analytics, and natural language processing, among others. This article aims to examine the impact of AI on library services.

**Keywords:** Artificial intelligence, libraries, chatbots, recommendation systems, digital preservation, data analytics, natural language processing, mixed-methods

**Introduction:** Artificial Intelligence (AI) is rapidly gaining popularity and is being implemented in many industries, including libraries. The use of AI in libraries can significantly enhance library services and help librarians work more efficiently. Artificial Intelligence (AI) has the potential to revolutionize the way libraries operate and serve their users. The use of AI in libraries can help enhance services, improve efficiency, and provide personalized experiences for library patrons. This article aims to explore the role and impact of AI in libraries, including its benefits and challenges. The use of AI in libraries can help enhance services, improve efficiency, and provide personalized experiences for library patrons. Basically, it is a technology that can be used in many ways in libraries. One of the most common uses of AI is in the form of chatbots and virtual assistants. These systems can help users get quick answers to their questions and provide basic information about library services. Another use of AI in libraries is in the form of recommendation systems. These systems can suggest books or other materials to users based on their reading history or preferences. Predictive analytics is another application of AI in libraries. This technology can help libraries better understand user behaviour and preferences, and use that information to improve services and collections.

### **What is AI?**

AI is a branch of computer science that aims to create intelligent machines that can perform tasks that typically require human intelligence, such as recognizing speech, making decisions, and solving problems. AI systems can be programmed to learn from experience and improve their performance over time. The field of AI encompasses several

subfields, including machine learning, natural language processing, and computer vision.

### **Overview of Artificial Intelligence**

Artificial Intelligence (AI) is rapidly transforming the world we live in, and its impact is being felt in virtually every industry. AI refers to the development of computer systems that can perform tasks that would normally require human intelligence, such as recognizing speech, making decisions, and even learning from experience. One of the areas where AI has the potential to make a significant impact is in the field of healthcare. AI can be used to improve patient outcomes, increase efficiency, and reduce costs. For example, AI-powered tools can help doctors make more accurate diagnoses, predict which patients are at risk for certain conditions, and even develop personalized treatment plans. Another area where AI is already being used is in the field of finance. AI-powered algorithms can analyze vast amounts of financial data and identify patterns that would be difficult for humans to detect. This can help financial institutions make better investment decisions, identify fraud, and even develop new products and services. AI is also being used in the field of transportation. Self-driving cars, which use AI to navigate roads and make decisions, are already being tested on public roads in several countries. AI is also being used to optimize traffic flow, improve public transportation, and even develop new modes of transportation such as flying taxis. However, as with any new technology, there are also potential risks and challenges associated with AI. One of the biggest concerns is the potential for AI to replace human workers. While AI can certainly perform many tasks more efficiently than humans, it is unlikely that it will completely replace human workers. Instead, AI is more likely to augment human workers and allow them to focus on tasks that require human intelligence, such as creativity and critical thinking. Another concern is the potential for AI to be used in ways that are unethical or even harmful. For example, AI-powered weapons could potentially make it easier for countries to engage in warfare. Additionally, there are concerns about the potential for AI to be used to monitor and control populations, leading to issues around privacy and civil liberties. Despite these concerns, the potential benefits of AI are too significant to ignore. By developing effective strategies for implementing AI and addressing potential risks, we can harness the power of this technology to transform our world for the better.

## **Current Applications of AI**

AI is already being used in a variety of industries and applications. Here are some examples:

1. Healthcare: AI is being used to analyze medical images and help diagnose diseases, such as cancer. It can also be used to monitor patients and predict the likelihood of adverse events, such as heart attacks.
2. Transportation: Self-driving cars rely on AI to perceive their environment and make decisions about how to drive safely. AI can also be used to optimize traffic flow and reduce congestion.
3. Finance: AI is being used to detect fraud and make investment decisions. It can also be used to provide personalized financial advice to individual customers.
4. Retail: AI can be used to personalize product recommendations, optimize inventory management, and improve the customer experience.
5. Education: AI can be used to provide personalized learning experiences for students, identify areas where students need additional help, and even grade assignments.
6. Libraries: AI can improve the user experience.

## **Future Potential of AI**

The potential applications of AI are virtually limitless. Here are some areas where AI is expected to have a significant impact in the future:

1. Environmental Sustainability: AI can be used to monitor and manage environmental resources, such as air and water quality. It can also be used to optimize energy consumption and reduce waste.
2. Manufacturing: AI can be used to optimize production processes, reduce waste, and improve quality control.
3. Agriculture: AI can be used to optimize crop yields, monitor soil quality, and reduce the use of pesticides.
4. Space Exploration: AI can be used to automate spacecraft operations, analyze data from space probes, and even assist with the design of spacecraft.

## **AI in Libraries – Uses of AI in libraries**

The use of AI in libraries has many benefits. One of the main benefits is that it can improve the user experience. AI systems can provide quick and accurate answers to user questions, which can help reduce frustration and improve satisfaction. Additionally, AI can help libraries better understand user behaviour and preferences, which can help improve services and collections. Another benefit of AI in libraries is that it can improve efficiency. Chatbots and virtual assistants can help reduce the workload

of library staff, while predictive analytics can help libraries make more informed decisions about resource allocation.

### **Benefits of Libraries**

Artificial Intelligence (AI) has several potential applications in libraries, including improving user experiences, increasing efficiency, and providing personalized services. Here are some of the ways in which AI is currently being used in libraries:

1. **Recommendation Systems:** AI-powered recommendation systems can help libraries provide personalized services to their users. These systems use machine learning algorithms to analyze user behaviour and provide recommendations for books, articles, and other materials based on their interests.
2. **Predictive Analytics:** Predictive analytics can help libraries optimize their operations and make data-driven decisions. For example, libraries can use predictive analytics to analyze circulation data and determine which books are likely to be checked out in the future.
3. **Digital Preservation:** AI can be used to preserve digital collections and ensure that they remain accessible to future generations. Machine learning algorithms can analyze and tag digital materials, making them easier to search and retrieve.
4. **Text Analysis:** AI can be used to analyze large volumes of text, such as articles and manuscripts, to extract insights and identify patterns. Libraries can use this technology to improve their cataloguing and classification systems, making it easier for users to find the materials they need.
5. **Library Cataloguing and Classification:** AI can be used to improve the efficiency and accuracy of library cataloguing and classification. Machine learning algorithms can analyze text and images to automatically assign subject headings, making it easier for users to find relevant materials. AI can also be used to identify relationships between different items in the library catalogue, such as author connections or citation relationships.
6. **Digital Preservation:** AI can be used to preserve digital collections and ensure that they remain accessible to future generations. Machine learning algorithms can analyze and tag digital materials, making them easier to search and retrieve. AI can also be used to enhance the discoverability of digital materials, such as by suggesting related content or highlighting important features of the materials.
7. **Analytics and Reporting:** AI-powered analytics and reporting tools can help academic libraries make data-driven decisions about library operations and services. For example, predictive analytics can be used to analyze circulation data and determine

which books are likely to be checked out in the future. This can help libraries make informed decisions about purchasing, shelving, and weeding materials.

8. Accessibility: AI can be used to improve accessibility for library patrons with disabilities. For example, AI-powered image recognition technology can automatically generate alt text descriptions for images, making them accessible to people who are blind or visually impaired. AI can also be used to generate closed captions for videos, making them accessible to people who are deaf or hard of hearing.

### **Challenge on AI**

Despite the many benefits of AI in libraries, there are also challenges associated with its implementation. One of the main challenges is the need for adequate staff training. Library staff will need to be trained on how to use AI systems and how to interpret the data they generate. Additionally, there are ethical considerations associated with the use of AI in libraries, particularly around issues of privacy and data security. Libraries will need to ensure that they are using AI in a responsible and ethical manner.

**Literature Review:** This literature review aims to synthesize empirical studies investigating the application of artificial intelligence uses in libraries. Isaiah Michael Omame, Juliet C. Alex-Nmecha (2020) explain that artificial Intelligence (AI) is revolutionizing library operations, offering advanced capabilities that using in human intelligence. Despite concerns about potential alienation of librarians from users, AI enhances rather than replaces human roles. Its applications include expert systems for reference services, book reading robots, and virtual reality for immersive learning. AI optimizes library functions, improves service delivery, and ensures libraries remain relevant in an evolving digital society. Sanjay Kumar Jha (2023) said that AI's potential in enhancing library services despite challenges like funding, librarian attitudes, and technical skills. It emphasizes AI's capacity to propel libraries forward while pointing out cost-effective deployment options for various applications. Rajesh Kumar Das (2024), Mohammad Sharif Ul Islam emphasized that their study reviews 32 articles from databases like Web of Science, Scopus, LISA, and LISTA, exploring the application of AI and ML in libraries. It finds a focus on theoretical works and some implementation projects in the LIS domain. The findings suggest growing interest in technology-oriented approaches and offer insights for future innovation in AI and ML within library contexts. Amanda Wheatley, Sandy Hervieux (2019) clarify that the study examined how academic libraries are engaging with artificial intelligence (AI) through an environmental scan. It reviewed scholarly articles, university libraries' plans, and programming to assess AI integration. Most institutions showed limited response or awareness of the AI trend, but

some were establishing AI hubs. The study aimed to understand the evolving role of librarians in an AI-driven future. Takashi Harada (2017) summarised that Robotics and artificial intelligence (AI) technologies are becoming increasingly prevalent in Japanese libraries. Traditionally, libraries have utilized automated systems like auto book circulation and automated storage and retrieval systems (ASRS). However, recent years have seen the introduction of various types of robots, including humanoid robots like Pepper by Softbank, which guides visitors in numerous libraries with plans for further expansion. Beyond humanoid guides, libraries employ animal-type robots and those working behind the scenes. For instance, auto-tracking book tracks facilitate return processing without manual intervention, while the HAL robot suit assists in lifting heavy bookcases, reducing strain on workers' backs. Moreover, AI technology aids in reading assistance and programming classes, such as the "KOKORO" Saver game, which recommends children's books based on their interests, and Kindai University library's analysis of social media content to suggest relevant books to students. Although the integration of robots in libraries is still evolving, the trend indicates a growing reliance on robotics and AI to enhance library services. Elizabeth Tait and Cameron M. Pierson, (2022) examines the growing importance of AI and robots in library and information science (LIS) and their potential to shape the digital transformation of the profession. The study evaluates the challenges and opportunities for LIS education in this context by reviewing the curriculum of five ALIA-accredited LIS courses in Australia and ALIA foundation knowledge documentation. Through content analysis, it identifies the framing of AI, robotics, and related themes in the curriculum. Findings reveal limited mention of AI and no mention of robotics in the subjects examined. However, opportunities for the inclusion of these topics within ALIA foundation knowledge categories are identified, suggesting the need for integration into LIS professional education to address future skills. The literature review reveals that AI is increasingly integrated into library operations, spanning applications like chatbots, virtual assistants, recommendation systems, and predictive analytics. While AI offers numerous benefits such as enhanced user experiences and operational efficiency, its implementation poses challenges, notably in staff training and ethical considerations. Despite these hurdles, AI holds the potential to revolutionize libraries, elevating service quality and user experiences. However, libraries must address concerns like privacy and ensure comprehensive staff training to harness AI effectively. By navigating these challenges and crafting robust AI strategies, libraries can optimize their services and effectively cater to patrons' needs.

## **Future Potential of AI in Academic Libraries**

The potential applications of AI in academic libraries are vast and varied. Here are some areas where AI is expected to have a significant impact in the future:

1. Learning Analytics: AI-powered learning analytics can help academic libraries better understand how students are using library resources and provide targeted support to improve student success.
2. Collaboration: AI can be used to facilitate collaboration among researchers and scholars, such as by recommending potential collaborators or identifying relevant research groups.
3. Collection Development: AI can be used to identify gaps in the library's collections and suggest materials for purchase. It can also be used to identify new and emerging trends in publishing and media.
4. Digital Scholarship: AI can be used to support digital scholarship by providing new tools for text and data mining, visualization, and analysis.

**Conclusion:** The integration of AI in libraries presents a transformative opportunity to revolutionize services and cater to patrons with personalized experiences. Despite the challenges associated with AI implementation, such as privacy concerns and ethical considerations, these obstacles can be overcome through adequate staff training and a responsible approach to AI use. Overall, the study underscores the potential of AI to reshape library services while highlighting the importance of addressing associated challenges.

Additionally, AI stands poised to revolutionize various aspects of society, from healthcare to space exploration, by enhancing efficiency, accuracy, and decision-making. However, ethical considerations must be carefully weighed to ensure responsible and transparent AI use for the benefit of all. In academic libraries, AI holds promise for delivering personalized services, enhancing research support, improving cataloguing and classification, refining analytics, and reporting, and fostering greater accessibility. By conscientiously navigating the ethical implications of AI, academic libraries can harness its potential to advance education and research, paving the way for a brighter future.

## **Reference:**

1. Omame, Isaiah Michael, and Juliet C. Alex-Nmeha. "Artificial intelligence in libraries." *Managing and adapting library information services for future users*. IGI Global, 2020. 120-144.
2. Jha, Sanjay Kumar. "Application of artificial intelligence in libraries and information centers services: prospects and challenges." *Library Hi Tech News* 40.7 (2023): 1-5..

3. Das, Rajesh K., and Mohammad S. Islam. "Application of Artificial Intelligence and Machine Learning in Libraries: A Systematic Review." *ArXiv*, 2021, /abs/2112.04573. Accessed 18 Feb. 2024.
4. Wheatley, Amanda, and Sandy Hervieux. "Artificial intelligence in academic libraries: An environmental scan." *Information Services & Use* 39.4 (2019): 347-356.
5. Harada, Takashi. "Robotics and artificial intelligence technology in Japanese libraries." (2017).
6. Tait, Elizabeth, and Cameron M. Pierson. "Artificial intelligence and robots in libraries: Opportunities in LIS curriculum for preparing the librarians of tomorrow." *Journal of the Australian Library and Information Association* 71.3 (2022): 256-274.
7. Smith, John. *Artificial Intelligence: A Comprehensive Guide*. Penguin Books, 2020.
8. "The Impact of Artificial Intelligence on Society." *Journal of Artificial Intelligence Studies*, vol. 25, no. 2, 2018, pp. 45-60.
9. Johnson, Mark. "Understanding Artificial Intelligence." *TechWorld*, TechMedia, 15 Sept. 2021, www.techworld.com/article/3564321/understanding-artificial-intelligence.html.
10. Advancements in Artificial Intelligence." *Proceedings of the International Conference on Artificial Intelligence*, 10-15 Aug. 2019, San Francisco, Springer, 2019, pp. 35-48.

## **Enlightenment in Bengal and Growth of Philosophy : Contribution of Rabindranath Tagore, Swami Vivekananda and Sri Aurobindo**

Dr. Sangita Gautam  
Assistant Professor  
Department of Philosophy  
Michael Madhusudan Memorial College, Durgapur

### **Abstract:**

Enlightenment is often associated with social, political and cultural revolutions. Enlightenment in Bengal was based on intellectual and cultural progress and the essence of this progress was to improve human society. Enlightenment in Bengal witnessed unparalleled growth in Philosophical realm. In this paper I shall discuss the philosophical thoughts or views of Rabindranath Tagore, Swami Vivekananda and Sri Aurobindo. They promoted Philosophy from Theology to independent discipline of thought which could challenge the old stream of thought and composed a new philosophical domain both of theory and practice. All of them struggled for expansion. Perfect liberty and expansion was the soul of their Philosophical thought. Tagore, Aurobindo and Vivekananda – focused on Expansion, but their approaches were distinct, extraordinary and significant that contributed to the Enlightenment in Bengal.

Key words: Enlightenment, Tagore, Vivekananda, Aurobindo, Socio-political-cultural-spiritual revolution.

### **Background:**

#### **Rabindranath Tagore (1861-1941):**

According to Rabindranath Tagore, human destiny is the realisation of unity – realization of Divinity. It is the realisation of the Universal within human being. The aim of Philosophy is the 'Vision of the real'. In this respect, reality embedded in the realization of man's unity with the Divine; in other words, the realization of one's true nature. It is possible for individuals to realize the Divine self at once. For that, one has to begin his journey with love, sacrifice, sincerity, innocence. Self-denial is essential to realize the presence of Divinity in human beings. To explain Self-denial of individuals for self-realisation, Rabindranath Tagore used the analogy of 'the oil and the lamp'. So long as the lamp keeps its oil confined in its store there is no light. The lamp sacrifices the store of its oil, in this way it functions; in its sacrifice lies the reality of the lamp. This is the Upanishadic view of Divine life that is the life of 'self-denial for self-realisation'. Similarly, when the individual self sacrifices its narrow aspects of finite existence human beings achieve their true nature – Divinity. Rabindranath Tagore said in *The Religion of Man* – "Religion consists in the nature of man, the eternal, and to have faith in them." He also focused on 'self-transcendence'. Through this aspect of human life we can conquer evils and the problem of evils. This is the " Surplus in Man" – the capacity of self-denial for self-realisation, the ability to love, sacrifice for the welfare of the entire human society, the creative force in man and finally, the ability to transcend the finite aspects of individual self. All these constitute the Infinite, Spiritual aspect of human beings which make sense of Jivan -Devata. Realisation and affirmation of the Infinite Being present in all things of the world is the product of constant practice. But, according to Tagore, unfortunately a section of our countrymen consider this to be only

a doctrine. Rabindranath Tagore taught us about “ Soul-Consciousness”, “World-Consciousness”.

For Tagore, Humanism teaches us to prepare ourselves for social responsibilities, “for sharing the burdens of our fellow-beings”, “to gain by giving away, and not to be greedy”. If we practice humanism, if we prepare ourselves in the light of Tagore’s Philosophy, it will be easier for us to expand the consciousness of our unity with all. Tagore’s soul-consciousness forged him to participate in the Anti-partition movement in Bengal during 1905. He could realize unity with all, he could feel world-consciousness when he decided to renounce his British Knighthood in protest against the inhuman cruelty of the British Army to the people of Punjab in 1919 as ‘a symbolic act of protest’ after the Jallianwala Bagh Massacre which took place on 19<sup>th</sup> April, 1919.

Tagore analyzed his philosophical view with the analogy of a child’s movement. In our daily life we often observe a child who tries to walk. In his process of walking he falls, but whenever he falls he gets up, he never stops walking. Eventually this process teaches him to learn to walk. According to Tagore, Evil is unable to stop the progress of life. The direction of progress is from evil to good. Evils are aids for the attainment of Good. Evils are facts, real but they are not absolute truth. Finite individual human being is confined to his selfish, narrow, egoistic self and cannot judge the true nature of evil that is essentially impermanent. Unity, love, Beauty, Harmony – these are the true nature of truth. He applied his Philosophy of life during the struggle for Independence, Anti-Partition movement in Bengal in 1905 while Tagore celebrated Rakhi Bandhan Utsav with the people of Bengal. Divinity of man is not merely a theoretical issue. He truly believes that through humanistic thoughts, attitudes and actions we can make it visible. He was against all sorts of inequality in society. His Brahmacharya ashrama in Santiniketan was open to all irrespective of caste and religion. These are indicative of the intensely human disposition of the poet-philosopher.

#### **Swami Vivekananda (1863-1902) :**

Here I must note Vivekananda vision on struggle for Expansion. He believes that the universe is struggling to expand, struggling to gain liberty. Struggle for expansion , struggle to attain freedom are not to avoid suffering or pleasure. This struggle for expansion must go on until and unless perfect liberty is attained. ( Swami Vivekananda: *The Complete Works of Swami Vivekananda*)

A Universal religion must open its gates to everyone, it should admit that no one is born with this or that religion. Universal religion must give satisfaction to every religious sects. The core or essence of Universal religion is that it should recognize that there may be various and different ways of approach to the religious object. For Swamiji, one word is enough to explain Universal Religion that is acceptance, positive acceptance. This is why he says that the believer of Universal Religion has to be open minded and must be prepared to learn from the scriptures of all religions. And this religion is attained by what we, in India, call Yoga – union. To the worker, it is union between men and the whole humanity, to the mystic, between his lower and Higher Self, to the lover, union between himself and the God of Love, and to the philosopher, it is the union of all existence. This is what is meant by Yoga”. (Swami Vivekananda: *The Complete Works of Swami Vivekananda* ) . The goal of Yoga is the realization of oneness. Vivekananda leads the role to give the old ideas of Vedanta a fresh and dynamic interpretation for the purpose of the welfare of the society. According to Swami Vivekananda, if we want to learn the methods of the realization of Divinity, Spirituality then we must learn Vedanta

and its social and political importance because for Swamiji this is the remedy of all evils and misery in the world.

**Sri Aurobindo Ghosh** (1872-1950): Aurobindo Ghosh was a great patriot, political philosopher, poet, seer and lover of Mother India. He pursued his political career from 1905 to 1910 as a leader in the nationalist movement in Bengal.

Sri Aurobindo believes that the aim of human life is to achieve Spiritual Enlightenment where every individual would be able to transcend the limitations of individual self and experience a sense of Divinity within himself. He strongly believes that this journey towards Divine life or journey towards Spirituality is not a personal or individual journey, but it is a collective journey that will definitely influence the world. That is why Aurobindo's sadhana or spiritual practices at Pondicherry is not merely for his personal success or achievement, but it is meant for India's spiritual regeneration. He believes that political mass movements in India have strong spiritual background behind them. His appeals are based on his intense sense of nationalism and ideals of Mother India.

He withdraws himself from active politics in 1910 to lead a life based of Yoga. His famous writings, specially dealing with Philosophic and Religious subjects are – The Life Divine, Savitri: A Legend and Symbol, Essays on the Gita, Synthesis of Yoga.

The word 'Yoga' means Union, hence the goal of Yoga is the realization of Divinity, the realization of unity. In his *Lights on Yoga* Sri Aurobindo says, "Yoga means union with the Divine, a union either transcendental or cosmic or individual or as in our Yoga, all three together". He highlighted on Karma Yoga, Jnana Yoga and Bhakti Yoga. In this sense, Aurobindo's Yoga is a synthesis of each of those Yogas in his own experience of life courses. His extraordinary thought, work and love for Mother India, his internal aspirations made him a Legend.

Divine life is a perfect life, a life of unity and harmony, it is not regulated by external forces, Divine life is regulated by Super-consciousness. Sri Aurobindo explains this in *The Life Divine* – "A life of gnostic beings carrying the evolution to a higher supramental status might fully be characterized as a Divine Life, for it would be a life in the Divine, a life of the beginnings of a spiritual divine light and power and joy manifested in material Nature. That might be described, since it surpasses the mental human level, as a life of spiritual and supramental Supermanhood ." In Supermanhood humanity gets its fulfillment. According to Sri Aurobindo, Superman transcends both the individual existence and the universe. He attributed the transcendental attitude to Superman that exists in Divine Life.

### **Conclusion:**

Rabindranath Tagore, Sri Aurobindo and Swami Vivekananda – their work, thought, and love for Mother India, their convictions for the regeneration of India, their external and internal aspirations – became the philosophical heritage in India. Their moral, intellectual and spiritual accomplishments influenced the mind of a vast mass of Bengal and India. They realized the need of the mass during enlightenment in Bengal and nationalist movement in India. They worshiped the power of Indian mind. They worshiped the intellectual mind and scientific progress of the West and urged us to expand our vision in that light. Their higher consciousness level crossed the finite limits of superstitions, discriminations and all other negative aspects of embodied existence. They found a bridge between Western education, culture and Indian thoughts. They taught us to accept all that is good in knowledge and culture.

**Reference:**

1. Lal, Basant Kumar. *Contemporary Indian Philosophy*. Delhi. Motilal Banarsidas. 2014. 10<sup>th</sup> Reprint.
2. Tagore, Rabindranath. *Sadhana: The Realisation of Life*. Toronto. The Macmillan Company Ltd. St. Martin's Press. 1913. 1<sup>st</sup> Edition. Print.
3. Chatterjee, Utpal. *Rabindranath Tagore, Swami Vivekananda and Sri Aurobindo: Commonality and Contrasts in their Philosophies of Life*. Kolkata. Blossom Books. 2023. Print.
4. Sri Aurobindo. *The Life Divine*. Pondicherry. India. Sri Aurobindo Ashram Publication Department. 2005. Print.
5. Mcdermott, Robert A. *The Legacy of Sri Aurobindo*. CrossCurrents. Vol.22. No. 1. Sri Aurobind His Life, Thought and Legacy Integral Yoga, Evolution and Auroville.1972. Wiley. URL: <https://www.jstor.org/stable/24457780>
6. Swami Vivekananda. *The Complete Works of Swami Vivekananda*. Vol. 8. Kolkata. Advaita Ashrama. 2016 Print.
7. Varma, Viswanath Prasad. *Sri Aurobindo's Philosophy of Political Vedantism*. The Indian Journal of Political Science. Vol. 18. No. 1. 1957. Indian Political Science Association. URL: <https://www.jstor.org/stable/42743375>

## **Teacher Effectiveness & Job Satisfaction among Secondary School Teacher in Relation Gender: A Study of School in West Bengal**

Sofikul Alam\*

\*\*Research Scholar, Kalinga University, Naya Raipur  
Email: sofikulalam786@gmail.com

**Abstract:** Secondary education teachers' job satisfaction has an unchanging position in educational research because it is seen to be an essential ingredient for the growth of the educational system. The goal of the current research was to find out how satisfied West Bengali teachers in secondary schools were with their jobs. The primary goal of the research was to investigate the inequalities in secondary-level teachers' job satisfaction based on factors such as gender, school location, marriage status, kind of work, and amount of teaching expertise. In order to gather the necessary information for the investigation, Sudha, S., and Verma, S. (2023) designed a Job Satisfaction Scaling (JSS). 400 secondary education assistant teachers—257 men & 143 women—were chosen at random from Birbhum, Murshidabad, and Burdwan in West Bengal to make up the research project's sample. The t-test and f-test were used to analyse the data, and it was discovered that there were not any substantial variations in the job satisfaction among secondary school educators based on gender, teaching experience, marriage status, or school place. Because the work fulfilment of assistant educators, professional teachers, and contract instructors varies, the only factor which impacts job satisfaction is the kind of service provided by instructors.

**Keywords:** Job Satisfaction, School Teachers, Gender, Marriage Status, West Bengal, Education, Secondary School, Teacher Effectiveness.

### **1. INTRODUCTION**

A successful instrument for bringing about modifications in society, politics, and the economy is education. In order to beautify society, lakhs of lights are being lit. Education is the culmination of all the procedures that an individual goes through to develop his skills, [1], attitudes, and other behaviour habits that might support social competence and optimal personal growth. A country's ability to flourish is reliant on the standard education that its people get, and this is reliant on the expertise of its instructors.

A teacher's work and conduct are used to assess their quality, and these factors are based on how content they are with the environment they work in. Measuring teachers' work joy has emerged as a key area of interest for academics looking to improve education and make it more dynamic and effective. Especially for secondary-level teachers, work happiness is crucial. Since secondary education serves as a bridge between elementary and higher education, it is a crucial step in every educational system [1, 2]. Teacher in secondary schools must put in a lot of effort to prepare their students for higher learning.

Their level of satisfaction drops and they become less capable of carrying out their duties as assigned if they are not compensated fairly for their services. There is no denying the

importance of secondary education, and it is crucial to provide teachers the best resources possible so they will be happy in their position.

One of the finest and oldest employment in the world is teaching. The primary component of the teaching profession is passion. A knowledgeable instructor is essential to instructional success. Teachers have been a part of the way we live for a very challenging but significant period. They are our life's mentors in addition to being the selfless suppliers. We encounter instructors who dedicate their whole lives to enlightening students just like us at various points in our lives. It is a reality that a teacher may be anybody who mentors us in life; they are not only subject matter experts [3]. The teaching-learning process, which has an impact on teachers' work satisfaction, is one of the major issues confronting the teaching profession in the twenty-first century. Teaching meets the requirements for the foundations of a vocation and has the attributes of genuine commitment for the improvement of humanity.

### **1.1      Work Satisfaction and Teacher Efficiency**

Everybody aspires to perform to the best of their abilities in work. Achievement also brings them a sense of mental and emotional health known as satisfaction. It is quite difficult for someone to do their responsibilities effectively and efficiently if they are not satisfied. A person with a good attitude has a satisfied job. It is satisfying emotionally as well as mentally. The entire educational system may fail if teachers aren't happy in their roles.

*"Any association of environmental, physiological, and psychological factors that leads someone too really state: "I'm happy with my job."*

*"Work happiness is the degree to which people feel positively about their jobs overall".*

Although satisfaction with work is an attitude, it should be highlighted that studies should explicitly differentiate between affect, beliefs, and actions as the subjects perform a cognitive evaluation [4, 5]. Therefore, he proposes that we consider feelings, beliefs, and actions while forming opinions regarding our job.

In modern times, clever and skilled men and women are additionally attracted to careers in teaching. Young educators are dissatisfied with their circumstances of service due to inadequate pre-service advice, inadequate in-service training, and lack of fringe benefits, enticements, and education, in addition to the scarcity of prospects for professional and social progress. Teachers are finding it difficult to maintain their excellent standards in such a challenging atmosphere [4]. The importance of job happiness in relation to the need to raise teachers' position, pay, and working conditions.



**Fig. 1** Job: Giving human life direction.

Effectiveness in the profession of education is the capacity to enhance and grow both the educational process and the process of instruction and learning. Effective teaching practices, the learning process, classroom and student management, the school the environment, discipline, the use of teaching aids, evaluation, measurement, and feedback, among other things, are all factors that contribute to a teacher's success [5, 6]. The two well-known terms "teacher" and "efficiency" combine to form the term "teacher effectiveness."

The Latin phrase "effectives," which meaning creative and prolific, is where the word "effective" originated. "We are convinced that the single most significant variable in the thought about instructive restoration is the instructor, his quality, his background in education, his vocational education and the place he stands in in the educational institution as well as in the community," stated the secondary education commission in 1953.

The kind of educators employed by a school influences its reputation and how much of an impact it has on the community. Clearly, a good teacher is someone who can raise students' knowledge, but the definition extends beyond this. Regarding the effectiveness of teachers, learning takes place in the classroom via activities. According to his research, the classroom environment is crucial, and a teacher's methods are significant. The most efficient methods encourage active engagement and higher level thinking. The challenge is in incorporating this understanding into a valid assessment process.

#### **1.1.1 The concept and significance of teachers' job and life satisfaction**

Since educators represent the lifeblood of the educational system in general, they are crucial in measuring student productivity and the effectiveness of society as a whole. Defined as the overall contentment with what one does and with the necessities of life, satisfaction with life is a wide concept. In addition to their teaching obligations, instructors are also responsible for a number of administrative tasks inside the institution of learning. In India, teachers get lower pay than those in other professions.

Ensuring that their conditions at work are acceptable is vital to their ability to accomplish their tasks efficiently. Teachers are the light of the world [7]. A teacher may make a huge

contribution to the growth of his pupils if he is happy in his role. Not only students may contribute significantly to the formation of their country. However, an unsatisfied instructor may have a detrimental impact on both the students' wellbeing and the process of teaching and learning. If someone is unhappy in their lives, they could not be satisfied at work for non-work-related reasons [7, 8].

Specifically for secondary school educators, job satisfaction is an essential component of their work environment. Schooling in secondary schools has great importance, and it's critical to provide instructors the best resources possible so they can feel content with their position in the labour market. Given the significance of secondary education, which is at the base of the global educational pyramid, satisfaction with work and life are very critical issues.

It is only possible for employees to achieve higher performance if the work provides instructors with a wage that meets their fundamental requirements and elevates their position. As previously said, compensation meets individuals' material demands and gives them a feeling of significance and prestige. Without motivated and devoted instructors, it is impossible to envision how civilization might progress [9]. Teachers who are dissatisfied with their jobs may not be devoted to their work in education and may not be giving their all in the classroom.

If instructors in schools are happy in their positions, secondary education may provide life-related quality education. They are unable to provide effective instruction if they have not been pleased. The six teachers' work happiness is influenced by a wide range of criteria, including IQ and educational background [10, 11]. Life contentment and work satisfaction are strongly correlated. Some educators in schools perceive their task to be more demanding, taxing, and challenging. Some of them believe it's because they are not provided the proper space, respect, autonomy, compensation, working conditions, chances for development and promotion, and so forth owing to the high expectations of society.

## **1.2 Objectives of the study**

- Assessment of West Bengali secondary school teachers' efficacy as educators.
- Identifying the variables that affect secondary school teachers' efficacy.
- Developing suggestions for enhancing secondary school teachers' efficacy and work happiness while taking gender-related variables into account.
- To investigate how several factors, such as gender, school location, marital status, length of teaching experience, and designation, affect secondary school teachers' work satisfaction.

## **2. LITERATURE REVIEW**

(Roy, R. R., & Halder, U. K. 2018) [12] In three West Bengal districts that were chosen for the study, 400 secondary school teachers participated. A self-evaluation measure called Jayaraman's Teacher Efficacy Measure (JTES), designed by Jayaramanna, and was applied to assess the efficacy of the teaching. This study's main goal was to find out how the gender, location, and designation of secondary school teachers affected their effectiveness as instructors. It was discovered that their methods to teaching and the social aspects of their success are the same regardless of their gender or the location of their schools. However, because of gender as well and the location of the educational institutions, the instructors varied greatly in terms of their personal, professional, intellectual, and overall efficacy as teachers. Regarding the designation, educators demonstrated variations in all facets of their efficacious teaching as well as efficacious teaching.

(Aich, D. K., & Nanda, B. 2017) [13] The purpose of this research was to find exactly how satisfied educators were with their jobs in West Bengal's inclusive schools. Goals based on demographic factors, such as age, gender, length of experience, educational background, and habitat, were then investigated. The descriptive survey approach was used to this investigation. The study's sample consisted of teachers from inclusive schools. Through the use of the purposive sample approach, 138 instructors were chosen from inclusive schools where at least one kid with particular requirements was enrolled and receiving formal education from the West Bengal government's educational institutions agency.

(Barman, P., Bhattacharyya, D., & Barman, P. 2015) [14] Generally, a teacher imparts learning to increase a student's quantity of learning. An key prerequisite for making learning more relevant, intelligible, and beneficial for students is a teacher's success in the classroom. In the case of teacher education institutes, this idea of the process of teaching and learning is not unique. The investigators have attempted to investigate the degree of teaching efficiency of teachers employed in various government-aided, private-unaided, and self-financed B.Ed. schools in West Bengal via the current research. For this study, the researchers used the Descriptive Survey approach. Students who are worried about the teachers have assessed the teachers' effectiveness in the classroom in this research. There are 151 B.Ed. college students in the sample; 57 of them are from three government-aided B.Ed. institutions, and 94 are from four private, unaided/self-financed B.Ed. colleges. The representative group was chosen using the random sampling approach.

(Roy, S., & Roy, S. K. 2013) [15] This research aims to evaluate the degree of work satisfaction among college instructors and identify the elements that influence their job satisfaction. From the perspective of the State's higher education system and its growth, the

work satisfaction of West Bengal's college instructors is crucial. The present study employs a descriptive research technique, wherein necessary data are gathered from professors at various institutions around the state via the administration of a questionnaire. The findings showed that instructors' levels of work satisfaction differed. The degree of satisfaction among college instructors has been found to positively correlate with factors such as age, experience, pay scale, job security, and designation; however, it does not significantly correlate with gender differences in education, post-entry academic progress, or distance from the college to the instructor's home. It has been shown that married teachers enjoy more work satisfaction.

(Shakya, S. 2020) [16] The worldwide perception of teachers as human resources in limited supply means that there should be a greater focus on teacher work satisfaction. The purpose of this study is to investigate the association between age, gender, education, ethnicity, and work experience and teachers' job satisfaction. There was use of a quantitative research design. 150 instructors from community-based schools in the Kathmandu district made up the study's sample, and purposive sampling was the research strategy used to get the necessary data. Teachers' Job Satisfaction and organised demographic data were administered. The chi squares test, the one-way analysis of variance test, and Pearson correlation were used to examine the collected data. According to the most recent report, 82% of instructors are very satisfied with their jobs.

## **2.1      Hypothesis**

The following outlines the research's null hypotheses:

H1: There is no significant difference between the mean work satisfaction ratings for male and female secondary school teachers.

H2: There is no significant difference between the mean work satisfaction scores of teachers of secondary schools in urban and rural areas.

H3: There is no significant difference between the mean job satisfaction ratings of engaged and single secondary school teachers.

H4: There is no significant difference between the mean satisfaction at work scores of the paraprofessional, employee, and contract secondary school teachers.

H5: There is no significant difference among the average satisfaction with work scores of teachers at secondary schools regarding their experiences as educators.

### **3. METHODOLOGY**

The examiners measured and assessed secondary-level teachers' work satisfaction utilising the standard survey method of descriptive research.

#### **3.1 Population**

The target audience of the current research was defined as teachers who are employed by the West Bengali Board of Secondary School Education in all of the secondary schools that are taught in Bengali. 400 educators from both the rural and urban regions of three districts in West Bengal— Birbhum, Murshidabad, and Burdwan —made up the research's total sample (257 males and 143 female).

#### **3.2 Variables**

Satisfaction with work among secondary school educators was an exploratory variable in the current research, and demographic information and categorical factors included gender, experience with teaching, marital status, educational institutions location, and title of teachers at secondary schools.

#### **3.3 Tools**

The Job satisfaction Scales (JSS), created by Sudha, S., and Verma, S. (2023), was used by the team of investigators. The size was encompassing and encyclopaedic in nature. There are thirty comments in all on the scale. For  $n = 51$ , [15], the coefficient of reliability between tests after a 24-day interval comes out to be 0.98. The scale has a validity value of 0.74 and compares beneficially to Muthaya's work satisfaction survey.

### **4. ANALYSIS AND INTERPRETATION**

The study participants used and examined the group data they had gathered for this investigation, and they supplied.

Table 1 Statistics from specific to gender t-tests of job-satisfaction ratings.

<b>Job satisfaction</b>	<b>t-Test for equal of means</b>							
	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Diff.</b>	<b>SED</b>	<b>t</b>	<b>Df.</b>	<b>Sig. (2 tailed)</b>
<b>Male teacher</b>	257	79.10	5.49	.298	.589	.479	396	.649
<b>Female teacher</b>	143	76.98	6.89					

According to **Table 1**, there is not a significant difference in the work satisfaction among male and female teachers at secondary schools [ $t-(396) = .497$ ,  $p>0.05$ ]. It follows that a null hypothesis ( $H_0.1$ ) is clearly accepted.

Table 2 Statistics from t-tests of satisfaction with work ratings related to school region.

<b>Job satisfaction</b>	<b><i>t-Test for equal of means</i></b>							
	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Diff.</b>	<b>SED</b>	<b>t</b>	<b>Df.</b>	<b>Sig. (2 tailed)</b>
<b>Urban school teacher</b>	196	76.48	6.79	-.463	.589	-.879	396	.426
<b>Rural school teacher</b>		204	79.45					

According to **Table 2**, there is not a significant distinction in secondary education teachers' satisfaction with their jobs between those in urbanised and rural regions [ $t-(396) = -.812$ , with a  $p>0.05$ ]. It follows that a null hypothesis ( $H_0.2$ ) is undoubtedly accepted.

Table 3 results of the marriage status-specific t-tests on job ratings of satisfaction.

<b>Job satisfaction</b>	<b><i>t-Test for equal of means</i></b>							
	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Diff.</b>	<b>SED</b>	<b>t</b>	<b>Df.</b>	<b>Sig. (2 tailed)</b>
<b>Married teacher</b>	26	75.69	7.978	-1.49	1.795	-1.891	396	.315
<b>Unmarried teacher</b>		374	79.08					

**Table 3** shows that there is not a statistically significant variance in work satisfaction among marital and single teachers of secondary schools ( $t-(396) = 1.891$ ,  $p>0.05$ ). It follows that a null hypothesis ( $H_0.3$ ) is clearly accepted.

Table 4 Statistics from t-tests of designation-specific job satisfaction scores.

<b>Job satisfaction</b>	<b><i>t-Test for equal of means</i></b>							
	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Diff.</b>	<b>SED</b>	<b>t</b>	<b>Df.</b>	<b>Sig. (2 tailed)</b>
<b>Assistant teachers</b>	334	79.46	7.896	3.498	.796	4.896	396	0.000
<b>Para &amp;</b>		66	75.90					

<b>contractual</b>							
--------------------	--	--	--	--	--	--	--

**Table 4** shows a statistically significant variation in job satisfaction among associate and para & contracted secondary education teachers [ $t-(396) = .4.896$ ,  $p<0.01$ ]. It follows that the null hypothesis ( $H_0.4$ ) is clearly rejected.

Table 5 The results of ANOVA for job satisfaction according to levels of teaching experience.

<b>Anova</b>	Sum of squares	df	Mean square	f	Sig.
<b>Between groups</b>	215.696	6	53.695		
<b>within groups</b>	14661.785	396	36.541	1.695	.165
<b>Total</b>	14877.481	402	90.236		

According to **Table 5**, there is no statistically noteworthy discrepancy between secondary school educators' work satisfaction determined by their teaching experience [ $f-(4, 398) = 1.695$ , with a  $p>0.05$ ]. According to the study's result, the null hypotheses ( $H_0.5$ ) was accepted.

#### 4.1 Hypothesis Testing

<b>Hypothesis</b>	<b>Results</b>
H1	Accepted
H2	Accepted
H3	Accepted
H4	Rejected
H5	Accepted

#### 5. DISCUSSION

The objective for this study was to investigate the variations in secondary school teachers' job satisfaction based on factors such as gender, school location, marital status, kind of work, and degree of teaching expertise. It was discovered that there were not any significant differences in secondary school teachers' work satisfaction when considering gender, the location of the institutions of learning, [16], marital status, or their prior teaching experiences. Since assistant teachers, paraprofessional teachers, and contract teachers have different levels of work satisfaction, the sole factor that affects job satisfaction is the kind of service offered by teachers.

## 6. CONCLUSION

For teachers to give their all to their schools, they have to feel satisfied with their jobs. Without qualified and content instructors, no matter how good the educational system is, it will ultimately fall short. The instructor cannot efficiently impart the material if he is not happy with his work. The management of the school might set up specialised benefits programmes for the wellbeing of teachers and good adjustments in their degree of satisfaction. Finally, the study's findings indicate that there are no significant variations in secondary school teachers' work satisfaction levels across Birbhum, Murshidabad, and Burdwan in West Bengal in relation to their age, marital status, and degree of education. The only distinctions that separated them were in the areas of instruction. For teachers to give their all to their schools, they must be satisfied with their jobs. Without experienced and content instructors, no matter how good the educational system is, it will ultimately fall short. The instructor cannot effectively convey the subject matter if he is not satisfied in his position.

## 7. REFERENCES

- [1] Ai-Girl, T. et. al. (2011). Teachers 'perceptions of creativity and happiness: a perspective from Singapore. WCES-15 (pp. 173-180). Singapore: Procedia Social and Behavioural Sciences.
- [2] Roy, S. (2015). Assessment of Job Satisfaction of College Teachers: Focus on Methodology. INSPIRA-Journal of Modern Management & Entrepreneurship 5(3), 73- 84.
- [3] Roy, S., & Roy, S. (2013). Job Satisfaction of College Teachers - An Elementary Study in West Bengal. Business Perspective, Vol. 4, 62-77.
- [4] Shann, M. (1998). Professional Commitment and Satisfaction among Teachers in Urban Middle Schools. Journal of Educational Research 92(2), 67-74.
- [5] Panchaiyappan, P. & Raj, D.U., Evaluating the teacher effectiveness of secondary higher secondary school teachers. Journal of Research and Method in Education, 4(1), 5256, 2014.
- [6] Akomolafe & Ogunmakin. (2014). Job Satisfaction among Secondary School Teachers: Emotional Intelligence, Occupational Stress and Self- Efficacy as Predictors. Journal of Educational and Social Research, Vol 4, No 3.
- [7] Vyas, M.V., The job satisfaction of primary school teachers with reference to sex, marital status and educational qualification. Journal of Indian Educational Abstracts, 3(2), 91- 92, 2003.
- [8] Buitendach, J. & De Witte, H. 2005. Job insecurity, extrinsic & intrinsic job satisfaction and effective organizational commitment of maintenance workers in a parastatal. South African Journal of Business Management, 36(2):27-37.

- [9] Kamaruddin, W. N. W., & Ibrahim, M. S. (2010). *Lecturer efficacy, professional and general competency of Malaysian Polytechnic technical lecturers.* RCEE & RHED, Kuching, Sarawak, pp-1-7.
- [10] Sudha, S., Verma, S., & Sharma, A. (2023). *Impact of general well-being of chandigarh teachers on their job satisfaction.* International journal of research pedagogy and technology in education and movement sciences, 12(02), 197-204.
- [11] Klassen, R. M., & Chui, M. M. (2010). *Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress.* Journal of Educational Psychology. Vol-102(3), pp-741-756.
- [12] Roy, R. R., & Halder, U. K. (2018). *Teacher effectiveness: A self-report study on secondary school teachers.* International Journal of Research and Analytical Reviews, 5(3), 2348-1269.
- [13] Aich, D. K., & Nanda, B. (2017). *Teacher's Job Satisfaction in Inclusive Schools in West Bengal.* Multidisciplinary Journal of Humanities and Social Sciences, 3(2).
- [14] Barman, P., Bhattacharyya, D., & Barman, P. (2015). *Teaching effectiveness of teacher educators in different types of B. Ed colleges in West Bengal, India.* American Journal of Educational Research, 3(11), 1364-1377.
- [15] Roy, S., & Roy, S. K. (2013). *JOB SATISFACTION OF COLLEGE TEACHERS-AN ELEMENTARY STUDY IN WEST BENGAL.* Mqwertyuiopasdfghjklzxcvbnmrt, 62.
- [16] Shakya, S. (2020). *Teachers' Job Satisfaction of Government Schools of Kathmandu District.* Mangal Research Journal, 43-51.
- [17] Mustafa, M. N. (2013). *Professional competency difference among high school teachers in Indonesia.* International education studies. Vol-6(9), pp-83-92.
- [18] G. V. Mahajan, "Job satisfaction and Life Satisfaction of High School Teachers as a Function of Biographical Characteristics", Unpublished Ph.D. Thesis, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, (2015).

## **Intellectual Property Rights and New Education Policy 2020**

**Goutam Biswas,  
Librarian, Nagar College, Nagar, Murshidabad  
and  
Prodip Das,  
Librarian, Krishnanagar Women's College, Krishnanagar, Nadia, WB**

### **Abstract:**

Intellectual property rights (IPRs) are very important for innovation and new ideas. It encourages prospective researchers and protects their interests. IPR gives innovators an exclusive right over their creations for a certain period. India is a member of the World trade organization and has complied with its obligations related to intellectual property rights. In this paper different types of IPR have been elaborately discussed and also discussed the process of registration. Also highlighted IPR relation to new education policy (NEP) 2020 puts major emphasis on ability enhancement and skill development with a technology-driven approach to teaching-learning processes accompanied by creativity and innovation.

---

### **Introduction:**

Intellectual Property (IP) is all about the creations of ideas, like inventions, literary and artistic works, designs, symbols, names, and images. They are used in commerce and play a significant role in driving innovation and creativity. Intellectual Property Rights (IPR) grants legal protections to the creators or owners of intellectual property, allowing them to have control over their creations and enjoy the benefits they bring. These rights are crucial in fostering innovation and creativity across various industries.

#### **Intellectual Property Rights (IPR)**

IPR is customarily divided into the following:

- (i) Copyright – This is the right to protect original written or published works. The creativity may be in the form of a book, literary or artistic work, music, etc. Copyright thus protects the creator of his works to safeguard these from copying without consent.
- (ii) Patents – The patents give the rights to protect useful novel technical inventions such as new business products or processes to their creator.
- (iii) Trademarks – A trademark is a distinctive logo or sign assigned to a particular item that is created by a specific person or enterprise or industry. These trademarks distinguish the product or services from similar products or services created by the competitors.
- (iv) Industrial Designs – This constitutes the aesthetic or ornamental features of a product. These features may be two-dimensional for example patterns or three-dimensional for example, the shape of a product.
- (v) Trade Secrets – Those rights are related to confidential information which may be licensed or sold.
- (vi) Geographical Indications – Geographical appellations are signs used for products that are related to specific topographical origin and its related characteristics attributable to that geographical origin. IPRs like trademarks, patterns, and copyrights can be registered through a legal authority such as Intellectual Property Office. A creator has automatic legal right over his product or design concerning

unregistered IP. The unregistered IPRs including confidential information, copyrighted, trade.

### **The New Education Policy 2020 (NEP 2020)**

The New Education Policy 2020 (NEP 2020) has a clear mission to provide a holistic and multidisciplinary education to all the students across the country. This policy focuses on bridging the gap between the job market essentials and the current state of the learning framework. NEP puts enough emphasis on professional qualifications as they act as a stepping stone to employment opportunities.

The professional qualification offers a guarantee of competency and expertise by presenting challenges and growth opportunities. It becomes an intrinsic part of the Higher Education system, encompassing not only fundamental skills but also scientific and technological knowledge. NEP's comprehensive approach grooms students, preparing them for a smooth entry into the job market. They possess the necessary skills, tools, and education to tackle business problems faced in various industries. This, in turn, makes them valuable contributing citizens, committed to promoting and achieving the goal of equitable and universal access to quality education for all.

This policy calls for the development of a dynamic public education system that encourages and facilitates the equitable civic and private participation of all individuals. To foster creativity and invention in every field, the need for a suitable IPR regime in every country cannot be overlooked.

Intellectual Property Rights (IPR) - Building a Framework for Innovative Advancements!

**Trademarks:** Protect symbols, names, and slogans used to identify goods and services, distinguishing them from others in the market.

**Trade Secrets:** Protect confidential and proprietary business information, giving an advantage over competitors who do not know or use the information.

**Industrial Designs:** Protect the visual design of objects that are not purely functional but have an aesthetic value.

**Geographical Indications:** Indicate the origin of a product and its qualities, reputation, or characteristics due to its geographical origin.

**Plant Variety** Protection: Protects new varieties of plants that have been developed, encouraging investment in breeding programs.

Intellectual property rights are essential for promoting innovation and creativity by providing a framework that rewards creators and inventors for their efforts. However, the balance between protecting intellectual property and fostering access to knowledge is a complex and ongoing challenge. Different countries have their own legal systems and regulations governing intellectual property, and international agreements also play a role in shaping these rights on a global scale. Enforcement of these rights is crucial to ensuring that creators and inventors can benefit from their work and investments.

### **Patents**

A patent is an exclusive right awarded for an invention, which can be a good or a method that generally gives a fresh approach to a problem or a new technical solution. It

grants the only authority to produce, utilize, and market the invention for a predetermined amount of time to the person who invented it.

Property rights are granted to original inventions by the U.S. Patent and Trademark Office, including machinery and processes. A patent grants one or more inventors exclusive rights to their inventions and prevents them from being used by third parties. Patents are frequently used by technology businesses to safeguard their investment in developing novel and inventive goods, as demonstrated by the patent on the first computer.

. The three types of patents consist of:

- **Design patents:** Protection for the aesthetics of a device or invention. Ornamental design patents include a product's shape (Coca-Cola bottle),, fonts, or any other distinct visual traits.
- **Plant patents:** Safeguards for new varieties of plants. An example of a plant patent is pest-free versions of fruit trees. But inventors may also want a design patient if the tree has unique visual properties.
- **Utility patents:** Protection for a product that serves a practical purpose and is useful. IP examples include vehicle safety systems, software, and pharmaceuticals. This was the first, and is still the largest, area of patent law.

### **Patents Registration**

A. Ordinary Application:

This type of application allows the applicant to file a patent in one of the designated Patent offices in India namely Delhi Patent Office, Mumbai Patent Office, Kolkata Patent Office or Chennai. The applicant can choose to file the application online or by, you know, directly submitting it to the respective office. Ordinary Application has, like, two categories, Provisional Application (without claim) and Complete Application (With claim). The Provisional Application allows the applicant to, you know, showcase their ideas at a hypothetical stage or abstract stage. The Complete Application, on the other hand, requires the applicant to, like, provide a detailed specification. The complete specification must, you know, be submitted within 12 months from the date of the provisional application.

B. Conventional Application:

This type of application allows the applicant to file a patent application in any conventional country within 12 months of the first filing. This means that an applicant can, like, first file a patent application in any country and then, within the specified time

frame, file the same application in India. The application must, you know, be submitted in the prescribed format either online or offline.

#### C. PCT National Phase Application:

This type of application is a bit more, you know, complex. The applicant has two options for filing this application. They can, like, directly file the application to the International Bureau (IB, Geneva) or, you know, choose any receiving office (RO). The application must be filed, you know, within 12 months from the first filing date. In the case of the Indian Patent office, the applicant must, like, submit the application within 31 months from the date of the first filing.

So, in conclusion, an applicant has various options for filing a patent application depending on the stage of their ideas and the countries they wish to, you know, file in. It is essential to understand the rules and timelines associated with each type of application to ensure a smooth patent filing process.

### **The key features of the NEP 2020 for Higher Education**

1. Introduce Interdisciplinary education system
2. Flexible curriculum and credit transfer facilities
3. **Research and innovation:** The NEP 2020 aims to make India a global hub for innovation and research by encouraging universities to prioritize research and increasing investment in science and technology. The policy also recommends the establishment of a National Research Foundation to support and fund research activities across all disciplines.
4. Vocational education and skill development
5. Develop Online education platform
6. **Inclusivity and Equity:** The NEP 2020 places significant emphasis on promoting inclusivity and equity in education by addressing the needs of disadvantaged groups such as girls, low-income families, and students with disabilities. It also seeks to provide equal opportunities to students from all socio-economic backgrounds.
7. **Internationalization:** The NEP 2020 aims to promote internationalization by encouraging collaborations with foreign universities, attracting international students, and facilitating student and faculty exchanges. The policy also recommends the establishment of a National Education Exchange Programme (NEEP) to promote educational exchanges between states.
8. **Autonomy and accountability:** The NEP 2020 proposes greater institutional autonomy and decentralization of decision-making to improve the quality and effectiveness of higher education. The policy also emphasizes the importance of accountability, transparency, and regulatory mechanisms to ensure that institutions adhere to quality standards.

### **Intellectual Property Right (IPR) in Context of NEP 2020**

Intellectual property rights (IPRs) are the spine of innovation and new thoughts. They inspire potential researchers and defend their hobbies. Those rights supply innovators an exclusive property over their creations for a certain length. India being a member of the world exchange business enterprise has complied with its duties related to intellectual belongings rights. In India, IPRs are divided into the following classes as

Copyright, patents, designs, and logos. The new schooling policy (NEP) 2020 places essential emphasis on potential enhancement and ability development with an era-pushed approach to teaching-mastering methods accompanied through creativity and innovation. The purpose of IPR is to provide protection for the outcomes of investments of people and stimulate innovation thereby profitable and inspiring creative work in the development of NEP 2020. In today's technology, it's very vital to create IPR focus within educational institutions among school members and college students for you to patent their revolutionary studies paintings and therefore gain the stakeholders. IPRs have additionally won substantial significance with the arrival of facts generation. IPR is of high significance in sustaining the global business environment and subsequently subsistence all around the globe. Those rights uplift the inquisitive mindset by duly acknowledging and offering benefits to the originator. The absence and insufficient execution of those rights may also hinder the social, technical, and monetary boom of a nation. Therefore appropriate propagation of IPR understanding and its implementation is of paramount significance in the context of NEP 2020.

The NEP seeks to establish an educational landscape that caters to the overall-development of students in order to create a more able workforce to enhance India's global competitiveness. Creativity and innovation stay at the heart of the coverage. The Ministry of Human aid improvement (now, the Ministry of training) has diagnosed that India lags behind whilst it comes to analysis and innovation. This loss of innovative and important thinking specifically stems from the reality that the cutting-edge academic framework does not award such wondering. This has led to stagnation of IP. Creativity outcomes in innovation and innovation sooner or later consequences within the era of highbrow assets. By introducing many transformational reforms, the NEP will undoubtedly result in the extended era of thoughts. Given under is a list of tutorial reforms given within the NEP on the way to result in the proliferation of intellectual property.

**i. Establishment of the National Research Foundation (NRF)**

The principle goal of the establishment of this kind of basis is to create a lifestyle of research across numerous academic and research orientated institutes throughout the country.

**ii. The abolition of Rote Learning**

The NEP acknowledges the way of life of rote studying within the Indian education gadget and ambitions at developing an academic environment inculcating real information and Conceptual to foster modern thinking inside the young people.

**iii. Streamlining PhDs and Degrees with Research**

The NEP states that scholars may additionally without delay apply for a PhD after finishing their Masters degree.. By means of creating a PhD extra reachable by means of discontinuing the requirement of an M.Phil degree, the research ability of India will increase considerably.

**iv. Fuelling Research and Innovation in Colleges and Universities**

The NEP envisions putting in start-up incubation centres, era development centres, centres in frontier regions of research; extra enterprise-instructional linkages; and interdisciplinary studies which include humanities and social sciences research in schools and universities.

**v. Education 4.0 and the National Education Technology Forum**

Using era pushed solutions for educating the populace is a prime characteristic of the NEP. It talks approximately how technologies including artificial intelligence, device gaining knowledge of, block chains, smart forums, hand held computing gadgets, adaptive pc checking out can be deployed to help education

**vi. Disruptive Technologies**

The policy proposes that better education institutes will conduct good sized research and could quickly provide guides and instructional substances on disruptive technologies (AI, 3-D printing, digital fact, and so on.).

### **IPR Cell Created at University of Calcutta**

IPR Cell was created in at University of Calcutta to find out new invention and register as a patent, this cell already got fund from RUSIA 2.0, and Coordinator of this cell is Prof Sabuj Kumar Chowdhury, Dept of library and information science. Main objective of this cell is to find out various invention carried out different part of West Bengal mainly those research was not registered by any university.

### **Conclusion**

In the end, intellectual property (IP) performs a critical position in riding innovation and creativity across various industries. Intellectual belongings Rights (IPR) furnish creators to manipulate over their creations and provide them with the opportunity to gain from their ventures. The new schooling policy 2020 (NEP 2020) acknowledges the significance of holistic training, bridging the gap among task market necessities and the modern-day mastering framework. By way of integrating expert qualifications, NEP guarantees college students are nicely-prepared to go into the job marketplace with the necessary talents and expertise. These transformative policy goals to create a dynamic public schooling gadget that fosters equitable participation and encourages innovation. Together, a sturdy intellectual property rights framework and a holistic schooling device open doors to a future wherein creativity and innovation thrive in all fields.

### **Reference:**

1. Sharma et. al., "Intellectual Property Rights in context of NEP 2020 IN CONTEXT OF NEP-2020", Journal of Intellectual Property Rights Vol 27, November 2022, pp 415-419
2. Intellectual Property Rights: Definition and Examples, Available at <https://stfrancislaw.com/blog/intellectual-property-rights/>
3. Mishra, Bhawana and Tiwari, Raju, "Patent Filing System and Examination in India: An Overview in the Context of Process and Product in Chemistry", Journal of Scientific Research Volume 64, Issue 1, 2020 , pp-292-298
4. Piaget, Jean, "The New National Education Policy 2020 and Innovation ", Available at <https://www.ip4kids.in/2020/08/06/the-new-national-education-policy-2020-and-innovation/>

## **National Education Policy 2020: Changing Role and Status of the College Libraries in the Higher Education Sector of India**

Prodip Das  
Librarian, Krishnagar Women's College  
Krishnagar, Nadia, W.B.  
And  
Goutam Biswas  
Librarian, Nagar College,  
Nagar, Murshidabad, W.B.

**Abstract:** Library is an essential part of any academic institution and plays a vital role in the teaching-learning process by complementing each other. After the introduction of our New Education Policy 2020, i.e., NEP 2020, the role of academic libraries in the higher education sector of India has been changed drastically; especially the role of the college libraries has to be adjusted to facilitate the aim and objectives of the NEP 2020. Under NEP 2020 a bouquet of multidisciplinary and interdisciplinary subjects are offered with a thrust to the research oriented curriculum at the Under Graduate (U.G.) level. Besides the conventional class room teaching-learning process, it has prescribed for online learning and blended mode of learning also. The time duration of the U.G. courses is also changed from three years to four years system. This paper discussed about how the role and status of the college libraries in all spheres are going to be changed in this context.

**Keywords:** National Education Policy 2020, NEP 2020, Library, Role and Status of the College Libraries, Under Graduate level, Higher Education Sector of India.

**Subject Classification: Library and Information Science.**

**Introduction:** The Higher Education Sector in India is undergoing rapid transformations under the National Education Policy 2020 and at the same time the role and status of the college libraries are also changing. This policy has been formulated after a detailed consultative process from January, 2015 and has been announced on 29<sup>th</sup> July, 2020. This policy focuses towards the Access – Equity – Quality – Affordability – Accountability; these are the main pillars of the policy. This policy envisages on the quality university or college education and a quality college education requires a quality library. There come the changes in the role and status of the college libraries from the previous conventional ones. As in this policy multidisciplinary subjects and holistic education have been offered, the collection development and services of the college libraries have to be changed for successful implementation of teaching-learning process in the colleges. Under this policy more thrust has been given on the research oriented education system at the under graduate level than ever before which makes the college libraries to be more research intensive ones than before. This policy emphasizes on the use and integration of technologies in the Education System and hence, the uses of technologies are to be increased in the college libraries to meet the current challenges in all aspects, so that it can give more satisfactory services to its users. Thus, status of the college libraries are going to be changed from the conventional ones to the automated libraries, hybrid libraries and even to the digital libraries as need of the time.

**Objectives:** The objectives of this paper are as given below:

- ❖ To understand the National Education Policy-2020 and its effect in the Higher Education Sector which in turn how affects the college libraries.

- ❖ To know about the role and status have been given to the Academic Libraries, especially to the college libraries under this policy.
- ❖ To study what types of status have been given to the college libraries and how it deviates from the previous national Education policy?
- ❖ To observe the new role and status of College Libraries for which new vision and construction has been envisaged with large, well resourced, vibrant, multifaceted institutions.
- ❖ To understand the changes are going to be occurred in different areas of a college library; such as its collection development, its type and mode of services to the users, etc.

**Methodology:** This paper has been bringing out on the base of evaluate of current literature published on the internet and on other media and platforms. The compulsory secondary data was

collected from several journals, magazine, websites including thereof government of India, different government publications on the national Education Policy 2020, other publishing, etc.

**Key Features of the NEP 2020 in respect of the Higher Education:** There are many features of NEP 2020, but, here are some key features of this policy regarding the Higher Education System are highlighted as follows:

- Introduction of holistic and multidisciplinary education with multiple entry/exit options.
- Academic Bank of Credit should be established.
- Multidisciplinary Education and Research Universities (MERUs) would be set up.
- National Research Foundation (NRF) to be built up.
- There would be a single overarching umbrella body for promotion of higher education sector (excluding medical and legal education) including teacher education. The Higher Education Commission of India (HECI)-with independent bodies; for standard setting-the General Education Council; for funding-Higher Education Grants Council (HEGC); for accreditation- National Accreditation Council (NAC) and for regulation- National Higher Education Regulatory Council (NHERC);
- There should be no such separations between arts and sciences, between vocational and academic streams and also between curricular and extra-curricular activities.
- Strengthen of vocational education both in school and in higher education system.
- Given more thrust on research works.

**Key Comparisons between the last National Education Policy “National Policy on Education 1986, Modified in 1992 (NPE 1986/92)” and “National Education Policy 2020 (NEP 2020)”:**

Before the NEP 2020 is introduced, the education ecosystem was governed by the last education policy, i.e., ‘National Policy on Education 1986 (NPE 1986) and it was modified in 1992. Some key comparisons are made here between the above two policies to understand what the changes are occurred and these are shown by the following table:

**Table 1: Key Comparisons between NPE 1986 and NEP 2020**

<b>NPE 1986</b>	<b>NEP 2020</b>
1. Subject Specialization	1. Multidisciplinary and Interdisciplinary
1. Affiliated Colleges	2. Autonomous Colleges

2. Term – End Examination	3. Continious Evaluation
3. Information Centric	4. Research Work Centric
4. Time bound and Rigid	5. Multiple Entry and Exits
5. Thrust on Offline Traditional Learning	6. Impetus on Digital and Online Learning

From the above table we can say that in NPE 1986 emphasis was given on specialization on a subject, but in NEP 2020 emphasis is given on learning of Multidisciplinary and Interdisciplinary subjects. In the NEP 2020 more freedom has been given to the colleges so that they can provide quality education with research intensive nature than ever before. NEP 2020 put emphasis on the continuous evaluation rather than previously recognized Term-End examinations. NPE 1986 was information centric, but NEP 2020 is more research works centric and emphasizes on conceptual understanding, it envisages that research oriented curriculum and activities should be started from the Under Graduate (U.G.) level in the colleges. The option of multiple entry and exits are given in the NEP 2020 whereas, in the last education policy there was no such provisions rather it was time bound and rigid. In this ‘Digital India’ use of ICT has been increased rapidly which is reflected in the NEP 2020 where impetus is given on Digital and Online learning and more use of digital or e-resources has been highlighted in this policy to reach out to the maximum number of students.

**Changing Status and Role of College Libraries:** Here, we are trying to locate and understand how the role and status of the college libraries are going to be changed under the New Education Policy 2020 and also trying to know how the changes are going to be occurred in the various spheres of the college libraries like in collection development, in mode of services, etc.

**Table 2: Changing Status of College Libraries from Traditional to Research-Centric Library under NEP 2020**

College Libraries	Status	
	Traditional Library	Research-Centric Library
NEP 2020	Not Focused	Focused
Before NEP 2020	Focused	Not Focused

Under NEP 2020 the status of the college libraries has been shifted from the traditional one to the research-centric library. In this policy focus has been given on the research based activities at the U.G. level and as a result college libraries are also shifting towards the “Research-Centric Library”. The dimensional status of the college libraries is also changing under this policy and it is shifting from Single-Dimensional Library to Multi-Dimensional Library and this is shown by the following Table 3 as given below:

**Table 3: From Single Dimensional to Multi Dimensional College Libraries under NEP-****2020 compared to before NEP- 2020**

College Libraries	Status	
	Single- Dimensional Library	Multi- Dimensional Library
Under NEP 2020	Not Focused	Focused
Before NEP 2020	Focused	Not Focused

The above table shows that under NEP- 2020 the focus has been given on the Multi-Dimensional College libraries, but before this focus was given on the Single-Dimensional College Libraries. Here, Multi- Dimensional College libraries means that the acquisition of reading materials should be both printed and electronic and at the same they should provide both the offline and online services to the users simultaneously, not be limited only to the one dimension.

As the status is changing, then obviously the collection development in the libraries will also change, i.e., the type of reading materials in the library will also change and this is shown in the Table 4 as below:

**Table 4: Collection Development of Reading Materials according to sources under NEP 2020 compared to before NEP 2020 in the College Libraries**

Reading Materials according to Sources	College Libraries	
	NEP 2020	Before NEP 2020
Primary Sources	More	Less
Secondary Sources	As Usual	More
Tertiary Sources	As Usual	As Usual

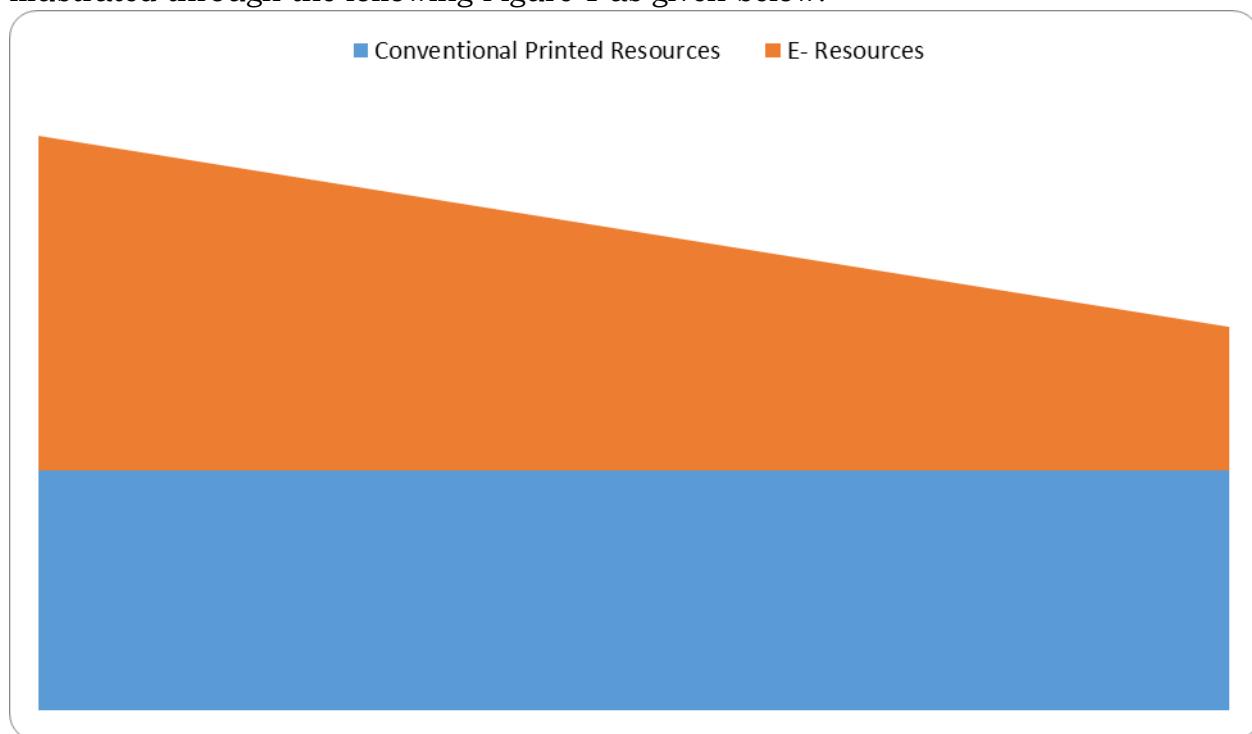
The table clearly shows that Primary Sources of reading materials (like Journals, Magazines and other Periodicals) should be acquired more by the college libraries than ever before under NEP 2020. Before NEP 2020 the college libraries purchased more and more Secondary Sources of Reading Materials (like Text books, Reference books and other documents) and less Primary Sources. Only in case of Tertiary Sources of Reading Materials there is no change. Now, changing is occurring in collection development of college libraries not only according to the sources of reading materials but also according to Media of Learning Resources which has been shown by the following Table 5 as below:

**Table 5: Collection Development according to Media of Learning Resources under NEP 2020 as compared to before NEP 2020 for the College Libraries**

Learning Materials According to Media	College Libraries	
	As per NEP- 2020	Before NEP- 2020

Conventional Printed Resources	As Usual	As Usual
E- Resources	More	Less

The above table depicts that there is no change for collection of Conventional Printed Resources which is As Usual under both NEP-2020 and before. But, in case of subscribing E-Resources in the College libraries there is drastic change. More and more of E-Resources have to be acquired under NEP 2020 than before. Since, in this policy emphasis has been given on more use of technology and research based activities as well as the rapid advancement of technologies also forced the college libraries to collect more E-Resources for the benefits of the students and teachers. This has been illustrated through the following Figure 1 as given below:



**Figure 1: Collection of Learning Materials according to Media in the College Libraries**

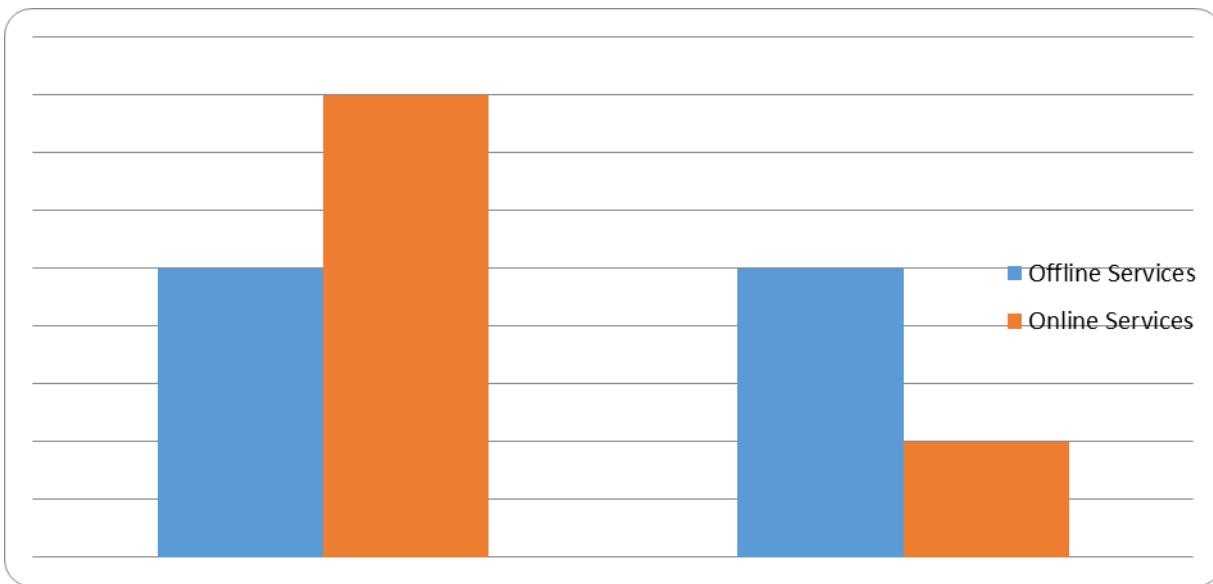
The above diagram shows how the collections of E-Resources are more and more increasing under NEP 2020 than previous policies.

The form of services given by the college libraries to the users are also going to be changed under the NEP 2020 which is shown by the following table 6:

**Table 6: Provision of Services according to form would be given by the College Libraries under NEP 2020 as compared to before NEP 2020**

Provision of Services according to Form	College Libraries			
	Under NEP 2020	Before NEP 2020	Under NEP 2020	Before NEP 2020
<b>Offline Services</b>	As Usual	As Usual		
<b>Online Services</b>	More	Less		

From the above table it can be seen that under NEP 2020 more thrust has been given on the provision of online services by the College Libraries than ever before and in the case of conventional offline services there is no change. So, under this new policy along with the conventional services the libraries also have to give the current online services as prevailed. This is illustrated by the following figure as below:



**Figure2: Provision of Services according to the Form by the College Libraries**

The above diagram clearly illustrates that how under NEP 2020 more emphasis has been given on the online services or e-services rather than the traditional offline services in the college libraries. Hence, this policy is advocating the more and more use of digital tools and platforms which have to be done by the college libraries.

**Conclusion:** College libraries can play an important role to bring out the most of this policy in the colleges for their stakeholders. It is clear that the role and status of the college libraries will not be the same as before under NEP 2020. As per this policy more and more "Multidimensional" libraries will be emerged. Collection Development of the college libraries would be affected more as more and more e-resources have to be subscribed and at the same time more reading materials on the multilingual regional languages are to be procured in the college libraries as per the requirement of NEP 2020. For successful implementation of the NEP 2020 in the colleges, the infrastructure of the college libraries should also be improved in parallel as library is the vital part of any educational institution. Thus being equipped with the modern technologies and changing role, the College Libraries can contribute greatly to their institutions by enhancing the creativity and potentiality of both the teachers and students simultaneously.\

## **References**

1. Lamani, Manjunath. (2021)-studied New Education Policy 2020: Role of Libraries.Retrieved from-<https://scholar.google.co.in/citation?user=kwi54CAAAAJ&hl=en>. Accessed on 05/10/2023.
2. K Kumar and A Prakash , K Sing.(2020) How National Education Policy 2020 can be a lodestar to transform future generation in India. Journal of public Affairs an internation Journal, e2500, 1-5. Retrieved from-<https://doi.org/10.1002/pa.2500>, Accessed on 07/10/2023.
3. My Gov.(2020). National Education Policy 2020.Retrieved from-<https://innovateindia.mygov.in/nep2020/#list-item-4>. Accessed on 07/10/2023
4. Development in India, International Journal of Sustainability in Higher Education, 11(2), 141-152. Retrieved from -<https://doi.org/10.1108/14676371011031865>. Accessed on 10/10/2023
5. Library of Beihang University (2020) Library electronic resources uses help continued 3: online education platform .available at: Retrieved from -[https://lib.buaa.edu.cn/news\\_info?eid=1&pid=46&id=20301](https://lib.buaa.edu.cn/news_info?eid=1&pid=46&id=20301). Accessed on 07/10/2023
6. Every library .(2020, March20). Resources for libraries on coronavirus.Retrieved from -[https://www.everylibrary.org/resources\\_for\\_libraries\\_on\\_coronavirus](https://www.everylibrary.org/resources_for_libraries_on_coronavirus).
7. Website of Indian council of Agricultural Research.Retrieved From-<https://icar.org.in/>
8. Retrieved from-[https://www.researchgate.net/publication/343916111\\_National\\_Education\\_policy\\_How\\_does\\_it\\_Affect\\_Higher\\_Education\\_in\\_India](https://www.researchgate.net/publication/343916111_National_Education_policy_How_does_it_Affect_Higher_Education_in_India)
9. Retrieved from <https://shodhganga.inflibnet.ac.in/bitstream/10608/21216/1/01%20%title.pdf>.
10. Stagg, A.and Kimmims, L.2012. Resrarch skills development through collection vitul learning environments. Reference service Review ,40(1),61-74.Doi:
11. Association of college and Research Libraries 2000.information literacy competency standard for higher education. Available at: Retrieved from-<https://www.ala.org/ala/acrl/acrlstandars/standars.pdfma>.
12. Retrivrd from-<https://heerubhojwani.com/impact-of-nep2020-on-teacher-librarian-India/>.
13. Govt.of India(1986). National Policy on Education 1986.
14. Retrieved from-[https://www.education.gov.in/sites/upload\\_files/mhrd/files/document\\_reports/NPE86-mod02.pdf](https://www.education.gov.in/sites/upload_files/mhrd/files/document_reports/NPE86-mod02.pdf).
15. Carnoy,M,& Dossani,R(2013).Goals and government of higher education ,65(5),595-612.
16. INFONET(2014).UGC- Infonet Digitall library consortium. (Retrieved from <https://www.in flibret.ac.in/econ/about.php>.
17. K.Muralidharan,(2018).school Education Reforms in India. Retrieved from-<https://uchicago.app.box.com/s/ifxf8Fsz3cj5p41btef2r/24juc2vze>.
18. Retrieved from- <https://scholor.google.co.in/citations?user=znAxu6cAAAA&HL=EN>.
19. Singh, Devyani (2020),"NEP2020: An Interplay of Education and Technology ", Retrieved from- <https://corporate,cyrilamarchandblogs.com/2020/08/ncp-2020--an-interplay-of-education-and-technology/. \>
20. Ralhan B.(2020).Challenges in Implementing the National Education 2020.Retrieved on March 6,2021 from-<https://www.entrepreneur.com/article/357910>.
21. Highlight of New Education Policy 2020. Available at 2022 <https://www.pib.gov.in/press Release>

## **Reading the Urban Space: Representation of Mumbai and Literary Imagination**

Sreeja Konar, Assistant Professor, Department of English, Nagar College

### **Abstract**

Being tossed between the periodic names like names like ‘Manabi’, ‘Mambai’, ‘Mambe’, ‘Mumbadevi’ and many more, Bombay officially became Mumbai in 1995. Being far away from the community centric chronotope of Raja Rao, the individualistic setting of Salman Rushdie exploits the urban space of Mumbai in his novel *The Moor’s Last Sigh* (1995). Mention may also be made of Vikram Chandra’s *Love and Longing in Bombay* (1997), Rohinton Mistry’s *Family Matters* (2002), Suketu Mehta’s *Maximum City: Bombay Lost and Found* (2004), Gyan Prakash’s *Mumbai Fables* (2010), Jeet Thayil’s *Narcopolis* (2011) and Naresh Fernandes’s *City Adrift: A Short Biography of Bombay* (2013). In these texts the authors brilliantly show how the city, the socialized space turns itself into a stigmatized stage where the players are playing their parts continually. In my article discussions will be made on the fact that how, in the abovementioned texts, Mumbai is presented in three dimensions - a mirror, a mirage and a magnet which reflects the people’s lives, eludes the dreams of its people and attracts people respectively. Thus the city becomes a character – to be precise, the city becomes the protagonist round which the entire plot builds up.

**Keywords:** Urban, City, Mumbai, Space

### **Introduction**

“In the city that never sleeps, crime also does not take a break. Lawlessness is a constant feature of the urban landscape; it touches the lives of ordinary people and makes their lives a living hell.” (Prakash 309)

The French critic Henri Lefebvre in *The Production of Space* (1976), the French critic Michel de Certeau’s conception ‘practiced place’ in *The Practice of Everyday Life* (1984) and the American geographer Edward Soja in *Postmodern Geographies* (1991) have concentrated on the analytical aspects of city space. From Baudlaire to Baudrillard, the historical evolution of city life has ensured the multifaceted dimension of culture. The cultural critic Peter Barry explains Baudrillard’s oft cited phrase ‘loss of the real’ thus: “... the view that in contemporary life the pervasive influence of images from film, TV, and advertising has led to a loss of the distinction between real and imagined, reality and illusion, surface and depth. The result is a culture of ‘hyperreality’, in which distinctions between these are eroded.” (87) The enchantress Mumbai city which critics like Jerry Pinto and Naresh Fernandes in their Introduction to *Bombay: Meri Jaan* call ‘an addiction’ (xi) mingles these real and virtual spaces amazingly.<sup>1</sup>

### **Representation of Mumbai in Literature**

Many writers have focused on the urban space of Mumbai. In their edited book titled *Bombay, Meri Jaan: Writings on Mumbai* (2003) Jerry Pinto and Naresh Fernandes capture forty six passages written about the cultural life of the city.<sup>2</sup> Sahitya Akademi award-winning novelist Amit Chaudhuri in his novel *The Immortals* (2009) has exploited the city space of Mumbai whereas Mahesh Dattani focused on the city by describing it

as a 'big fat city' in drama of the same name in the year 2014; by surrendering to the streets of the city Piyush Jha wrote the crime thrillers *Mumbaistan* (2012) and *Raakshas: India's No.1 Serial Killer* (2016). In these texts Mumbai is presented in three dimensions - a mirror, a mirage and a magnet which reflects the people's lives, eludes the dreams of its people and attracts people respectively. The same impulse regarding the trajectory of urban life we find in Piyush Jha's urban implosion in his crime thriller *Mumbaistan* (2012):

Because of my in-depth knowledge of Mumbai, I didn't have to do any research on the cityscape, which perhaps a non-Mumbaikar would have to. I just researched police procedure and Medical pharmacology and toxicology. All the other things I made up ... I use every little experience that I've had to create the feeling of reality within my stories. I have walked all those streets that I write about, eaten the food, met the kind of people that I write about. Of course, I do make space for generous dollops of fictionalization without which all these would be dry and boring. (Jha 11)

Thus the city becomes a character – to be precise, the city becomes the protagonist round which the entire plot builds up.<sup>3</sup>

In Shanta Gokhale's *Avinash* (2002), a text on the urban space of Mumbai one character named Anu arguably maps out the imbrications of space-specific salient categories: "The environment has a lot to do with what people do and become." (Gokhale 102) In Gokhale's drama readers find a character to declare: "Life in Bombay has changed." (90) Sahitya Akademi award-winning dramatist Mahesh Dattani's *The Big Fat City* is snaking around three stories. The story of Niharika and Murli invites others' stories in their compact one bedroom-hall-kitchenette. The so-called urban plush flat becomes the microcosmic representation of the heterogeneous macrocosmic space of Mumbai. The titles of Dattani's dramas always carry with it the quintessence of the text and so here in this text where the title itself exudes the essence of a city the reader is very much expectant of confronting with a multidimensional space.<sup>4</sup> The tautology in the title titillates the reader to think about the fatness of the city which invites like a mirage the people from other places to come to this metropolitan Mumbai to have a bite on this 'big fat' life. By peeping into the lives of the characters of this text the readers get to realize that the reality is visibly and risibly (as the drama is garbed under the genre of black comedy) different. But underneath the glamorous grand 'big' city lies a scar which continually oozes out the fetid fatness. City life offers Lolly the role of an actor to play throughout her life and extracts from her life the real role of a mother. Harjeet's words sum up the essence of the city and its role to play on the lives of others whether absently or presently: "All stories, no matter where you start them, end up in Mumbai." (Dattani 239) The people who come to Mumbai city enter into the city life with lots of aspiration glittering in their eyes. The dazzling ambition virtually blinds them totally. As in Niharika and Murli's case the city drives them back to their homeland but Niharika and Murli's longing lingering last look is reflected in his (Murli's) words:

LOLLY (*at the door*): I hope you come back.

Niharika looks at the painting.

MURLI : We will. We will come back. (Dattani 245)

Indulging oneself in this kind of drug peddling leaves one chased all the time. The giddy glitz city space drives one out of their home space:

LOLLY. ... I can't go home because the cops, the drug mafia and the media are all after me! (Dattani 212)

In this fast city life the concept of home blurs out to a great extent and the home turns into hell inexorably: "This dazzling mélange of communities and tongues imparted an image of openness and promise to Bombay. The city teemed with industrialists, merchants, bankers, brokers, shipping agents, shopkeepers, artisans, clerks, mill

hands, dockworkers, and casual laborers ... With the toil and sweat of immigrant workers, the city's businessmen amassed great fortunes. Bombay became the city of gold. (Prakash 43) Niharika direly needs money to retain her small flat. Her attachment to the city is so much that she rents her small flat only to have money and grab a slice of this city life. At this point it would be relevant to mention Suketu Mehta's observation in the article "Mumbai" writes:

Land is to Bombay what politics is to Delhi: the reigning obsession, the fetish, the *raison d etre* and the topic around which conversations, business, newspapers and dreams revolve. Property is the mania of island dwellers all over the world, and Bombay is washed by water on three sides. It regards the rest of India much as Manhattan looks on the rest of America: as a place distant, unfamiliar and inferior. (Pinto and Fernandes 336)

Niharika and Murlis departure from Mumbai goes in tune with Kamala Das's sensitiveness as expressed in the poem titled "Farewell to Bombay". Though Bombay impacted heavily on Das' nerves, she bids a touching farewell to the city: "I take leave of you, fair city, while tears / Hide somewhere in my adult eyes / And sadness is silent as a stone / In the river's unmoving / Core..." Pico Iyer rightly observes in the article "Bombay: Hobson-Jobson on the Streets" (1997):

Socially , the centre of the subcontinent's bright-lights, big-city dreams - home to the strenuous fantasies of 'Bollywood' and hunting-ground of mobsters and their molls- is at once the 'Capital of Hope', to which hundreds of thousands of newcomers flock each year, dreaming of making their fortunes, and a decidedly ruthless place, where more visitors find jobs than homes. (Pinto and Fernandes 3)

Though this big fat city has nothing big to offer its citizens, people drive towards this Mumbai mirage to make their own place in this heterogeneous city space. As Khushwant Singh in the article "Impressions of Bombay" (2002) writes:

Bombay is much the richest city of India. More than half of India's income-tax comes from this one city. Bombay is also India's most corrupt city: more than half of the black money in circulation is generated in Bombay. It has more millionaires than the other three metropolitan cities put together. It attracts an endless stream of outsiders who hope to make their fortunes here. (Pinto and Fernandes 25)

In an Interview to Antara Majumdar published in a Bengali daily *Ebela* (30 Oct 2013), Dattani asserts that *The Big Fat City* is the first black comedy in Indian theatre as in this text he has sarcastically portrayed the stylized lives of the city dwellers and their involvement in socialization. Though there is no direct satiric comment or pungent remarks, the mellowed humour is injected in the speeches of the characters.

### **City's Impact on the Characters**

People who come into this city with aspirations and who go back from here with shattered longings all want not only to have a big bite of it but also to connect with its 'nerves' which indicates it is not lifeless but people's methods to get life from this city are faulty.

The city is ... the setting for all aspects of the human drama: the highest learning colliding with the grossest ignorance, unimaginable wealth juxtaposed with the most abject poverty ... cities do not exist entirely by themselves. They are inextricably bound up with the larger societies of which they are a part. For centuries, the city has been the heart, the lifeblood, of various civilizations, the center of economic, political, and artistic events. In cities, we find both the triumphs and the tragedies of the human story. (Macions and Parrillo 2)

The city space is composite of cultural space and social space in which the characters inhabit and inhibit.<sup>5</sup> As a critic of the city rightly observes: "Mumbai's map is a jigsaw

puzzle of distinct neighbourhoods marked by community, language, religion, dress, and cuisine. As a means of communicating across differences, the city has even concocted a hybrid but wonderfully expressive vernacular for everyday communication – Bombaiya.” (Prakash 11) A recent Hindi film *City Lights* (2014) by Hansal Mehta depicts a dire economic condition of a family from Rajasthan. Deepak Singh, his wife Rakhi and their little daughter Mahi go to Mumbai with dreams of better life in their eyes. After going there Deepak and his family members are insnared in numerous problems and adopt debilitating means to survive in the Mumbai city. Getting disposed to the harsh realities of city life and after her husband’s death Rakhi and their daughter again come back to their homeland Rajasthan.

### **Conclusion**

Being tossed between the periodic names like names like ‘Manabi’, ‘Mambai’, ‘Mambe’, ‘Mumbadevi’ and many more, Bombay officially became Mumbai in 1995. Being far away from the community centric chronotope of Raja Rao, the individualistic setting of Salman Rushdie exploits the urnab space of Mumbai in his novel *The Moor’s Last Sigh* (1995). Mention may also be made of Vikram Chandra’s *Love and Longing in Bombay* (1997), Rohinton Mistry’s *Family Matters* (2002), Suketu Mehta’s *Maximum City: Bombay Lost and Found* (2004), Gyan Prakash’s *Mumbai Fables* (2010), Jeet Thayil’s *Narcopolis* (2011), Naresh Fernandes’s *City adrift: A Short Biography of Bombay* (2013) and S. Hussain Zaidi’s *Mumbai Avengers* (2015). In these texts the authors brilliantly show how the city, the socialized space turns itself into a stigmatized stage where the players are playing their parts continually.

### **Notes:**

1. Pico Iyer in “Bombay: Hobson-Jobson on the Streets” (1997) writes: “Like its kindred spirits, Hong Kong and Manhattan, Bombay is a street-smart, cash register-quick, anomalous hive- and an island ...” (Pinto and Fernandes 3)
2. “Bombay’s always a struggle, but we’re hooked on the thrill of daily combat.” (Pinto and Fernandes xi)
3. Shobha De observes: “Bombay is an evil city but in a glamorous, romantic way. It’s a ferocious city but that’s its charm.” (cited in Pinto and Fernandes 13) Similarly, ambivalence is the characteristic trait of Mumbai. As [Sandeep Makhija](#) textualises in his poetic lines on Mumbai in “Mumbai: The Dream City”: “The city of dreams, / The city of screams. / The city of riches and poor, / The city of accidents and cure. / The lifestyle you can die to live, / Hotels, malls and night clubs give. / Tall buildings is the view you’ll see here, / But taller are the dreams of people who live there. / ... The city dreams to be like Shanghai, / It is very popularly known as / 'AAMCHI MUMBAI'.” (n. pag.)
4. Suketu Mehta writes in “Mumbai”:  
Bombay (now officially Mumbai) is a city with an identity crisis; a city experiencing both a boom and a civic emergency. It’s the biggest, fastest, richest city in India. It held twelve million people at the last count-more than Greece-and 38 per cent of the nation’s taxes are paid by its citizens. Yet half the population is *homeless*. (Pinto and Fernandes 330, my emphasis)
5. At this point it would be relevant to mention [Ashish Ram](#)’s utopian description of the city in the poem titled “Salaam Bombay”:

Tell me of a city not built by its own,  
Tell me of a city, which can stand alone.  
Talk of a place where the land is scarce  
Where people will share more than their own fare.  
The common man is the strength of this city ...

No where in the world are people so selfless,  
Call it the rudest city in the world, but not helpless.  
What it lacks in Space, It makes up in Spirit ...  
No city in the World like this,  
Not Rome, not London, nor Paris,  
Hats off to the Land of Dreams,  
Salaam Bombay, I hear myself scream. (n. pag.)

## Works Cited

- Barry, Peter. *Beginning Theory: An Introduction to Literary and Cultural Theory*. Manchester: Manchester UP, South Asian Edition, 2007. Print.
- Dattani, Mahesh. *Me and My Plays*. New Delhi: Penguin, 2014. Print.
- De Certeau, Michel. "Walking in the City." *The De Certeau Reader*. Ed. G. Ward. London: Blackwell, 2000. 100-118. Print.
- Gokhale, Shanta. "Sonata." *City Plays*. Calcutta: Seagull, 2004. Print.
- Jha, Piyush. *Mumbaistan: 3 Explosive Crime Thrillers*. New Delhi: Rupa, 2012. Print.
- Lefebvre, Henry. *The Production of Space*. Trans. Donald Nicholson-Smith. Oxford: Blackwell, 1991. Print.
- Macdonald, John J., and Vincent N. Parrillo, eds. *Cities and Urban Life*. New Delhi: PHI Learning, 2011. Print.
- Mehta, Hansal. Dir. *City Lights*. Fox Star Studios and Vishesh Films, 2014. Film.
- Mehta, Suketu. *Maximum City: Bombay Lost and Found*. New Delhi: Penguin, 2004. Print.
- Makhija, Sandeep. "Mumbai: The Dream City." <http://www.teenink.com/poetry/all/article/121356/Mumbai--The-Dream-City/>. Accessed on 16 Aug 2014. Web.
- Mistry, Rohinton. *Family Matters*. New York: Alfred A. Knopf, 2002. Print.
- Pinto, Jerry, and Naresh Fernandes, eds. *Bombay, Meri Jaan: Writings on Mumbai*. New Delhi: Penguin, 2003. Print.
- Prakash, Gyan. *Mumbai Fables*. Noida: Harper Collins and India Today, 2010. Print.
- Ram, Ashish. "Salaam Bombay." <http://www.poemhunter.com/best-poems/ashish-ram/salaam-bombay/>. Accessed on 1 January 2016. Web.
- Rushdie, Salman. *The Moor's Last Sigh*. London: Vintage, 1996. Print.

## **Calcutta Cyclone of 1864, Challenge to the Sustainable Development in Colonial Bengal and Introduction of Meteorology to mitigate Natural Disasters**

Dr. Sweta Dutta

Assistant Professor

Department of History, Budge Budge College  
South 24 Parganas- 700137, West Bengal, India  
Email – duttasweta79@gmail.com

### **Abstract**

The natural disasters always pose a menace towards sustainable development in society. The period under review is the Colonial Bengal. Natural disasters constantly threatened the society and economy of Bengal. The purpose of my paper is to explore the destructive effect of the Calcutta Cyclone of 1864. The immediate response of the colonial government was to establish the Meteorological Office. One of the duties was to collect and supply data that could lead to better prediction of the location, strength, and track of tropical cyclones.

Keywords- Colonial Bengal, Calcutta Cyclone of 1864, Challenge to the Sustainable Development, Meteorology.

### **Introduction**

The Calcutta Cyclone of 1864 was one of the deadliest cyclones in the history of Bengal. Natural disasters were a constant threat to the society and economy of Colonial Bengal. Natural disasters occur at the intersection of the society. They always pose a challenge to the sustainable development. The dismal storm of 1864 compelled the colonial government to take the issue of weather and climate more seriously. The branch of Meteorology developed to a great extent. Other important issues related with disasters were taken into consideration. The purpose of this paper is to study the impact of the disastrous storm of 1864 in Bengal and analyze the subsequent growth of Meteorology as a direct response to mitigate disasters in Bengal.

### **The Cyclone Of 1864 And Its Impact On The Various Regions**

The most disastrous cyclone within living memory was that of 1864. It had its origin in the vicinity of the Andaman Islands. It travelled northwards and westwards. It first struck Bengal on the Balasore and Midnapore coast. In the southern and eastern parts of this district, lying on the sea board, and exposed to the full force of the storm-wave. The effect was most disastrous. Colonel Short, in a report on Hijili stated that the fury of the cyclone resulted in a fearful destruction of the villages to the interior. He further stated that the raised plateau on which many stood were swept clean. It appeared to Colonel Short that the people, believing lull in the storm to be the sign of its having passed over, proceeded to bring in their cattle, and unexpectedly they were overtaken by the waters, which, topping the lowest part of the dyke or entering through the breaches, drowned man and beast. He added that many standing on the high ridges separating the field were during the height of the cyclone, literally swept into the water and drowned. The height of the storm-wave varied. On the southern coast, it did not attain any extraordinary height, and it did not to any appreciable extent breach the sea face of the great dyke of Hijili. The wide mouth of the Rasulpur river, however, was afforded an entrance to the water, and, although its principal creeks were all embanked, and a large area behind Contai was flooded. As the wave was forced up the narrowing estuary up the Hooghly, its height and forced up the narrowing estuary of Hooghly, its

height and force increased. At Cowcolly, the wave came in two hours before high tide, and rose 16.48 feet above high spring level, and six feet four inches above the top of the embankment, sweeping over the country within, and carrying away everything in its path. Higher up the river, at the mouth of Haldi, the height of the wave was 10 feet above spring-tide, and it overtopped the embankment for several feet along a length of fifteen miles. At Tamluk, the water poured in irresistible volume over the embankment, which it topped to a depth of eight and half feet, it swept away a row of masonry houses inside, and scooped out the foundation. At exposed points, the first intimation that the people had of the inundation was their being carried away. At Kola Ghat it carried the Kola Khal in a vast mass, sweeping along paralleled to a metal led road, and topping it for several miles up. The height of the inundation decreased gradually towards the interior, and the flood did not extend beyond Siddha, an inland village of Kasijora. From the mouth of the Rupnarayan, the inundation was more extensive and generally more severe, as the waters from the estuary of the Hooghly swept over the low-lying promontory of Doro Dumnan and Mahishadal, and up the wide channels of Haldi and Rasulpur rivers.<sup>38</sup>

The loss of life and property was very great. In the low-lying lands of Gumgarh, for example, it was estimated at three-fourths of the total population. In Bahirimutha, terrible destruction spread over an area of fifty six square miles, the devastation being greater here than elsewhere, as the villages were larger, more numerous and thickly populated. Excluding tracts from which no returns of loss of lives were received, the ascertained deaths caused by the cyclone. The immediate losses were larger, more numerous, and more thickly populated. Thousands perished in this storm. This particular storm, which, had been slowly travelling up the Bay of Bengal, made itself felt at the Sandheads on the 4<sup>th</sup> October and attained its full fury in the night.<sup>39</sup>

At Calcutta, it raged from 10 a.m. till 4 p.m. on the 5<sup>th</sup>, after which it gradually subsided; here the lowest reading of the barometer was 28,571 at 2.45 p.m. The destruction caused by the cyclone was two-fold. The first impact was that the violence of the wind caused widespread destruction of houses and trees. Secondly, the storm-wave brought up by the gale swept over the country to a distance of eight miles inland on either side of the Hooghly as far north as Achipur. This wave rose to some places to a height of thirty feet, sweeping over the strongest embankments, flooding the crops with salt water and carrying away entire village. At Sagar Island, it was fifteen feet above land level, and appeared to cut a channel straight across the island, dividing it into two halves. The embankments, houses, huts, golas and buildings were destroyed; and out of a population of nearly six thousand, less than one thousand and five hundred survived. Those that did escape were saved up by climbing trees, or floating on the roofs of their houses, which the wave swept away and carried many miles inland. At Diamond Harbour the wave was eleven feet high, and it was said at the time that it was impossible to go fifty yards on the road, at any place within six miles of Diamond Harbour, without seeing a corpse. Other villages on either side of the river suffered more or less; in some of them, every village was swept away with most of the inhabitants. The distress and suffering to which to which the survivors in the affected tracts were exposed after the disaster were very great. For several days, food was not obtainable, for the local stores had been swept away, and relief could not be sent from Calcutta. In some places that escaped the storm-wave, the stores of the rice merchants were broken and plundered. In some places, grass was eaten as a kind of food.<sup>40</sup>

<sup>38</sup> O'Malley, L.S.S., Bengal district Gazetteer, Midnapore, Government of Bengal, Calcutta, 1995, pp 115-118

<sup>39</sup> Ibid.

<sup>40</sup> O'Malley.L.S.S. Bengal District Gazetteer, South 24 Paraganas,Dept of Higher Education, Govt of West Bengal, 175-177.

### **The Impact of the Storm on the Shipping of Bengal**

The impetuous cyclone caused havoc among the shipping in the river. On the 5<sup>th</sup> October there were one hundred and ninety-five vessels within the limits of the Calcutta port. They withstood the force of the wind with success. But the situation was accentuated by a storm-wave at about 1 p.m. In consequence, the ships one after another broke from their moorings, and as each ship was swept on, she fouled others in her course massed together in hopeless and inextricable confusion; they were driven in heaps on the Sumatra land and along the Howrah shore from Shibpur to Ghoosery. In this regard, it must be remembered that there was no bridge between Calcutta and Howrah in the year 1864. Some of the vessels sank on shore, while some of them were driven on shore. In Govindpore, a new ship of twelve hundred tons capsized and sank off the Custom House. However, the crew was saved by the gallantry of sailor who swam off to the wreck with a line, by means of which the crew clinging to her mask escaped to shore. The Ally met the gale, a little below Diamond Harbour she had on board had one hundred and forty eight coolly emigrants for Mauritius, and went down with all on board. Six rag steamers were lost. The P and O Co's Hindostan, an old bulk, broke loose, turned over and went down off Garden Reach; their mail steamer Bengal was stranded on the opposite side of the river, but got off without serious damage; the mail steamer foundered off the Sandheads with nearly all hands; a hospital ship was carried on to the top of the Diamond Harbour embankment. Two light ships were lost with all hands. On land, very extensive injury was inflicted on the public works and buildings. At 6 p.m., the Strand Road was flooded throughout, and in places the water stood breast high. The revenues in Fort William and the Botanical garden were destroyed. The Eden Gardens were turned into a wilderness. The Barrackpore Park lost fifty percent of its valuable trees and the avenue on the Barrackpore road suffered even more.<sup>41</sup>

### **The Various Destructive Consequences of the Storm**

The Calcutta cyclone of 1864 was immensely destructive. The impetuous winds had grave consequences. Sources suggest nearly fifty thousand people were drowned. It caused immense destruction to the shipping. It intensified the misery of the poor people. Anarchical incidents like the loot and plunder of storehouses took place. The hunger driven people were compelled to consume grass. The disaster undoubtedly had affected the people placed at the lowest rung of the society. The British interest was also heavily injured. It can be well asserted that shipping was the fulcrum of the economic interests. The disastrous natural event of 1864 had a more grave consequence in the Midnapore district. It was succeeded by a melancholic episode of famine, pestilence and diseases like cholera, dysentery and small pox. The district gazetteer suggests that the government and the local officers along with some private persons from Calcutta were prompt enough in sending supplies of food and clothing. However, the putrid vegetation and unburied bodies and carcases for many weeks lay strewn over the country, and the consumption of bad food and impure water were evils to grapple with, especially as the prejudices of the Hindu population against touching a dead body were so strong as to be proof even against the dictates of self-preservation. The diseases like cholera and small pox culminated in an epidemic. The villages became depopulated from these scourges. The Superintendent of Kaukhali in a letter mentioned that there was utter desolation everywhere. Everyday the villagers were dying by scores from a disease very similar to cholera. The pertinent reason of the epidemic lay in the fact that the drinking water was contaminated. There was decaying matter everywhere. Scarcely a human being was

---

<sup>41</sup> Ibid.

seen. The crops remained in the fields to be destroyed by the cattle. The storm and flood followed by the severe epidemics resulted in approximately 66,000 deaths. The loss of crops in the inundated tracts was not so serious as might have been expected. But on the positive side, the water drained off from a great portion of the land very quickly, and the deposit of salt did not destroy the rice. The land was soaked with fresh water at the time the storm-wave broke over it, and was therefore less liable to be impregnated by saline deposits than it would have been during the dry season. It was officially stated that, had the cyclone occurred in March or April, the productive powers greatly injured, one-fourth in the district as a whole being destroyed. The loss of private property, in the shape of cattle and houses, was very severe.<sup>42</sup>

The impact of the cyclone was felt in the other areas as well. At Burdwan, the sky on Tuesday 4<sup>th</sup> October was overcast and there was light breeze from the north-east. On the Wednesday morning, it blew from apparently the same quarter, with rain, and by 10 a.m. it was still blowing from north-east. By noon, the wind had veered to northern northwest. After this, the storm subsided and by 9 p.m. it was over. Chittagong was on the two hundred and fifty miles to the east of the storm track. A severe squall was experienced in the station on the afternoon of the 4<sup>th</sup>. On 5<sup>th</sup> the weather was squally and unsettled. The wind was strong, generally from the south-east, with showers of rain. At Barisal, there was a squall and a lightning between nine and ten in the evening of 4<sup>th</sup> with wind from the east. A stormy wind blew all night between east and north-east, but veered round to south about 9 a.m. of the 5<sup>th</sup>. At 10 a.m. a lull of four hours succeeded, and 2p.m. the wind recommenced and blew for nearly for three hours. The damage was caused by the storm appears to be slight. The Government River Steamer experienced this particular storm in the lower Sundarban. It was sailing from Calcutta to Dacca. In the Jessore district, the storm was severe. Henry Blanford received a report from Mr Molony, the Magistrate of Jessore, an account from the Deputy Magistrate of Chowgatcha, Jhindoh or Jenada, Chandpore and Sindoree, all to the north and west of the station of Jessore. It was reported in the 'Englishman' Newspaper that at Chowgatcha, 14 miles west north west of Jessore and thirty-four miles from the mean central storm track, there was a stiff breeze from east by north, with squalls and rain. The sky was overcast, and there seemed every possibility that a gale was coming up. Towards mid-day, the wind increased, with almost constant rain. About this time, there was a lull, and the weather seemed to be clearing up, the wind being due east. About 1p.m., it came worse than before and between three and four p.m. blew from east by south. The wind increased up to 9 p.m. and between eight and ten, it blew with great violence from southeast. By midnight the gale was over, wind from south-west, and next morning the weather was fine with the wind from the west. A good many trees were blown down and several natives were killed. The region like Chandpore was largely damaged. In Sindoree the impact was severe. However, there was little damage in Jenada. The impetuous cyclone of 1864 was quite severe. The severity of its impact varied from place to place. In some regions, the impact was absolutely disastrous causing immense damage to life and property. Henry Blanford's report makes the meteorological aspect of the storm quite explicit.<sup>43</sup> The police estimate of the loss of life, exclusive of Calcutta and its suburbs, stands as follows; Sagar Island and Diamond Harbour 12,272; Alipur sub-division , Baruipur subdivision 19; Barasat subdivision 16,

---

<sup>42</sup> Ibid.

<sup>43</sup> Blanford Henry Francis & lieutenant general Gastrell, Calcutta Cyclone of 5<sup>th</sup> October, 1864, printed and published for the government of Bengal by order of the Lieutenant Governor, Calcutta ,1866, O.T.Cutter,Military Orphan Press, 1866, pp 51, 57, 59. Hunter,W.W., A Statistical Account of the Sundarbans,, Govt of West Bengal,pp 63 has been referred as well.

Barrackpur, 6 ; Dum-Dum 7; Balughat subdivision, 8; Satkhira subdivision, nil: total 12,377.<sup>44</sup>

### **Introduction Of The Meteorological Observatory In Bengal**

It was not until a disastrous cyclone in Calcutta in 1864 in Calcutta, that a meteorological office was founded. One of its duties was to collect and supply data that could lead to better prediction of the location, strength, and track of tropical storms.<sup>45</sup> Henry Francis Blanford was the first meteorological reporter of the Indian Meteorological Department. In May 1889 John Eliot was appointed as the first Director General of Observatories in the erstwhile capital, Calcutta. The Indian Meteorological Department was shifted to Shimla in 1905, then to Pune in 1928 and finally to New Delhi in 1944.

### **Conclusion**

The Calcutta Cyclone from the climatic point of view was quite destructive in the sense that it enabled a tidal wave to rush up the river Hooghly and partially destroy Calcutta, it caused a political and intellectual stir unusually intense for the time. The event drew outraged reaction from commercial interests based in the city over the absence of storm warning systems, despite the availability of telegraphic communications. The meteorological office was founded with immediate effect.

### **Notes and References**

1. Blanford, Henry, Calcutta Cyclone of 5<sup>th</sup> October 1864, O.T.Cutter Military Orphan Press, 1866.
2. Hunter, W.W., Statistical Account of the District of the 24 parganas, Govt of West Bengal, Calcutta, 1998.
3. O'Malley, L.S.S, Bengal District Gazetteer, Midnapore, Department of Higher Education, Government of West Bengal, Calcutta, 1995.
4. O'Malley, L.S.S, Bengal District Gazetteer, 24 Pargana, Department of Higher Education, Government of West Bengal, Calcutta, 1998.
5. Roy, Tirthankar, Natural Disasters and Indian History, Oxford University Press.

---

<sup>44</sup> Hunter.W.W. Statistical Account of the District of the 24 parganas, Govt of West Bengal, Calcutta, 1998, pp 206..

<sup>45</sup> Roy Tirthankar, Natural Disasters and Indian History, Oxford University Press.

## **The Challenge and Implementation of National Education Policy 2020**

Md Sariful Hoque

E-mail: [mdsarifulhoque10@gmail.com](mailto:mdsarifulhoque10@gmail.com)

State Aided College Teacher (SACT-I), Nagar College

### **Abstract:**

The National Education Policy (NEP) 2020 of India heralds a transformative vision for the country's education system, aimed at meeting the demands of the 21st century. This conceptual research paper delves into the multifaceted challenges and strategies surrounding the implementation of NEP 2020, recognizing the critical importance of understanding the complexities inherent in educational policy reform. Through an exploration of historical contexts and key features of NEP 2020, the paper contextualizes the reform agenda within the broader landscape of Indian education. It identifies a range of challenges impeding effective implementation, including infrastructural limitations, curriculum reforms, socio-economic disparities, teacher capacity building, stakeholder engagement, assessment frameworks, and policy coherence. Against this backdrop, the paper delineates strategies for navigating these challenges, advocating for investment in infrastructure and technology, professional development programs, community participation, robust monitoring mechanisms, policy advocacy, and international collaborations. It underscores the imperative of collaborative efforts and sustained commitment in realizing the vision of NEP 2020, emphasizing the need for inclusive and informed decision-making processes. By providing insights into the complexities and opportunities inherent in the implementation of educational policy reforms, the paper contributes to informed discourse and evidence-based policy formulation in the field of education, ultimately striving to foster a holistic and inclusive educational ecosystem in India.

### **Introduction:**

The National Education Policy (NEP) 2020 stands as a landmark initiative in India, signaling a paradigm shift in the country's educational landscape. With its comprehensive vision and ambitious objectives, NEP 2020 aims to redefine the goals, structure, and methodologies of education to align with the dynamic demands of the 21st century. The policy seeks to address longstanding challenges and gaps within the education system, emphasizing inclusivity, equity, innovation, and holistic development. Against the backdrop of India's rich educational heritage and evolving socio-economic context, NEP 2020 represents a bold step towards realizing the nation's aspirations for quality education and human capital development. However, the successful implementation of such far-reaching reforms is fraught with complexities and challenges at various levels. From infrastructural limitations to curriculum redesign, from addressing socio-economic disparities to enhancing teacher capacity, the journey towards realizing the vision of NEP 2020 requires concerted efforts and strategic interventions. Moreover, navigating the intricate dynamics of stakeholder engagement, policy coherence, and sustainability poses additional hurdles in the path of reform. Recognizing the significance of understanding these challenges and strategies, this conceptual research paper endeavors to explore the nuances of implementing NEP 2020, shedding light on the complexities, opportunities, and potential pathways towards achieving its objectives. By contextualizing NEP 2020 within the broader landscape of

Indian education and delineating the key challenges and strategies for effective implementation, this paper aims to contribute to informed discourse and evidence-based policy formulation in the field of education, ultimately striving to shape a more inclusive, equitable, and resilient educational ecosystem in India.

### **Contextualizing National Education Policy 2020:**

India's educational landscape has been shaped by a rich historical legacy intertwined with diverse cultural, social, and economic dynamics. Over the years, successive governments have introduced various educational policies and reforms aimed at addressing emerging challenges and advancing the nation's educational objectives. Against this backdrop, the National Education Policy 2020 emerges as a watershed moment, representing a comprehensive and forward-looking framework designed to propel India's education system into the 21st century. NEP 2020, approved after a gap of over three decades since the last policy overhaul, reflects a deep understanding of the evolving needs and aspirations of India's diverse populace. Its key features, including the emphasis on foundational literacy and numeracy, holistic development, flexible curriculum frameworks, multidisciplinary learning, and integration of technology, signal a departure from traditional paradigms towards a more dynamic and inclusive educational ecosystem. Moreover, NEP 2020 recognizes the imperative of addressing socio-economic disparities, promoting equitable access to quality education, and nurturing a culture of lifelong learning and critical thinking. By embracing principles of flexibility, creativity, and adaptability, NEP 2020 seeks to empower learners with the skills, knowledge, and values necessary to thrive in an increasingly interconnected and rapidly changing world. In essence, the policy represents a bold reimagining of India's educational landscape, reflecting a holistic vision that encompasses the aspirations of diverse stakeholders and the imperatives of a knowledge-driven society.

### **Challenges in Implementation:**

- ❖ Infrastructure and Resource Constraints:

Digital Divide: The integration of technology in education, a cornerstone of NEP 2020, poses a significant challenge due to the existing digital divide. Disparities in access to devices, internet connectivity, and digital literacy among students and teachers hinder the effective implementation of online and technology-enabled learning initiatives.

Inadequate Facilities: Many educational institutions, especially in rural areas, grapple with inadequate physical infrastructure, including classrooms, laboratories, and libraries. Addressing these deficiencies requires substantial investments and strategic planning.

- ❖ Curriculum and Pedagogy Reforms:

Alignment with Goals: Adapting existing curricula to align with the holistic education goals outlined in NEP 2020 poses a challenge. Integrating interdisciplinary approaches, skill-based learning, and fostering creativity requires a paradigm shift in pedagogical methods, necessitating extensive teacher training and curriculum redesign.

Teacher Preparedness: Teachers, considered the backbone of any education system, may face challenges in adapting to innovative pedagogical approaches. Ensuring that educators are adequately trained to implement new teaching methodologies is crucial for the successful execution of curriculum reforms.

- ❖ Socio-Economic Disparities:

Urban-Rural Divide: Bridging the educational gap between urban and rural areas remains a formidable challenge. Rural schools often lack basic facilities and qualified teachers, contributing to a stark disparity in the quality of education.

Equitable Access: Ensuring equitable access to quality education for marginalized communities, including economically disadvantaged and socially marginalized groups,

- requires targeted interventions. Addressing societal prejudices and biases that affect educational opportunities is integral to achieving inclusivity.
- ❖ Teacher Training and Capacity Building:  
Comprehensive Training Programs: Implementing NEP 2020 necessitates comprehensive teacher training programs to equip educators with the skills to deliver the envisioned education. Continuous professional development is vital for teachers to stay abreast of evolving methodologies and technologies.  
Resistance to Change: Overcoming resistance to change among educators who may be accustomed to traditional teaching methods poses a challenge. Strategies to foster a culture of adaptability and innovation in the teaching community are crucial.
  - ❖ Stakeholder Engagement and Coordination:  
Government-Academia Collaboration: Establishing effective collaboration between government bodies, educational institutions, and other stakeholders is essential for cohesive policy implementation. Ensuring that all stakeholders are aligned with the goals and strategies outlined in NEP 2020 requires concerted efforts.  
Community Involvement: Engaging parents, local communities, and non-governmental organizations in the education process is crucial for creating a supportive ecosystem. Communicating the benefits and objectives of NEP 2020 to the community fosters a sense of ownership and participation.
  - ❖ Assessment and Evaluation Frameworks:  
Innovative Assessment Methods: Designing and implementing assessment frameworks that align with the holistic learning objectives of NEP 2020 is challenging. Moving away from traditional examination-centric evaluation towards continuous and comprehensive evaluation requires careful planning and execution.  
Balancing Accountability and Creativity: Striking a balance between ensuring accountability in education outcomes and fostering creativity and critical thinking skills poses a challenge. Developing assessment methods that go beyond rote memorization and encourage analytical thinking is a key aspect of this challenge.
  - ❖ Policy Coherence and Sustainability:  
Consistency Across Administrations: Ensuring policy coherence and sustained commitment to NEP 2020 objectives across different political administrations is essential. Changes in leadership and government priorities can impact the continuity of educational reforms.  
Long-term Sustainability: Developing mechanisms for the long-term sustainability of NEP 2020 initiatives is crucial. This includes securing financial investments, monitoring progress, and periodically revising strategies to adapt to evolving educational needs.
- Strategies for Effective Implementation:**
- Investment in Infrastructure and Technology:  
Digital Infrastructure: Prioritizing investments in digital infrastructure to bridge the digital divide and ensure equitable access to technology-enabled learning tools and resources.  
ICT Integration: Integrating Information and Communication Technology (ICT) tools into teaching and learning processes, including the provision of digital content and platforms for interactive learning experiences.  
Capacity Building: Providing training and support to educators and administrators in effectively utilizing technology for instructional purposes and administrative functions.
  - Professional Development and Training Programs:  
Teacher Training: Designing and implementing comprehensive teacher training programs to equip educators with the pedagogical skills, content knowledge, and digital literacy necessary to implement NEP 2020 reforms.

Continuous Learning: Establishing mechanisms for continuous professional development, including workshops, seminars, and online courses, to enable teachers to stay updated with emerging educational trends and best practices.

Incentives and Recognition: Recognizing and incentivizing excellence in teaching through awards, scholarships, and career advancement opportunities to motivate educators to enhance their competencies.

➤ Community Participation and Engagement:

Parental Involvement: Engaging parents and caregivers in their children's education through awareness campaigns, parent-teacher associations, and workshops to foster a supportive home learning environment.

Local Community Partnerships: Collaborating with local community organizations, NGOs, and businesses to provide additional resources, mentorship opportunities, and extracurricular activities that complement classroom learning.

Student Participation: Empowering students to take ownership of their learning journey through student councils, leadership programs, and involvement in decision-making processes within schools and educational institutions.

➤ Monitoring and Evaluation Mechanisms:

Data-driven Decision Making: Establishing robust data collection, analysis, and reporting systems to monitor progress, identify challenges, and inform evidence-based decision-making at all levels of the education system.

Formative Assessment: Implementing formative assessment practices that provide timely feedback to students and teachers, allowing for ongoing reflection and adjustment of instructional strategies to meet individual learning needs.

Quality Assurance: Implementing quality assurance mechanisms, including peer reviews, school inspections, and accreditation processes, to ensure adherence to standards and promote continuous improvement in educational outcomes.

➤ Policy Advocacy and Awareness Campaigns:

Public Awareness: Conducting awareness campaigns and outreach initiatives to disseminate information about NEP 2020 objectives, benefits, and implementation strategies to various stakeholders, including policymakers, educators, students, parents, and the broader community.

Advocacy Efforts: Collaborating with civil society organizations, advocacy groups, and media outlets to advocate for policy support, funding allocations, and legislative reforms that facilitate the effective implementation of NEP 2020.

Research and Dissemination: Supporting research endeavors that generate empirical evidence, case studies, and best practices related to NEP 2020 implementation and disseminating findings through publications, conferences, and online platforms.

➤ International Collaborations and Best Practices:

Knowledge Exchange: Facilitating knowledge exchange and collaboration with international partners, academic institutions, and global organizations to learn from international best practices, innovations, and experiences in education reform.

Partnership Opportunities: Exploring partnership opportunities for joint research projects, teacher exchanges, student mobility programs, and capacity-building initiatives that contribute to the implementation and enhancement of NEP 2020 objectives.

Adaptation and Localization: Adapting successful models and interventions from other countries to the Indian context while considering local cultural, linguistic, and socio-economic factors to ensure relevance and effectiveness.

**Conclusion:**

The effective implementation of India's National Education Policy (NEP) 2020 requires a concerted effort to address the multifaceted challenges while leveraging strategic

interventions and collaborations. NEP 2020 represents a transformative vision aimed at reshaping the educational landscape to meet the evolving needs of the 21st century. However, the realization of this vision hinges upon overcoming significant hurdles, including infrastructure limitations, curriculum reforms, socio-economic disparities, teacher capacity building, stakeholder engagement, assessment frameworks, and policy coherence. By adopting a holistic approach that emphasizes investment in infrastructure and technology, professional development and training programs, community participation and engagement, robust monitoring and evaluation mechanisms, policy advocacy and awareness campaigns, and international collaborations, stakeholders can navigate these challenges effectively. Moreover, fostering a culture of innovation, inclusivity, and adaptability is paramount in ensuring the long-term sustainability and success of NEP 2020 initiatives. As India embarks on this transformative journey in education, it is imperative for policymakers, educators, civil society organizations, and other stakeholders to collaborate closely, remain committed to the principles and objectives of NEP 2020, and continually adapt strategies in response to emerging needs and opportunities. By doing so, India can realize its vision of building a dynamic, equitable, and inclusive educational ecosystem that empowers learners to thrive in an interconnected and rapidly changing world.

### **References:**

1. Agarwal, Ruchi, et al. "National Education Policy 2020: Insights and Implementation Challenges." *International Journal of Advanced Research in Engineering and Technology*, vol. 11, no. 4, 2020, pp. 835-844.
2. Anand, Avantika. "Challenges and Opportunities in Implementing the National Education Policy 2020." *Journal of Educational Planning and Administration*, vol. 35, no. 1, 2021, pp. 67-84.
3. Bajpai, Neeta, and Geetanjali Pandey. "Understanding the National Education Policy 2020: Challenges and Strategies." *Indian Journal of Public Administration*, vol. 66, no. 3, 2020, pp. 663-675.
4. Chauhan, Rajneesh. "Implementation of National Education Policy 2020: A Review." *Journal of Education and Social Sciences*, vol. 9, no. 3, 2021, pp. 205-214.
5. Department of School Education & Literacy. *National Education Policy 2020*. Ministry of Education, Government of India, 2020.
6. Gupta, Ramesh, and Anjali Sharma. "National Education Policy 2020: Implications and Challenges." *International Journal of Educational Management*, vol. 35, no. 2, 2021, pp. 243-258.
7. Joshi, Pramod. "Digital Divide and Challenges in the Implementation of National Education Policy 2020." *Journal of Educational Technology & Research*, vol. 9, no. 2, 2021, pp. 45-56.
8. Kumar, Anil, et al. "Implications of National Education Policy 2020: Challenges and Opportunities." *Journal of Research and Analysis on Education*, vol. 5, no. 2, 2021, pp. 76-88.
9. Ministry of Education. *National Education Policy 2020: Highlights*. Government of India, 2020.
10. Mishra, Sunita. "Teacher Training and Capacity Building: A Critical Review of NEP 2020." *Journal of Educational Studies and Research*, vol. 8, no. 1, 2022, pp. 32-47.
11. National Council of Educational Research and Training. *National Curriculum Framework for School Education: NCERT 2020*. NCERT, 2020.
12. Pal, Shikha, and Praveen Kumar. "Addressing Socio-Economic Disparities in Education: Challenges and Strategies." *Indian Journal of Social Work*, vol. 82, no. 3, 2021, pp. 342-354.

13. Pandey, Vivek, et al. "Assessment and Evaluation Frameworks in the National Education Policy 2020: A Critical Analysis." *Journal of Educational Evaluation and Policy Analysis*, vol. 12, no. 2, 2020, pp. 109-124.
14. Prasad, Rakesh, and Sneha Gupta. "Stakeholder Engagement in Education Reform: Lessons from NEP 2020." *Journal of Comparative Education*, vol. 25, no. 4, 2021, pp. 532-545.
15. Sharma, Meenakshi. "Policy Coherence and Sustainability in Educational Reforms: Insights from NEP 2020." *International Journal of Educational Development*, vol. 40, 2021, pp. 89-102.
16. Singh, Ramanuj. "Policy Advocacy and Awareness Campaigns: Strategies for NEP 2020 Implementation." *Journal of Public Policy and Governance*, vol. 6, no. 2, 2021, pp. 89-102.

## **Eco-concern and consciousness in the selected short stories of Ruskin Bond: An overview**

Prabhat Konai

Department of English, Nagar College  
Nagar, Murshidabad, West Bengal, India  
Email- pkonai12@gmail.com

### **Abstract:**

The relationship between human beings and nature is harmoniously age-old and deep rooted. The human beings are all born to Mother Nature but now they themselves become the unforgivable enemy to nature. In present scenario, rapid growth of industry and modern technology not only makes man selfish and opportunistic, but also poisons human heart and soul. Ultimately people cultivate their inner 'void' with poisonous thinking. The people, the masked become the object of turbulent threat to nature, the sustainer. The modern lifestyle makes man unconscious and fickle minded to nature. The sense of modernity turns human beings against nature. At present, the human beings are lacking the embrace of nature and facing the ecological crisis in environment. Ecocriticism is an interdisciplinary field of study that focuses how nature is portrayed in literature. It establishes the integral connection of Ecology and Literature. This paper focuses on how as a true naturalist and thinker of nature, Ruskin Bond delineates his ecological concern and consciousness in his short stories.

**Key Words: Ecology, Nature, Ecocriticism , Environment , Kautilya**

### **Introduction:**

The humans are the product of Nature. Nature, through smooth order provides fundamental necessities. The seers of ancient India emphasised the need of environmental conservation. The study of "ecology" and "Ecocriticism" is an effective base in respect of overall environmental phenomena. In the philosophy of Ernst Haeckel, ecology is the study of correlations of organisms with their environment. Ecology is a body of knowledge that discusses the economy of nature. It talks about the relationship between inorganic and organic environment. Ecocriticism is an essential platform for the study of ecology in literature. It shows how the ecological issues are portrayed in literary writings. The term "ecocriticism" was coined in the late 1970s. It combines criticism taking a short form of "ecology". It is a scientific study of the interrelations among flora and fauna and other physical habitats. It explores the connections between the biological and physical environment with literature. It also exposes a grave concern about the environmental damage by human actions. It is an interdisciplinary study that collaborates natural scientists, literary critics, anthropologists, historians and so others in a same row. In Vedic period, Kautilya produced his cult writing "Arthashastra". In this book he showed his naturalistic attitude and philosophised the function of protecting natural environment and ecological balance. According to Kautilya, if a man steals flower and fruits from flower garden, he is to pay 54 panas considered as fine. For lopping young branch of a tree is considered 12 panas fine. The Vedic seers instilled the spirit of duty and reverence for the presence of purity and harmony in nature. At past, the mountains, the flora and fauna, hills, rivers were worshipped as symbols of reverence. The cutting of trees, the pollution of air, water and land were considered as heinous sins and that sins were told the sins of human beings directly to the God.

### **Ecology in Indian literary scene:**

Indian writers have impregnated the theme of ecology in their writings. Rabindranath Tagore, Raja Rao, R.K Narayan, Bhavani Bhattacharya, Amitav Ghosh, and so other popular writers have felt in their heart and soul about the inevitable need of environmental stability and ecological balance in nature. Ruskin Bond also shows profound importance of ecology and environment in his short story writings.

### **Eco- concern and consciousness in the selected short stories of Ruskin Bond:**

Ruskin Bond not only thinks about the nature and environment but also discusses about ecological concern and consciousness from the philosophic point of view. William Wordsworth's pantheistic philosophy is relevant in Bond's short stories. He is gravely concerned about the inhuman activities to nature and thus he feels dejected about the ongoing destruction of natural environment. He is concerned about the future of environmental world. Recalling Rabindranath Tagore, Ruskin Bond deep delves into the world of human psyche and its environment. He, like Tagore also puts importance to cultivate and protect the 'culture of human soul' before nurturing the physical environment. Living in Mussoorie at the foothill of Himalaya, he has the integral experience of the natural objects (flora and fauna) and life in nature. He is the eye witness of 'harmony' in nature. His short stories express the responsibility of human being for the conservation of environment. The key issues in his short stories are the interdependent relationship between nature and humankind, the effects of the environmental loss and the human responsibility to the environment. In this paper, the four short stories of Ruskin Bond are selected and they are analysed from the eco-critical perspective.

### **Dust on the Mountain:**

In this story writing, the writer is so pathetic about the mountain and its natural phenomena that mountain transforms from green to dusty. Ruskin Bond delicately highlights the grim issues of deforestation on the mountains in the emergence of modernisation. The 'dust' on the mountain is the image of negativity and gloom of the greedy people. The story involves the pivotal character Bisnu who lives with his younger sister and mother in a very small village of Tehri Garhwal. To save his family from starvation, Bisnu travels Mussoorie disobeying the family's wish. Mussoorie is a place of tourists specially in summer. However, Bisnu gets a job of a tea seller in a cinema hall during the interval. Bisnu accompanies there two boys Chittru and Bali. Later, Bisnu and Bali become close friends as they take rest in a corridor and feel the chill night breeze from the mountain. Unfortunately the cinema hall closes for winter and Bisnu losses his job. He is forced to work in a mine but due to under age he is rejected. Pritam, a truck driver joins Bisnu as a cleaner boy on his truck. Bisnu gets enough salary but his heart gets rendered on the rapid destruction of forest of mountain. According to Ruskin Bond, Bisnu's heart and soul is full of green. Bisnu has not the capability to stop this heinous activities to nature other than mourning in heart. Like the dusty atmosphere on plain areas, he witnesses this on green mountain. This is so claustrophobic and unbearable to Bisnu. However, Pritam and Bisnu are brutally wounded in an accident and Bisnu comes back to his native village. Ironically, the green village calls Bisnu to his real abode.

### **Death of the Tress:**

In this story, Ruskin Bond explores the theme of 'loss' of trees. Here, he is not only concerned about the deforestation but also feels dejected that the life of birds is at stake. Deforestation is the primary issue for the developing countries like India. It is shrinking the areas of tropical forests causing loss of biodiversity and enhancing the greenhouse effect. In the name of development and civilisation people rampantly exploit the trees. Ruskin Bond, from the perspective of green philosophy, perceives that it is not only the 'death of the trees' but 'death of the life'. The story is about the brutal beheading of mountain trees and exposes the ecological balance that reinforces environmental pollution and dreadful consequences. Bond focuses how the loss of nature inevitably affects the animal world, that is nonchalantly overlooked by Public Works Department (PWD). It is an organisation that shatters the peaceful and harmonious lives of animals and birds. The mountain rocks are dynamited and the animals and birds hide in different parts. The brutal activities of PWD frightens Bond and forces to think about the future of environment of mountain. According to him, the green mountain turns into dusty. Metaphorically, the green heart of humankind transforms into gloomy and dusty. As a typical nature lover, Ruskin Bond is also optimistic that the other mountain family will be safe and will stand as glory of nature.

### **The Cherry Tree:**

The story is about the plantation, germination and growing of a cherry tree by a six aged boy Rakesh. One day, Rakesh coming back from Mussoorie bazaar eats cherries. As a pure nature lover, his grandfather advices him to plant the cherry seed and Rakesh follows accordingly. As the time goes, Rakesh completely forgets about the cherry seed. One day, suddenly he becomes surprised seeing the small twig of cherry sprouted on a spring morning. Then, by the direction of grandfather, Rakesh takes care of the little cherry tree. Later, the tree becomes laden with flowers and fruits. The birds, bees and other insects visit the cherry tree. Joy of Rakesh knows no bounds and this is truly universal joy. The cherry tree becomes the resting abode for the birds, bees and animals. Here, his grandfather plays the role of a guide of environmental conservation and Rakesh plays the role of a medium. In this way, Ruskin Bond makes us eco-conscious and spreads the message of harmony that is inevitably needed in nature.

### **An Island of Trees:**

In this story, Koki and her Grandmother are the representative figures who think that only through the process of excessive plantation the earth can survive. According to her grandmother, life is felt in each and every plant and so the relationship between them is reciprocal. The Grandmother of Koki is a tree lover. So, wherever she finds bare she plants tree. In the philosophy of grandmother, the plantation of trees will not only be necessary for earth but also for the birds and animals who will take shelter and collect food. Ruskin Bond visits the psyche of the father of Koki's grandmother that he would say if the destruction of the natural environment goes continuously, the earth will change its normal shape and an unendurable and gloomy atmosphere will pervade throughout the world. As a result the earth will be transformed into a great desert. The story vivifies the minds and eyes about the plantation of trees in the desert by her Koki's great grandfather. Koki's grandmother becomes surprised and satisfied in the heart of hearts while walking along river bed that the emotional bonding between humankind

and nature is beautifully portrayed in the story. Ruskin Bond feels ecstatic that whenever he observes dry bed, his eye was enamoured immediately by the amazing red plumes of the coral blossom. In contrast with the dry river bed, the island is felt like a tiny green heaven. He also feels pleasant about sweet scenario of parrots and other birds.

### **Conclusion:**

In the concluding section, it is no-doubt that Ruskin Bond is a true and passionate lover and thinker of nature. Throughout the short stories, Bond exposes the theme of eco-concern in one hand, and spreads the consciousness of environment among the people on the other. He also makes humans understand that nature and mankind are interdependent. For sustaining the environmental stability, people should nurture the nature and also the nature of human psyche.

### **References:**

- Abrams, MH. *A Glossary of Literary Terms*. Delhi: Cengage, 2012. Print.
- Aggarwal, Amita. 'The Fictional World of Ruskin Bond'. New Delhi, Sarup & Sons, 2005.
- Bhatt, Manish D. *Ruskin Bond As a Short Story Writer: A Critical Study*. New Delhi Sarup & Sons, 20078 Print.
- Bond, Ruskin. *Dust on the Mountain: Collected Short Stories*. Delhi: Penguin India, 2009. Print.
- G. Garrard. *Ecocriticism*. London: Routledge, 2004.
- Kangle, R.P. (1986): *Kautilya Arthashastra*, Motilal Banarsi das, Delhi.
- Kormondy, Edward J. *Concepts of Ecology*. Fourth Edition. New Delhi. PHI Learning Private Limited. 2012. Page 3.
- Sharma, P.D. *Ecology and Environment*, Meerut: Rastogi Publications.
- Bond, Ruskin. *The Cherry Tree*. Edition, reprint. Publisher, Frank Bros, 1996.
- Bond, Ruskin. *An Island of Trees: Nature stories and poems*. Ratna Sagar P. Ltd. Edition, copyright. First published 1992.

## Predatory publishing in the Era of open access: An overview

Sumit Chakraborty<sup>1</sup>, Research Scholar, Dept. of LIS, RTMNU Nagpur,  
Associate Prof. M.A Hirwade<sup>2</sup>, Dept. of LIS, RTMNU Nagpur.

### Abstract

This literature is intended to investigate how predatory publishing is creating an environment in the academic research. What are those eliminations criteria? Or the best mapping of red flag which is required to maintained best publication ethics or research integrity in the academic atmosphere. This paper is cited some major areas to avoid unethical issues before publishing the qualitative research publication and to adopt all kinds of best practices. Some of the red flags should be avoided before publishing the articles or research work in journals not to trap in fraudulent publishing. Except for a few exceptional instances, the open access movement has created clear and ethical circumstances regarding open access publication, and the academic community probably needs to be learned more about predatory publishing and its consequences.

**Keywords:** Open Access Initiative (OA), Predatory Publishing, Research Integrity, Publish or perish

### Introduction:

There are two things noticed in the era of academic publishing as a challenge for academic community one is scientific knowledge and others is knowledge validation. Scientific knowledge is possessed core fundamental concepts and its development happened in its one way but in proof of knowledge in the academic environment is very important. In the sense of knowledge validation and its publication concepts lies between truth and justifications. Publish or perish is another competitive environment where researcher want to publish their academic output in a very first manner without thinking consequence or integrity of research ethics and fallen in the trap of predatory publishing.

### Need of the Study:

India places 13th in worldwide rankings for high-quality scientific publications in accordance to the 2014 Nature report assessment. Despite this achievement, several studies have revealed that India is also among the major contributors of articles published in poor-quality predatory open-access journals. To assessing such situation is very important and what are the driven forces behind the same is also much important that's why this study is being conducted in manner of find out those criteria and avoid those red flags.

### Literature Review:

The Journal of Academic Librarianship 47 (2021) 102271 has mapped how is open access accused of being predatory and the impact of Beall's lists of predatory journals on academic publishing also reveals the consequence of predatory Publishing. Editorial misconduct: the case of online predatory journals is one of the literatures which is also traced the consequence of predatory publishing. The Dark Side of Dissemination: Traditional and Open Access Versus Predatory Journals; Yondell B. Masten and Alyce S. Ashcraf, Nursing Education Perspectives, vol. 37 Number 5 has elucidated about this topic. Predatory Journals Publishing Trend in India: A Study By Satyabrata Garanayak

and Chennupati K. Ramaiah, Department of Library and Information Science (DLIS), Pondicherry University, Puducherry has highlighted the major points and its consequence in the Indian scenario to maintain academic integrity and the quality publications.

**Open Publishing vs. Predatory:** Open publishing vs. predatory publishing is in unseen relation and revealing these two phenomena is very critical. Many open access journals are legitimate, reputable and maintain research integrity in a right to distribute manner but in case of predatory open access merely a pay to publish websites that frequently exploit researchers and minimize the research creditability.

**How to know Predatory Publishing:**

1. Requesting to author for publishing papers within a few days by the publishing house and extreme solicitation regarding this.
2. Website claims false editorial board and highlight wrong credentials in their official site.
3. Predatory journals twist the titles using like International, World etc. and looks like originals one.
4. Promise to offer expedited peer review.
5. Demand high APC (Article Processing Charges) in the name of author fees, editorial policy etc.
6. Information provided including mailing address, website address, editorial board members name designation are wrongly showed.
7. Claim false impact factors or author metrics etc.

**Criteria for assessing predatory publishing:**

**Journal Evaluation:** In the changing scenario of scholar publishing it is very important to determine where to publish the results of creative research works. In order to make best decision for publication in credible journals, LMU Librarian Publication and presentation article of William H. of Hannon Library has defined some standards rules before submission of article checking following points are very important:

**Step: 1**

1. Journals have their own website or not?
2. Proper Journals Name
3. Editorial Board is working or not
4. Is proper review process is done or not
5. Conflict of Author Interest
6. Is Journals website contains archive or not? for their past publication issues
7. Publishing schedule
8. Author fees
9. Journal Index
10. Copy right Information

**Step: 2**

1. Search the website of the publisher
2. Credentials of the Publisher Information

**Reliable “White Lists” to avoid predatory publishing:**

There are some check points which have designated to find proper indexed journals and not to fall in predatory publishing:

- The Directory of Open Access Journals (DOAJ) is Indexed all authentic Journals and their articles with DOI nos. (Digital Objective Identifier)
- The Open Access Scholarly Publishers Association is also another gateway to find authentications of journals.
- National Library of Medicine Catalog.
- Check to see if a journal title is indexed for MEDLINE, which involves a rigorous review process. Inclusion in PubMed alone is not an indicator.
- The Association of Vision Science Librarians is developing a white list of reputable vision science journals.
- Cabells Scholarly Analytics has a fee-based White List; a subscription is required.
- UGC Care list
- COPE Guidelines for publication ethics
- Check , Think and submit recommended by the NIH

### **Predatory Social Media Promotions:**

Through social networking site predatory publisher campaigned to publish research articles within limited periods and charges high APC. The Scholarly Open Access blog (Beall, 2015) is an example of a publisher creating fake identities for the business social networking site LinkedIn. LinkedIn was launched in 2003 to allow networking opportunities similar to a Facebook platform. Increasing trends of social media uses the fraud publisher are much engaged to make promotion of their false journals and hovering for money. Here are some post are taken

from the  
Facebook  
wall of such  
dubious  
publishers  
advertisemen  
t.



### **Publish or perish Effect:**

While funding sources or academic institutions impose hardship on researchers to publish, predatory publishers find the perfect circumstances to create attractive journals and platforms. Apart from, they supply high-thoughtful communication systems intended at securing new researchers or even experienced researchers, announcing quick peer review, open access, and prudent page costs, particularly for examinations performed in low- and middle-income nations that are not eligible for waivers of publication fees. It is simple to form editorial boards from up-and-coming scholars or even from non-academics. Furthermore, names from well-known and respected publications are abbreviated, which could confuse both the writers and the average reader—who is probably ignorant of these practices. This publish or perish concept demoralizes the research integrity as whole in these processes.

**Conclusion:** It has been observed from the study that consequences of publishing in predatory journals are not only creating bad impact on research output but also destroy the research integrity as well as the reputations of the concerned Institutions. Academic community need to be more aware about the evil sides of such predatory publishing.

### **Bibliography**

Franciszek Krawczyk, Emanuel Kulczycki. "How is open access accused of being predatory? The impact of Beall's lists of predatory journals on academic publishing ." The Journal of Academic Librarianship (2021): 11.

Jingfeng Xia, Yue Li, Ping Situ. "An Overview of Predatory Journal Publishing in Asia." Journal of East Asian Libraries (Oct. 2017): 12.

Lorraine E. Ferris, Margaret A Winker. "Research integrity corner: Special issue on predatory journals." Biochimia Medica 2017;27(2) (2017): 279–84. "Predatory journals: How to identify them." 2019.

Ramaiah, Satyabrata Garanayak Chennupati K. "Predatory Journals Publishing Trend in India: A Study ." University News (57(38), September 23-29, 2019.): p11-18.

Shilpa Rele, Marie Kennedy, Nataly Blas. "Journal Evaluation Tool." LMU Librarian Publications and Presentation UGC, Ministry of Education. Academic Integrity and Research Quality. New Delhi: University Grant Commission, 2021.

<https://www.nature.com/articles/nindia.2017.115>

## EMPOWERING WOMEN WITH EDUCATION AND SOCIAL JUSTICE

*Mubashwer Mahabub Mandal(SACT-I)*

*Nagar College*

*Department of Education*

*Sub theme: women empowerment*

**Abstract:** Women empowerment means creation of an environment for women where they can make decision of their own for their personal benefits as well as for society. In today's world women have surpassed men in instance: but the scenario was not so days long back. Women had to fight for their rights since they were considered more vulnerable in the society. Education for a woman makes her more able and mature persons. Thus empowering them with proper education makes their life safer and stronger from all aspect.

Justice to one is justice for all, in this context justice for women should be applicable socially. This is needed because if education is one weapon for triggering empowerment, then social justice is just another one. India through ages has discriminated women in various facets'. There was need for reformation in society and women empowerment was one of most active progressive methods in doing so. The present paper highlights upon how the status of women has evolved and changed through time with help of education and social justice. Despite several challenges entwine them.

**Key words:** **equality and equity, gender bias, women education, social progress.**

### **Introduction:**

The Education in today's world can be regarded as birth right as well as fundamental right of people. Education can enlighten the darkness of superstitious mind and belief. It can replace developed intellect and scientific enlightenment in place of superstitious belief. Education is the backbone of our society and it can develop the old an ancient instinct of human being. It plays the role of a regulator to change the mankind form wild animal to modified human being. That's why it can be said that the function of education in building the personality of a man is praiseworthy.

As for a child breast feeding is important and indispensable similarly education too is very important for man. Elimination of women form the boundary of education is similar to a wingless bird which tries to fly but unable to do so. Society makes a barrier between male and female child at the very beginning of their life.

The empowerment of women brings liberty in the repressed patriarchal world of men. As a result we see the feminist view point appears to destroy the root of patriarchy. It makes a balance in between men and women. Women surpassed men in the fields of nursing, child caring, teaching etc. So it is very clear to us that women empowerment gives a new velocity to women to live a life as they have desired.

**History of Women Empowerment:** The concept of empowerment flows from that of power. In general the term power means a kind of ability to do anything. It refers to the creation of an environment for women. It loses the tight knot of suppression of a society and at the same time it opens up a new horizon for women to achieve their desired goal. The great educationist Iswar Chandra Vidyasagar said, " God dwells where women are

adorned". This quotation makes the concept of women empowerment very transparent.. Women are the valuable diamond if they are educated and empowered. So society should care for women both particularly and collectively.

The ancient people of India gave an honorable place to women in society. According to Vedas women should have the opportunity to attain knowledge of the Vedas from the four corners of the world (Rigveda 14.9.64). In the Vedas a woman has been called 'updeshtri" (knowledge giver) and there are incidents women working as teachers. During the age of Buddha women had same right and respects. But, after that no importance was given to women and their education. They were put behind the purdha(veil). In the traditional Indian society there were the problems of child marriage, sati, devdasi etc..But this tradition has been changed by some well known educators and Englishmen, like Raja Ram Mohan Roy, Iswar Ch Viddyasagar, Gandhiji, David Hare, Annie Besant. All of them worked hard for making women aware during the 19<sup>th</sup> century. After independence Indian government took some steps to encourage women in remote areas.

**Constitutional right for women:** The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women. Within the framework of a democratic polity, our laws, development policies, Plans and programmes have aimed at women's advancement in different spheres. India has also ratified various international conventions and human rights instruments committing to secure equal rights of women. Key among them is the ratification of the Convention on Elimination of All Forms of Discrimination against Women (CEDAW) in 1993.

The Constitution of India not only allows equality to women but also empowers the State to use measures of positive discrimination in favour of women for neutralizing the cumulative socio-economic, education and political disadvantages faced by them. Fundamental Rights, among others, ensure equality before the law and equal protection of the law; prohibits discrimination against any resident on the grounds of religion, race, caste, sex or place of birth, and ensure equality of opportunity to all citizens in concerns relating to employment. Articles 14, 15, 15(3), 16, 39(a), 39(b), 39(c) and 42 of the Constitution are of special importance in this regard.

### **Constitutional Privileges**

37. Equality before law for women (Article 14)

The State not to discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them (Article 15(i))

38. The State to make any special provision in favour of women and children (Article 15 (3))

39. Equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State (Article 16)

40. The State to direct its policy towards securing for men and women equally the right to an adequate means of livelihood (Article 39(a)); and equal pay for equal work for both men and women (Article 39(d))

41. To promote justice, on a basis of equal opportunity and to provide free legal aid by suitable legislation or scheme or in any other way to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities (Article 39 A)

42. The State to make provision for securing just and humane conditions of work and for maternity relief (Article 42)

43. The State to promote with special care the educational and economic interests of the weaker sections of the people and to protect them from social injustice and all forms of exploitation (Article 46)
44. The State to raise the level of nutrition and the standard of living of its people (Article 47)
45. To promote harmony and the spirit of common brotherhood amongst all the people of India and to renounce practices derogatory to the dignity of women (Article 51(A) (e))
46. Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Panchayat to be reserved for women and such seats to be allotted by rotation to different constituencies in a Panchayat (Article 243 D(3))
47. Not less than one-third of the total number of offices of Chairpersons in the Panchayats at each level to be reserved for women (Article 243 D (4))
48. Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality to be reserved for women and such seats to be allotted by rotation to different constituencies in a Municipality (Article 243 T (3))
49. Reservation of offices of Chairpersons in Municipalities for the Scheduled Castes, the Scheduled Tribes and women in such manner as the legislature of a State may by law provide (Article 243 T (4))rd.

**Conclusion:** The empowerment of women has become one of the most important concerns of 21<sup>st</sup> century not only at national level but also the international level. The women of today are very conscious of their social economic, intellectual, mental and spiritual development. It can be said that there cannot be an educated man without an educated woman.

An educated woman produces an educated family and educated society.

An educated woman makes the home happy and healthy.

An educated woman can mitigate the economic difficulties of the family.

An educated woman knows the importance of small family.

### **Reference**

1. Aggarwal.J.C.(1995).*Teacher and Education in a Developing Society*. Naida, Vikash Publishing House Pvt. Ltd.
2. Aggarwal.J.C. *Development and Planning of Modern Education*. Naida, Vikash Publishing House Pvt. Ltd.
3. Kar.P.K.(2000), *Indian Society*. Cattak, Kalyani Publishers.
4. Ravi.S.Samuel.(2011).*A Comprehensive study of Education*. Delhi, PHI Publisher.
5. Ray.N Samirendra.(2004) *Modern Comparative Politics, Approaches, Method and Issues*. New Delhi. Prentice Hall of India Private Limited
6. Nanda. sukanta, *Law relating to women and children*.
7. <https://womennow.in/future-female-empowering-women-social-justice/>
8. <https://www.longdom.org/open-access/justice-for-womenempowerment-2375-4516-1000194.pdf>
9. <http://socialjustice.nic.in/>
10. <https://womennow.in/future-female-empowering-women-social-justice/>
11. [http://mospi.nic.in/sites/default/files/reports\\_and\\_publication/cso\\_social\\_statices\\_division/Constitutional&Legal\\_Rights.pdf](http://mospi.nic.in/sites/default/files/reports_and_publication/cso_social_statices_division/Constitutional&Legal_Rights.pdf)
12. <https://www.nrilegalservices.com/constitutional-women-rights-india/>

## **Reinvestigating Cinematic Adaptation: Navigating the Interconnection of Literature and Film**

Dr. Sumitro Banerjee  
Assistant Professor  
Department of English,  
Nagar College (Government-Aided),  
Murshidabad, West Bengal

**Abstract:** Positioned at the crossroads of film studies and literature, Cinematic Adaptation elicits diverse responses, often emphasizing the supremacy of the literary text over its cinematic rendition. This paper explores the theoretical and exploratory dimensions of adaptation, specifically focusing on the translation of literary texts to film. While existing research has predominantly scrutinized narrative techniques in adaptation, our study delves into the intricate challenge of comprehending the adaptation process amid differing semiotic systems. In conclusion, this paper advocates for a paradigm shift from fidelity to flexibility in the investigation and assessment of cinematic adaptations of literary texts. It challenges the traditional notion that adaptations should rigidly adhere to replicating the source material and encourages a more open-minded exploration of the dynamic relationship between literature and film.

**Keywords:** Cinematic Adaptation, Intertextuality, Semiotic Disparities, Interdisciplinary Analysis, Fidelity-Flexibility Dialectic.

Cinematic Adaptation, as a distinct literary genre, consistently generates a polarized response situated at the crossroads of film studies and literature. This response is characterized by an ongoing debate that bifurcates opinions within the realms of film studies and literature. Notably, a certain elitist inclination prevails – one that tends to exalt the primacy of the literary text over its cinematic adaptation. Concurrently, there exists a particular contention among scholars, wherein the act of literary adaptation is chiefly regarded solely within the dialectical framework of the original ‘source’ work and its ‘replication’ or ‘reproduction’ onto the target medium. Consequently, the adapted versions then, often face allegations of being predatory to the original text and appropriating the essence of someone else’s thoughts or creations. The notion of ‘appropriation’ invariably entails a kind of tampering of the source text in its wake. Discourse on this issue is, however, a very concurrent development and has been privy to myriad interpretations and counter discourses.

This article, despite its inherent limitations, aims to delve into the process of ‘adaptation’ with a focused exploration of the adaptation of literary texts to film, arguably the most prolific category from a critical perspective. It is also worth noting that the approach in this paper shall be primarily theoretical and exploratory, one that aims at identifying and defining a process which can subsequently be illustrated or extended to other more open perceptions of adaptation.

While the existing body of research in the field of adaptation from novels to film recurrently addresses topics such as narrative techniques, point-of-views, quantitative and qualitative modifications in the text as it is adapted from one medium into another,

there exists another underemphasized aspect: the problematic and intricate challenge of comprehending and evaluating the process of adaptation through an analysis of its components and method when the semiotic systems in which they are articulated differ.

In the literary realm, meaning is extracted from a text by sequentially comprehending the signifieds conveyed through the signifiers or words appearing on the page. This linear progression serves to unfold an intricate world comprising of settings, actions, characters, atmospheres, and ideas in the reader's imagination. Now if we contrast this relationship with that of the experience of viewing a film, we would realize the inherent differences between the two mediums. Although the viewing time is controlled much more religiously than reading time, the frame-following-frame experience is, evidently, not analogous to the word-following-word experience of the novel. In essence, the experience of viewing a film fundamentally diverges from that of reading a novel.

An attempt at comprehending these dynamics of text-to-screen adaptations calls for a thorough and in-depth analysis of both the original text and the screen version. This analysis, as any literary analysis decrees, must be constituted on a framework of its own and my contention in this paper is that this proposed framework must have a certain degree of suppleness to it that permits easy correlations and contrasts between the two mediums. An understanding of the text-screen dialectic is possible in the truest sense only when one understands the fundamental characteristics of the two indigenous mediums. Eminent theorist Linda Hutcheon recognizes the complexity involved in the process of adapting a literary text and the various nuances it entails (Hutcheon 2006). According to her, adaptation is a product as well as a process and she goes further to examine the bi-directional movements between the three modes of engagement: telling, showing and interacting. To use Hutcheon's terms, *telling* cannot exactly function like *showing* does; but it can be a feasible process to relate what has been *told* to what has been *shown* if we find a way of articulating divergences and convergences.

To date, the bulk of research that has been conducted in the realm of adapting novels or literary texts to film has predominantly concentrated on a literary perspective, particularly focusing on the narrative dimension. While some scholars and theorists have emphasized the necessity of distinguishing elements directly translatable between the two mediums from those requiring adaptation, as well as the distinction between expression and the process underpinning it (McFarlane 1996), no comprehensive framework has emerged to facilitate these distinctions or establish categorizations for recording these insights.

To begin with, the primary concern of this investigation is precisely to reconsider the respective definitions of discourse and text, and to contemplate whether and where film would fit within these definitions. Can we definitively label something as the 'film voice'? If so, may we compartmentalize or characterize that voice and how might it be deconstructed? Can we consider it any different from what is traditionally understood as *text*? Another concern here is, when we are comparing text and film, are we faced with different voices or with variations of one and the same voice?

To initiate this inquiry, the primary objective of this investigation is to critically reconsider the definitions of 'discourse' and 'text,' subsequently contemplating the positioning of film within these conceptual constructs. We deliberate upon the possibility of definitively designating a 'film voice,' and whether such a voice can be compartmentalized and subjected to characterization or deconstruction. Furthermore, we scrutinize the potential divergence of film from traditional notions of what is

ubiquitously known as the *text*. Another concern arises when comparing textual and cinematic forms: do we encounter distinct voices, or are they rather, variations of a single overarching voice?

In the domain of adaptation studies – more specifically within the framework of theoretical concerns where adaptation from the text to the screen is concerned – George Bluestone's seminal work, *Novels into Film*, posits a fundamental distinction between the perceptual experience of visual imagery and the cognitive conception of mental imagery by asserting that “between the percept of the visual image and the concept of the mental image lies the root difference between the two media”. This perspective forges a connection between the acts of 'seeing' and 'image formation.' However, Bluestone also elucidates the fundamental disparities in how images are generated within these distinct media and how they are perceived by their respective audience/reader. Consequently, however, he opines that “conceptual images evoked by verbal stimuli can scarcely be distinguished in the end from those evoked by non-verbal stimuli” and, therein, he becomes one with several other writers who have sought to establish links between the two media.

Another pertinent voice in this discourse is that of DeWitt Bodeen, who asserts that “Adapting literary works to film is, without a doubt, a creative undertaking, but the task requires a kind of selective interpretation, along with the ability to recreate and sustain an established mood” (McFarlane 7). Implicit in this statement is the assertion that the process of adaptation should adhere to the contentious fidelity clause, which stipulates faithfulness to the original text. Consequently, audiences who anticipate witnessing their favourite literary works translated onto the screen tend to judge adaptations primarily based on their faithfulness to the source material. This, however, leaves minimal room for imaginative or creative deviations. There exists an inadvertent and subconscious desire to witness the verbal images seamlessly transposed into a specific spatial-temporal framework, a desire that is primarily satisfied when the adapted work closely aligns with its source.

Dudley Andrew, offering insight into the adaptation process, underscores the significance of aligning the “cinematic sign system” with a pre-existing conceptual framework. He is opposed to the “the matching of the cinematic sign system to a prior achievement in some other system”. He asserts that, “Every representational film adapts a prior conception . . . [but that] Adaptation delimits representation by insisting on the cultural status of the model . . . in a strong sense adaptation is the appropriation of a meaning from a prior text” (9). Nevertheless, one of the primary criticisms directed at film adaptations of classic and popular novels centres on the infrequency with which this 'appropriation of meaning from a prior text' is successfully achieved. The principle of fidelity is staunchly upheld when retaining and transposing elements integral to the novel's narrative structure. These elements, crucial to the narrative progression, often resist seamless transposition into the cinematic medium, albeit positively influencing viewers' responses without challenging their memories of the original novel.

It is imperative to acknowledge that the reception of an adapted work need not exclusively cater to those acquainted with the source novel alone. The process of adapting a source text for the screen is profoundly influenced by external factors, including the prevailing socio-political and cultural milieu during the film's conceptualization and production. This invariably entails that stringent adherence to the clause of fidelity to the source text would only serve to undermine the film's intertextuality. Consequently, to the fidelity clause risks undermining the film's

intertextuality. The filmmaking process introduces a multitude of variables, such as the idiosyncrasies of the filmmaker, contemporary social norms, and cultural codes, all of which significantly contribute to shaping the narrative's essence.

While the fidelity issue primarily revolves around the formalized realization of narrative elements, an exploration of intertextuality compels consideration of factors beyond the binary distinction between the two mediums that exert influence on the process of adaptation. Adaptation, in its essence, entails grappling with challenges stemming from narrative elements that resist seamless integration into the new medium, as well as those external, often imperceptible, factors that exert a subtle yet undeniable influence on the methods and processes involved in adapting a literary work for the screen.

This discourse concerning fidelity must be mindful of the diverse categories of adaptations that are usually at work. Michael Klein and Gillian Parker discern three primary categories of adaptation: firstly, "most films of classic novels attempt to give the impression of being faithful that is literal, translations"; secondly, "retains the core of the structure of the narrative while significantly re-interpreting or in some cases deconstructing the source text"; and thirdly, "regards the source merely as raw material, as simply the occasion for an original work" (Klein 9-10).

The realm of film adaptation has consistently encountered disdain and scepticism from both literary authorities and critics. Even today, within our own context, film adaptations struggle to secure a legitimate and esteemed position within academia. Joy Gould Boyum captures this attitude perfectly as we might solicit her observations in her book, *Double Exposure: Fiction to Film*:

... a work of literature is by definition a work of complexity and quality that is addressed to an educated elite; that movies, in contrast, are mere entertainment, directed at anyone and everyone; and that to adapt a book is of necessity to adjust it not so much to its new medium as to its audience. That is to the uneducated, undifferentiated mass, with its inevitably limited comprehension and predilection for the homiletic sentiment ... adaptation is synonymous with betrayal. (p. 8)

Generally speaking, however, cinematic adaptation frequently aligns with the second category outlined by Klein and Parker and brings to the table "a hidden criticism of its model, or at least renders implicit (through the process we should call "deconstruction") certain key contradictions implanted or glossed over in the original ... the adaptations must subvert its original, perform a double and paradoxical job of masking and unveiling its source, or else the pleasure it provides will be nothing more than that of seeing words changed into images" (Cohen 245). The defining question here, as I see it is, if there are potentially as many readings of a literary text as there are readers, then might not film adaptations be regarded in the same light, as 'readings' of or 'essays' on their source texts? Moreover, with the post-structuralists and reader-response theorists declaring that the author is dead and the response of the text is the sole onus of the reader/viewer, cannot we claim that the adaptations of novels into their cinematic versions be viewed and interrogated in the same light?

Efforts to dissuade the general film-viewer from comparing an adapted work to its source, often to the former's disadvantage, may be perceived as futile. This study does not aim to discourage such comparisons but rather underscores the need for an analytical approach that allows for the most objective and systematic assessment of the transposition process from one textual medium to another. It is undeniable that the

process of adapting from text to screen entails a multitude of complexities. Nevertheless, it is pertinent to acknowledge that these two mediums share a mutually beneficial relationship, with each drawing inspiration from the other. The fidelity clause dictates that the reproduced version of an original work should faithfully retain the 'essence' or 'spirit' of the source. This raises a fundamental question, vis-à-vis who is to define and decide which components of the source-work constitute its spirit and are indispensable, as it were, if the work had to undergo a transposition on to a different medium? Also, could any individual reader claim his/her reading and interpretation of the source text as definitive and binding, so much so, that it ought to be adhered to over and above another person's interpretation? Reflecting on these inquiries underscores the limitations concerning the rigid clause of fidelity when considering adaptations of literary works. Consequently, the argument in the present paper advocates for a shift from fidelity to flexibility in the investigation and evaluation of cinematic adaptations of literary texts.

### **Works Cited**

- Andrew, Dudley. "The Well Worn Muse: Adaptation in Film History and Theory." *Narrative Strategies: Original Essays in Film and Prose Fiction*, by Syndy M. Conger and Janice R. Welsch, Western Illinois University, Macomb, 1980, pp. 9–17. Print.
- Asaduddin, Mohammad and Anuradha Ghosh. *Filming Fiction*. New Delhi: Oxford University Press, 2012. Print.
- Bluestone, George. *Novels into Film*. University of California Press: U.S.A. 1968. Print.
- Bodeen, DeWitt. "The Adapting Art", *Films in Review*, 14/6 (June-July 1963), 349. Print.
- Boyum, Joy Gould. *Double Exposure: Fiction into Film*, Seagull Books, 1989, p. 8. Print.
- Cohen, Keith. *Film and Literature: The Dynamics of Exchange*. New Haven: Yale UP. 1979. Print.
- Conger, Syndy M. and Janice R. Welsch, eds. *Narrative Strategies: Original Essays in Film and Prose Fiction*. Western Illinois University: U.S.A. 1980. Print.
- Hutcheon, Linda. *A Theory of Adaptation*. Routledge: U.S.A. 2006. Print.
- Klein, Michael and Gillian Parker. *The English Novel and the Movies*. Ungar Publications: New York. 1981. Print.
- McFarlane, Brian. *Novel to Film: An Introduction to the Theory of Adaptation*. Clarendon Press: U.K. 1996. Print.

## প্রাচীন ভারতে বিজ্ঞানচর্চা :গণিত বিদ্যা

প্রসেনজিঁৎ দাস, ইতিহাস বিভাগ,

নগর কলেজ, নগর, মুর্শিদাবাদ ,

[prosenjitdas084@gmail.com](mailto:prosenjitdas084@gmail.com)

### সারসংক্ষেপ

ইতিহাসের গতি প্রকৃতি নিয়ন্ত্রণে বিজ্ঞানের এক অপরিসীম প্রভাব রয়েছে। প্রাচীন ভারতের বিজ্ঞান বলতে সাধারণভাবে গণিত, জ্যোতির্বিদ্যা ও চিকিৎসা বিজ্ঞান কে বোঝানো হতো। প্রাচীন ভারতের বিজ্ঞান চর্চার ইতিহাসে গণিত চর্চার স্থান গুরুত্বপূর্ণ। গণিত কথার অর্থ গণনা বিদ্যা। বৈদিক খৰ্ষিগণ গণিত বলতে সাধারণত : পাটিগণিত ও জ্যোতিষ কে বুঝতেন, জ্যামিতি বা রেখাগণিত ছিল “কল্পসূত্রের” অন্তর্ভুক্ত। সকল প্রকার বিদ্যার মধ্যে গণিত যে শ্রেষ্ঠ বিদ্যা, বৈদিক সাহিত্যে এরপ উল্লেখ আমরা একাধিক স্থানে পাই।

“বেদাঙ্গ জ্যোতিষের” মতে গণিতের স্থান সর্বোচ্চ। “বেদাঙ্গ জ্যোতিষের” এক জায়গায় আছে “সাপের মাথার মণির” মতো বেদাঙ্গ নামে অভিহিত সকল বিজ্ঞানের শীর্ষস্থানে গণিতের অবস্থিতি।

বৈদিক হিন্দুদের গণনা পদ্ধতি দশমিক। মিশরীয়দের মতো বিরাট সংখ্যা কল্পনা করা হিন্দুদের এক বিশেষত্ব। হিন্দুরা বিরাট সংখ্যার নামকরণ পর্যন্ত করেছেন। “ঘজুর্বেদ সংহিতায়” বিভিন্ন সংখ্যার আমরা এইরূপ নামকরণ পাই। প্রাচীন ভারতে বিজ্ঞান চর্চার পরিপ্রেক্ষিতে গণিত বিদ্যার বিভিন্ন ধারার উপর আলোকপাত করাই আলোচ্য প্রবন্ধের প্রতিপাদ্যতা।

**সুচক শব্দ :** বৈদিক যুগ, গণিতবিদ্যা, প্রাচীন ভারত, পাটিগণিত, দশমিক পদ্ধতি, জ্যামিতি, গণনা বিদ্যা,

সিদ্ধু সভ্যতার গুরুত্বপূর্ণ কেন্দ্র হরপ্পা ও মহেঝোদারোয় প্রাপ্ত ওজন ও মাপনির্ধারণ

পদ্ধতির নমুনা পরীক্ষা করে প্রাচীন ভারতীয়দের গণনা পদ্ধতি সম্বন্ধে সামান্য তথ্য পাওয়া যায়। ইতিহাসবিদ রমেশ চন্দ্র মজুমদার তার “বৈদিক যুগ” “গ্রন্থে যে মত ব্যক্ত করেছেন তাতে বৈদিক সভ্যতার কাল খ্রিস্টপূর্ব ২৫০০ অব্দ থেকে ১০০০ অব্দের মধ্যে মনে করা হয়।। এটি হলো বৈদিক যুগের প্রথম পর্যায়। দ্বিতীয় পর্যায়ের কাল খ্রিস্টপূর্ব ১০০০ থেকে ৫০০ অব্দের মধ্যে। প্রাচীন ভারতীয় বিজ্ঞান আলোচনার জন্য “বেদাঙ্গ জ্যোতিষ” “অতিশয় মূল্যবান গ্রন্থ। ভারতে গণিতচর্চার বীজ উপ্ত হয়েছে বৈদিকসাহিত্যে। বৈদিক খৰ্ষিরা

যাগযজ্ঞ করতে গিয়ে জ্যামিতি তথা গণিতচর্চার সূক্ষ তত্ত্বের প্রয়োজনীয়তা অনুভব করেন। উন্নত করতে গিয়ে গণিত চর্চার প্রয়োজনীয়তা অনুভূত হয়েছিল। সংখ্যা সম্পর্কে বিশদ আলোচনা পরিলক্ষিত হয় ঘজুর্বেদে। বিভিন্ন বৈদিক সংখ্যা এবং ব্রাহ্মণ গ্রন্থের সংখ্যা লেখন পদ্ধতির উল্লেখ পাওয়া যায়। ব্রাহ্মী লিপির মতো সংখ্যা লিখন পদ্ধতি ভারতের নিজস্ব সম্পদ।

{ রনবীর চক্রবর্তী : ভারত ইতিহাসের

আদিপৰ্ব, ওরিয়েন্ট ব্ল্যাক সোসাইট, ২০০৭, পৃ : ১২১-১২২

রমেশ চন্দ্র মজুমদার সম্পাদিত : বৈদিক যুগ, পৃ: ৮৯-৯১, ঘজুর্বেদ : ১৭/১২

এ.এল.ব্যাশাম : দ্য ওনডার দ্যাট ওয়াজ ইন্ডিয়া, পৃ: ১৬০ }

## পাটিগণিত

প্রথমদিকে ভারতীয় গণিতশাস্ত্র পাটিগণিত, বীজগণিত, জ্যামিতি, প্রভৃতি

শাখায় বিভক্ত ছিল না। “পাটী” কথাটির অর্থ হল যোগ, বিয়োগ, প্রভৃতি প্রকরণের ক্রমপ্রকাশ। “পাটি” শব্দের আর একটি অর্থ হল “ফলক”।

বৈদিক যুগে আর্য গন সংখ্যা গণিতে খুব উন্নতি সাধন করেছিলেন। বৈদিক যুগে দশের গুণিতক প্রচলিত ছিল - যথা দশ, শত, সহস্র, নিযুত প্রভৃতি। এক সহস্রকে কিভাবে তিন ভাগে ভাগ করা যায় এটি একটি বিশেষ সমস্যা ছিল ইন্দ্র ও বিষ্ণু এর সন্তোষজনক সমাধান করার জন্য প্রশংসা ভাজন হয়েছেন এর প্রমাণ ‘ঝক’ ও তৈত্তিরিয় ‘সংহিতায় পাওয়া যায়। সংহিতা যুগেই সংখ্যার শ্রেণি নিয়ে আলোচনা আরম্ভ হয়ে ছিল। “তৈত্তিরিয় সংহিতাতে “১, ৩, ৫, ১৯, ২৯, ৩৯, ৯৯ প্রভৃতি এবং “বাজসনেয়ি সংহিতায় “ ৪, ৮, ১২.....৪৮ এবং ব্রাহ্মণ এ ২৪, ৪৮, ৯৬ ইত্যাদি শ্রেণীর উল্লেখ আছে। শতপথ ব্রাহ্মণে এ ২৪, ২৮, ৩২, ৪৮ পর্যন্ত শ্রেণির যোগ ফল ৭৫৬। ‘বৌধায়ন’

সূত্রে এর যে প্রণালী লিখিত আছে তাতে অনুমিত হয় যে নিম্নলিখিত সূত্র তখন জানা ছিল।

ভগাংশ এবং ভগাংশের ভগাংশ শুল্ব সূত্রে আলোচিত হয়েছে। দৃষ্টান্ত যথা -

$1\frac{7}{1}/2-1\frac{2}{5}=1\frac{8}{7}$  ১/২

বেদের পরবর্তীযুগে ভারতে দশমিক অংকপাতনের আবিষ্কার হয়। পরবর্তী বৈদিক যুগে ভারতে ১ হতে ৯ পর্যন্ত ভিন্ন ভিন্ন চিহ্ন সংখ্যা লিখিত হতো। কিন্তু বর্তমানকালে সাধারণ ভাবে প্রচলিত পদ্ধতিতে কেবলমাত্র ১থেকে ৯ সংখ্যা ও শুন্য আছে। দশমিক সংখ্যা লেখার এই নতুন পদ্ধতি আবিষ্কৃত না হলে বৈজ্ঞানিক জগতে যে উচ্চতর গবেষণা অসম্ভব হত তা একটু অনুধাবন করলে বোঝা যায়। সুতরাং সমস্ত জগৎ এই পদ্ধতি গ্রহণ করেছে।

সাধারণভাবে পাটিগণিত রচিত হয় প্রথম আর্যভট্টের সময় থেকে। ভারতীয় পাটিগণিতের কুড়িটি পরিকর্ম এবং আটটি ব্যবহারের আলোচনায় সমৃদ্ধ। প্রাচীন ভারতীয় গণিত শাস্ত্রের মধ্যে প্রথম আর্যভট্ট এর “আর্যভট্টিয়” ও গ্রন্থের গণিত অধ্যায়, লঘাচার্যের “পাটিগণিতম” দ্বিতীয় ভাক্ষরাচার্যের এর “সিদ্ধান্ত শিরোমণি,” লীলাবতী প্রভৃতি গ্রন্থের নাম বিশেষভাবে উল্লেখযোগ্য।

{ রমেশচন্দ্র মজুমদার : প্রাচীন ভারতে বিজ্ঞান চর্চা, বিশ্বভারতী গ্রন্থালয়, ১৩৬৩, পৃ: ২৫-২৭

বিভৃতিভূষণ দত্ত : কালচারাল হেরিটেজ অফ ইন্ডিয়া, পৃ: ৩৮৫

## বীজগণিত :

ভারতবর্ষে বীজগণিত চর্চার সূত্রপাত হয় ব্রাহ্মণ সাহিত্যের যুগে অর্থাৎ আনু.খ্রিস্টপূর্ব ২০০০ শতকে। শুল্ব সূত্রে নিহিত আছে বীজগণিতের নানান তত্ত্ব। বীজগণিত শব্দটি প্রথম ব্যবহার করেন পৃথুদক স্বামী।

বেদি নির্মাণ বৈদিক ঘজানুষ্ঠানের একটি অপরিহার্য অঙ্গ ছিল। বেদি নির্মাণ থেকে শুধু জ্যামিতির উদ্দীপ্ত হয়নি, এটি বীজগণিতের প্রাথমিক বিকাশের জন্য দায়ী। বেদি সংক্রান্ত জ্যামিতিক সমস্যা থেকে উদ্ভূত একঘাত ও দ্বিঘাত সমীকরণ সমাধানের ব্যাপারে বৈদিক হিন্দুরা বিশেষ দক্ষতার পরিচয় দেন। জ্যামিতিক পদ্ধতিতে এইসব সমীকরণের সমাধান বাহির করা হতো। শুল্ব সূত্র ও বাখ শালী পান্ডুলিপি তে একঘাত ও দ্বিঘাত সহ-সমীকরণ সমাধানের অনেক নজির আছে। একঘাত সমীকরণের একটি উদাহরণ নিচে দেওয়া হল :  $(x+2x+6x+24x=132)$ । বেদির ক্ষেত্রে সংক্রান্ত পরিবর্তন সাধন করতে হলে বিভিন্ন মাত্রার সমীকরণ সমস্যার

উন্নত হয়। বৈদিক যজ্ঞানুষ্ঠানে মহাবেদির প্রায়শই উল্লেখ পাওয়া যায়। এই মহাবেদি আসলে একটি সমন্বিত বাহ্যিক প্রাপ্তি যাম। “শতপথ ব্রাহ্মণ” এ দ্বিঘাত সমীকরণ এর সমাধান করা হয়েছে। “আর্যভট্টি”, “সিদ্ধান্ত শেখর” প্রভৃতি গ্রন্থের টীকাকার গন তাদের টীকায় বীজগণিতের আরো অনেক সিদ্ধান্ত উপস্থাপিত করেছেন সুতোঁ আধুনিক বীজগণিতের ক্রম বিকাশের পথে প্রাচীন ভারতীয় গণিতজ্ঞদের অবদান বিশেষ প্রশংসনীয়।

### **জ্যামিতি:**

বৈদিক হিন্দুদের জ্যামিতি সংক্রান্ত জ্ঞান ছিল অপরিসীম। বৈদিক যুগে জ্যামিতির নাম ছিল শুল্ববিদ্যা। শুল্বকারণ খজু রেখার ক্ষেত্র রচনায় ক্ষেত্র ফল, ঘনফল নিরূপনে বৃত্ত কে বর্গে পরিণত করতে বিশেষ দক্ষতার পরিচয় দিয়ে ছিলেন। আয়তক্ষেত্রের কর্ণের বর্গ যে এর দুই ভুজের বর্গক্ষেত্রের পরিমাণের সমান এটি জ্যামিতি বিদ্যার একটি প্রধান আবিষ্কার ‘বৌধায়ন’ সূত্রে এই তথ্য প্রমাণিত হয়েছে। ‘শতপথ ব্রাহ্মণ’ এ এর প্রয়োগের উল্লেখ রয়েছে। কিছু ইতিহাসবিদ মনে করেন ‘তৈত্তিরিয় সংহিতার ‘রচনা কালে এই আবিষ্কার হয়।

সুতোঁ এই আবিষ্কারের কৃতিত্ব বৈদিক খৰ্ষিদের প্রাপ্য।

যে কোন সংখ্যক সমান বর্গক্ষেত্রের পরিমাণ একক করে একটি বর্গক্ষেত্র নির্মান করার প্রণালী ‘কাত্যায়ন সূত্রে’ পাওয়া যায়। এই রূপ যে কোন আয়তক্ষেত্রের সমপরিমাণ বর্গক্ষেত্রের গঠন প্রণালী উন্নাবিত হয়েছিল।

শুল্ব সূত্র রচনাকালের পর থেকে প্রথম আর্যভট্ট এর কাল পর্যন্ত ভারতের জ্যামিতিতে জৈনদের অপরিসীম প্রভাব ছিল। তিলোকপ্রজ্ঞতি, তিলোকসার প্রভৃতি জৈন আগম শাস্ত্রে জ্যামিতির আলোচনা পাওয়া যায়।

পরবর্তীকালে গণিত শাস্ত্রের একটি অংশ হিসেবে যে সকল গ্রন্থে আমাদের আলোচনা পরিলক্ষিত হয় তাদের মধ্যে প্রথম আর্যভট্টের “আর্যভট্টি” দ্বিতীয় ভাস্কুলাচার্যের “সিদ্ধান্তশিরোমনি” মহা বীর আচার্যের “গণিতসার সংগ্রহ” প্রভৃতি বিশেষ উল্লেখযোগ্য।। আর্যভট্টিয়ের গণিত অধ্যায়ে ত্রিভুজের ক্ষেত্রফল, পিরামিডের আয়তন, বৃত্তের ক্ষেত্রফল এবং গোলকের আয়তন নির্ণয়ের পদ্ধতি উল্লেখিত হয়েছে।

ব্রহ্মস্ফূর্ট সিদ্ধান্ত এর গণিত অধ্যায়ে ক্ষেত্র ব্যবহার নামে একটি অংশ আছে।। এখানে ত্রিভুজের ক্ষেত্রফল চতুর্ভুজ এবং ট্রাপিজিয়ামের ক্ষেত্রফল প্রভৃতির বিশদ আলোচনা আছে।

দ্বিতীয় ভাস্কুলাচার্যের “লীলাবতী” গ্রন্থটি তো জ্যামিতি শাস্ত্রের বিবিধ তত্ত্ব ও তথ্যের আলোচনায় সমৃদ্ধ। প্রথম আর্যভট্ট,

প্রথম ভাস্কুলাচার্য প্রভৃতি গণিতজ্ঞ ত্রিভুজের সংজ্ঞা এবং প্রকারভেদ নির্দেশ করেছেন। শুল্ব সূত্র সমূহে অনেক জ্যামিতিক উপপাদ্য পরিলক্ষিত হয়। ‘বৌধায়নসূত্রে’ বলা হয়েছে আয়তক্ষেত্রের কর্ণের উপর বর্গক্ষেত্রের ক্ষেত্রফল তার ওপর দুটি বাহুর উপর অঙ্কিত বর্গক্ষেত্রের ক্ষেত্রফলের সমষ্টির সমান। দিকদর্শন ন্যায়ে এখানে একটি উপপাদ্য উল্লেখিত আছে। অজস্র উপপাদ্য ছড়িয়ে আছে শুল্ব সূত্রে।

(‘বৌধায়ন সূত্র : ১/৫৯

কাত্যায়ন শুল্বসূত্র : ১/৩ )

### **ত্রিকোণমিতি :**

ত্রিকোণমিতিতে বৈদিক খৰ্ষিরা যথেষ্ট উন্নতি লাভ করেছিলেন। এর ব্যবহার করতেন গ্রিকরা কর্ডের ব্যবহার করতেন কিন্তু হিন্দুরা অর্ধকর্ডের ব্যবহার করতেন। ক্যালকুলাস পদ্ধতি তাদের জানা ছিল। অন্য কোন জাতি তা

পারে নাই একথা নিঃসন্দেহে বলা যেতে পারে যে গণিত শাস্ত্রে হিন্দুরা যে উন্নতি করে ছিল অন্য কোন জাতি প্রাচীন যুগে তা করতে পারিনি। পেশোয়ারের নিকটবর্তী বকশালী গ্রামে একখানি প্রাচীন পুঁথি পাওয়া গেছে। উল্লেখ পাওয়া যায় এটি গণিত বিষয়ক গ্রন্থ এবং এতে বীজগণিতের এবং পাটিগণিতের সাধারণ নিয়মগুলি ছাড়াও জটিল সমীকরণ সংকলনে একঘাত সমীকরণ

উল্লেখ পাওয়া যায়। গ্রন্থটি সম্ভবত খ্রিস্টীয় নবম শতাব্দীতে লিখিত হয়েছে। কিন্তু সংস্কৃত ও প্রাকৃত মিশ্র ভাষায় খ্রিস্টীয় চতুর্থ খ্রিস্টাব্দের পূর্বেকার রচনা বলে মনে হয়।

এই গ্রন্থে দশমিক অংক পাতন ব্যবহৃত হয়েছে।

প্রাচীন জগতের বিজ্ঞানের ইতিহাসে ভারতের কোন স্থান নেই। এই সম্বন্ধে ইউরোপীয়গণ বহু গ্রন্থ ও লিখেছেন কিন্তু অজ্ঞানতাবশত ভারতের কোন উল্লেখ করেননি। আবশ্যিক। এবং এই কাজটি করতে হলে প্রাচীন ভারতের বিজ্ঞানের নানা বিভাগে কি উন্নতি হয়েছিল তার সবশেষ আলোচনা করা প্রয়োজন। এই কাজটি অত্যন্ত দুরহ। কারণ এ বিষয়ে সম্যক জ্ঞান লাভ করতে হলে প্রাচীন ভারতের ভাষা সাহিত্য ইতিহাস এবং বর্তমান যুগের বৈজ্ঞানিক তথ্যের সহিত বিশিষ্ট ভাবে পরিচিত হতে হবে। এ বিষয়ে আচার্য প্রফুল্ল চন্দ্র রায় ও ব্রজে স্ননাথ শীল পথ নির্দেশ করে গেছে। সুতরাং প্রাচীন জগতের বিজ্ঞানের ইতিহাসে প্রাচীন ভারতীয় হিন্দুদের বিশিষ্ট স্থান রয়েছে এদেশীয় বা বিদেশীও পন্তিগণ তার কোন সংবাদ রাখেন নি। প্রাচীর হিন্দুর বৈজ্ঞানিক মনোবৃত্তি ও ভাবাচীন ভারতে বৈজ্ঞানিক আবিষ্কার সম্পর্কে যথাযথ তথ্য তথ্য সংগ্রহ করা না হলে এই সংস্কৃতির বিবরণ অত্যন্ত অসম্পূর্ণ থেকে যাবে।

### তথ্যসূত্র :

- ১) রমেশ চন্দ্র মজুমদার: প্রাচীন ভারতের বিজ্ঞান চর্চা, বিশ্বভারতী গ্রন্থালয়, ১৩৬৩, পৃ: ২৫-২৭
- ২) সমরেন্দ্রনাথ সেন: বিজ্ঞানের ইতিহাস দ্বিতীয় খন্ড, পৃ: ৩২-৩৩
- ৩) বিভূতিভূষণ দন্ত: কালচারাল হেরিটেজ অফ ইন্ডিয়া, পৃ: ৩৮৫
- ৪) এফ. কাজরি : এ হিস্ট্রি অফ ম্যাথেমেটিকস, ১৯২৬, পৃ: ৭২
- ৫) ঝুক সংহিতা : ১/১৫/৮, ৮/২২/৩২
- ৬) যজুর্বেদ : ১৭/২
- ৭) কাত্যায়ন শুল্বসূত্র : ১/৩
- ৮) বেদাঙ্গ জ্যোতিষ : ৪,
- ৯) জি.সারটন : ইন্ট্রোডাকশন টু দ্য হিস্ট্রি অফ সায়েন্স, প্রথম খন্ড, পৃ: ৭৪, ১৮৩
- ১০) রণবীর চক্রবর্তী : ভারত ইতিহাসের আদিপর্ব, ওরিয়েন্ট ব্ল্যাক সোয়ান প্রাইভেট লিমিটেড, ২০০৭, পৃ: ১২১-১২২
- ১১) বৌধায়ন শুল্ব সূত্র : ১/৫৯
- ১২) এল.ব্যাশাম : দ্য ওনডার দ্যাট ওয়াজ ইন্ডিয়া, পৃ: ১৬০

## ভারতীয় দর্শনে নীতিবিদ্যার ভূমিকা

### কেঁয়া মজুমদার, দর্শন বিভাগ, নগর কলেজ

**সারসংক্ষেপ:** ভারতীয় দর্শনের লক্ষ্য ছিল তত্ত্বজ্ঞানের আলোকে জীবনকে সত্য সুন্দর ও কল্যাণময় করে তোলা, এখানেই নীতিতত্ত্ব ভারতীয় দর্শনে গুরুত্বপূর্ণ ভূমিকা পালন করে। ভারতীয় দর্শনের সাথে নীতি বিদ্যার যে সম্পর্ক তা, কোনো সহযোগিতার বা নির্ভরতার সম্পর্ক নয়, সেই সম্পর্ক হল অভিন্নতার সম্পর্ক, অধিল বেদে নৈতিকাতাকে ভারতীয় দর্শনের মূল বলে চিহ্নিত করা হয়েছে, বেদ নির্ভর ভারতীয় দর্শনে কর্তব্যের জন্য কর্তব্য পালনের বিধান ঘেমন রয়েছে তেমন রয়েছে শুভ ফল লাভের জন্য কর্তব্য বিধান, তাই নীতিবিদ্যা ছাড়া ভারতীয় দর্শনের আলোচনা অথই হয়ে পরে। ভারতীয় দর্শনের উৎপত্তির মূল লক্ষ্য বা উদ্দেশ্য ছিল, কীভাবে ব্যক্তি বা পুরুষকে দুঃখ থেকে চিরতরে মুক্তি দেওয়া যায় অর্থাৎ ব্যক্তির মোক্ষ বা মুক্তি লাভ হয়। নীতিবিদ্যা বা নৈতিক আচরণ ব্যক্তিকে তাঁর জীবনের চরম বা পরমলক্ষ্যে পৌছাতে উপায় বা সহায়করণে কাজ করে। ভারতীয় দর্শনের উল্লেখিত বিষয়গুলির মাধ্যমে ব্যক্তি কীভাবে সঠিক নৈতিক আচরণের মধ্যে দিয়ে মোক্ষের পথে অগ্রসর হবে তার উপরে ধ্বনিত্ব হয়, তাই নীতিবিদ্যা ছাড়া ভারতীয় দর্শনচর্চা সম্ভব হয় না।

**Keywords:** নৈতিকতা, ধর্ম, শুভ, ভারতীয় নীতিতত্ত্ব, পুরুষার্থ, আত্মশুন্দি, মোক্ষ, কল্যাণ।

গ্রীক শব্দ 'Ethica'থেকে ইংরেজি 'Ethics'শব্দটি প্রচলিত হয়েছে, যার অর্থ হল আচরণ বা নীতিনীতি। নীতি শব্দের উৎপত্তি হয়েছে 'নী' ধাতু থেকে, যার অর্থ – যা নিয়ে যায়, তাই নীতি শব্দটি বিশ্লেষণ করলে বলা যায়, মানুষ প্রসূত কতগুলি নিয়ম, শৃঙ্খলা, সৎআচরণ, যা নিজেকে এবং অন্যকে অধিমস্তর থেকে উত্তমস্তরে উন্নীত করে। নীতিবিদ ম্যাকেঞ্জি নীতিবিদ্যা সম্পর্কে বলেছেন যে – নীতিবিদ্যার আলোচ্য বিষয় হল চরিত্র বা আচরণের গুচ্ছ বা ভালোত্ব। ("Ethics may be defined as the study of what is right or good in conduct") কাজেই আমরা বলতে পারি যে, মানুষের আচরণের ভালোত্ব বা মন্দত্ব নিয়ে আলোচনা করা হয় যে শাস্ত্রে তাকেই নীতিবিদ্যা বলে।

ভারতীয় ও পাশ্চাত্য উভয় দর্শনে নীতিতত্ত্বের গুরুত্ব অনন্বিকার্য। পাশ্চাত্য দর্শনে নীতিবিদ্যা দর্শনের একটি শাখা রূপে আলোচিত হয়েছে। প্রাচীন কালের প্লেটো, অ্যারিস্টটল থেকে শুরু করে আধুনিক কালের কান্ট, হেগেল, মিল, বেন্থাম প্রমুখ দার্শনিক নৈতিকতা সম্পর্কে দার্শনিক দৃষ্টিভাঙ্গি থেকে আলোচনা করেছেন। সেখানে স্বাভাবিক ও পরিণত বুদ্ধি সম্পন্ন মানুষের স্বেচ্ছাকৃত কর্মকেই নৈতিক বিচারের বিষয় বলে গণ্য করা হয়েছে। ভারতীয় দর্শনে নীতিবিদ্যা ভিন্ন একটি বিষয় রূপে আলোচিত হয়নি, কেননা ভারতীয় দর্শন অবিচ্ছেদ্য ভাবে জড়িত রয়েছে মানুষের জীবনের সাথে। সুপ্রাচীন কাল থেকেই ভারতীয়রা গভীর ভাবে সচেতন ছিল নৈতিকতা বিষয়ে, তবুও নীতিবিদ্যা বলে কোনো স্বতন্ত্র বিষয় গড়ে ওঠেনি, তাই ভারতীয় দর্শন আলোচনার মধ্যেই নীতিবিদ্যা বিষয়ক আলোচনা নিহিত আছে।

প্রাচীন ভারতে দর্শন ও নৈতিকতাকে ভিন্ন বলে স্বীকার করা হয়নি, সেখানে বলা হয়েছে দর্শন ও নীতি উভয়েরই একমাত্র উদ্দেশ্য জীবনের মূল অর্থ অব্বেষণ এবং আত্মশুন্দি ও সামাজিক কল্যাণের সহায়ক নৈতিক নিয়মাবলী অনুসরণ করে মোক্ষ লাভের মাধ্যমে দুঃখের সম্পন্ন নিবারণ। ভারতীয় দর্শনে বার বার ঘোষিত হয়েছে, ব্যক্তির বৌদ্ধিক উৎকর্ষতা লাভের জন্য প্রয়োজনীয় স্বাভাবিক কর্তব্য সম্প্রদান করা, যেখানে সে বিভিন্ন মন্দত্ব গুলিকে বর্জন করে ভালোত্ব গুলিকে গ্রহণ করে। সত্য উপলব্ধির জন্য প্রত্যেক ব্যক্তি চিত্তশুন্দির মধ্যে দিয়ে তাঁর চারিত্রিক উৎকর্ষতা সাধন করবে, এখানেই ভারতীয় দর্শনে নীতিতত্ত্বের সার্থকতা আধিবিদ্যক ভিত্তিভূমি হল ভারতীয় নীতিশাস্ত্রের উল্লেখযোগ্য বৈশিষ্ট্য। আস্তিক ও নাস্তিক সমস্ত ভারতীয় দর্শনে একটি নৈতিক নিয়মে বিশ্বাসী, আধ্যাত্মিক দিক থেকে এই ন্যায় নীতিকে 'খুত' বলা হয়েছে, অর্থব্ব বেদে বলা হয়েছে – "সত্যম্ বৃহৎ

খুতম উগ্রম দীক্ষাতপো বন্ধু যজ্ঞঃ পৃথিবীম ধারযন্ত্রিতি। এই নীতির উপর ভিত্তি করে কর্মবাদের আলোচনা করা হয়েছে, যেখানে বলা হয়েছে কর্মের ফল বিনষ্ট হয় না, যে যেমন কর্ম করে তাকে তার ফল ভোগ করতে হয়, জীবের উপর নির্ভর করে বন্ধন ও বন্ধনমুক্তি – এই কথায় ভারতীয় নীতিবিদ্যায় কর্মবাদের মাধ্যমে ঘোষিত হয়েছে। জীব তাঁর কৃত কর্মের ফল রূপে সুখ- দুঃখ ভোগ করে এবং ভাল-শুভ কর্ম সম্পাদনের মাধ্যমে ভাল ভবিষ্যৎ তৈরি করতে পারে, আবার নিষ্কাম কর্মের মাধ্যমে ত্যাগের মনোভাব জাগ্রত করে কামনা-বাসনা থেকে নিজেকে সম্পূর্ণ মুক্ত রেখে নিজ কর্তব্য সাধক কর্ম করার মধ্যে দিয়ে মোক্ষ লাভ করতে সচেষ্ট হয়, এবং সকাম কর্ম থেকে নিজেকে বিরত রাখে। ‘শুভ’ ধারনার কেন্দ্রবিন্দু হল নৈতিকতা, চারটি পুরুষার্থ স্বীকারের মধ্যেই শুভর ধারনা নিহিত থাকে। ভারতীয় দর্শনে উল্লেখিত চারটি পুরুষার্থে (ধর্ম, অর্থ, কাম, মোক্ষ) কিভাবে পুরুষ তার চারিত্রিক নৈতিক শুদ্ধিকরণ করে ধর্মের পথ ধরে অর্থ ও কাম কে সংযতভাবে প্রয়োগ করে মোক্ষ লাভ করতে পারে সেই সম্পর্কে আলোচনা করা হয়েছে। ভারতীয় দর্শনে ধর্মকে সর্বাগ্রে উল্লেখ করা হয়েছে কারণ ধর্ম ত্যাগ করে ভারতীয় চিন্তাধারায় কোনো লক্ষ্য পূরণ করা যায় না। ধর্ম সম্মত ভাবে অর্থ উপার্জন ও ব্যয় এবং ধর্ম সম্মত ভাবে কামকে সংযত না করতে পারলে মোক্ষ লাভ সম্ভব নয়। চতুরবর্গবাদে বলা হয়েছে মোক্ষই পরম লক্ষ্য, মোক্ষই শুভ, মোক্ষই শ্রেয়, তাই বলা হয় যে মোক্ষ লাভ জনিত কর্মই নৈতিক। ভারতীয় অন্যতম নাস্তিক বৌদ্ধ দর্শনের মূল বক্তব্য নীতিতত্ত্বের উপর ভিত্তি করে প্রতিষ্ঠিত। বুদ্ধদেব নিজে একজন নীতিবিদ ছিলেন, তিনি মানুষকে দুঃখ, তার কারণ, নিবৃত্তি ও নিবৃত্তির উপায় সম্বন্ধে সচেতন করতে সচেষ্ট হয়েছেন। তাত্ত্বিক মতবাদ বুদ্ধদেবের নৈতিক শিক্ষকার ভিত্তি ছিল। বৌদ্ধ দর্শনে প্রজ্ঞা, সমাধির সাথে শীল বা চারিত্রিক উৎকর্ষতাকে সমান গুরুত্ব দেয়া হয়েছে। এখানে শীল, সমাধি এবং প্রজ্ঞা আধ্যাত্মিক অগ্রগতির মার্গ বা পথ রূপে কল্পিত হয়েছে। চারিত্রিক শুদ্ধার মধ্যেই আধ্যাত্মিক অগ্রগতির সূচনা, সমাধির মাধ্যমে যাত্রা করে প্রজ্ঞ বা চরম তত্ত্ব জ্ঞান পরিসমাপ্ত হয়। তাই বৌদ্ধ দর্শনে আত্মিক নিয়ন্ত্রণকেই নৈতিকতার অন্যতম উপায় বলা হয়েছে, বাহ্য আচরণক নিয়ন্ত্রণকে নয়। চতুরার্ঘ্যসত্য বৌদ্ধদর্শনের নৈতিকতার অন্যতম মূলতত্ত্ব - প্রথম আর্য সত্যে বলা হয়েছে দুঃখ আছে, দ্বিতীয় আর্য সত্যে বলা হয়েছে দুঃখের কারণ আছে, তৃতীয় আর্য সত্যে বলা হয়েছে দুঃখের নিবৃত্তি ঘটে, চতুর্থ আর্য সত্যে বলা হয়েছে দুঃখ নিরোধ মার্গ আছে, চতুর্থ আর্য সত্যে উল্লেখিত অষ্টাঙ্গিক মার্গ এর মাধ্যমে বৌদ্ধ দর্শনের নৈতিকতার প্রকৃতচিত্র প্রকাশিত হয়েছে। অপর দিকে জৈন দর্শনে উল্লেখিত ত্রিরত্ন সম্যক দর্শন-তীর্থঙ্করদের উপলক্ষ তত্ত্বে প্রতি শ্রদ্ধাশীল হওয়া, সম্যক জ্ঞান – সংশয় ভ্রম অনিষ্টিত থেকে মুক্ত জ্ঞানকে বোঝায়, সম্যক চরিত্র- কর্ম বন্ধনের কারণ রূপ কর্মগুলি বর্জন করে পাপ কর্মের নিবৃত্তি বিষয়ক কর্মকে বোঝানো হয়। ] চিত্ত তথা চারিত্রিক বিশুদ্ধির মাধ্যমে জীবনের চরম লক্ষ্য মোক্ষ লাভের কথা বলা হয়েছে, জৈন দার্শনিক উমাস্তুরি “তত্ত্বার্থাধিগম সূত্র” এ বলেছেন “সম্যক্রদ্শন দর্শনজ্ঞান চারিত্রানি মোক্ষমার্গাঃ”। জীবের বন্ধন ও বন্ধন মুক্তি জৈন নীতিবিদ্যার মূল আলোচ্য বিষয়। নৈতিক কর্ম করার মাধ্যমে জীব তাঁর নিজের চেষ্টার দ্বারা মুক্তি লাভ করে এবং নৈতিক জীবনের সর্বোচ্চ আদর্শ হল কেবল জ্ঞান। জড়বাদী চার্বাক দর্শনে সুখ বা কামকেই জীবনের চরম লক্ষ্য বা নৈতিক আদর্শ বলে স্বীকার করা হয়েছে, চার্বাকরা বলেন – যথেচ্ছ ভোগের দ্বারা বর্তমানকে সার্থক কর, মৃত্যুতেই জীবনের পরিসমাপ্তি - যাবৎ জীবেৎ সুখঃ জীবেৎ নাস্তি মৃত্যোঃ অগোচরঃ। অব্দেতবেদান্তিরা পারমার্থিক ও ব্যবহারিক সত্ত্বার ভেদ স্বীকার করে নৈতিকতাকে স্বীকার করে নিয়েছেন। যোগ দর্শনে অষ্টাঙ্গ যোগের (যম, নিয়ম, আসন, প্রনায়াম, প্রত্যাহার, ধারণা, ধ্যান, সমাধি) উল্লেখের মধ্যে দিয়ে চিত্তবৃত্তি নিরোধের মাগ্নিটি সুনির্ণিত হয়। হিন্দু মনস্তাত্ত্বিক নীতিবিদ্যায় একটি গুরুত্বপূর্ণ অংশ কর্তব্যবোধ, নৈতিক আদেশ প্রসূত যথাযত কর্মকেই ধর্ম বলা হয়। কর্তব্যবোধ বলতে যথাযত ভাবে সম্পাদিত ধর্ম পালনের মধ্যে নিহিত রয়েছে নৈতিক বিধিনিষেধ। নাস্তিক ও আস্তিক নয়টি ভারতীয় দর্শন আলোচনার মধ্যে অন্তর্নিহিত রয়েছে নীতিতত্ত্ব ও নৈতিক আদেশ, যার মাধ্যমে ব্যক্তি তাঁর জীবনের পরম লক্ষ্যে পৌঁছাতে সক্ষম হয়।

আলোচনা অনুসারে বলা যায় যে, ভারতীয় দর্শনের সঙ্গে নীতিবিদ্যা নিবিড় ভাবে সম্পর্কিত, ভারতীয় দর্শনের মূল স্তুতি, যার উপর ভিত্তি করে ভারতীয় দর্শনের উৎপত্তি হয়েছে, সেই মোক্ষ বা মুক্তি লাভের উপায় বা মার্গ রূপে নীতিবিদ্যাকে স্বীকার করা হয়, তাই নীতিবিদ্যা ছাড়া ভারতীয় দর্শন অস্থিন হয়ে পরে। সুতরাং বলতে হয় যে নীতিবিদ্যা ভারতীয় দর্শন চর্চার মধ্যেই নিহিত থাকে, নীতিকে বা নীতিতত্ত্বকে ভারতীয় দর্শন থেকে পৃথক করা

যায় না। তাই বলতে হয় ভারতীয় নীতিশাস্ত্র একই সঙ্গে ব্যাবহারিক ও তাত্ত্বিক, যেখানে নৈতিক জীবনের উদ্দেশ্য হল আত্মিকউৎকর্ষতা লাভ।

### তথ্যসূত্র:

1. A Manual of Ethics – J.S Mackenzie
2. অর্থবেদ (১২/১/১)
3. ধর্মপদ (১৪, ১৮৩-৮৫ শ্লোক)
4. সর্বদর্শনসংগ্রহ – মাধবাচার্য
5. তত্ত্বার্থাধিগম সূত্র - উমাঞ্চাতি
6. নীতিশাস্ত্র – দীক্ষিতগুপ্ত
7. বুদ্ধ ও বুদ্ধধর্ম এবং প্রাচীন বৌদ্ধ সমাজ – শক্তিকুমার দাসগুপ্ত
8. নীতিবিদ্যা – ডঃ সমরেন্দ্র ভট্টাচার্য

### গ্রন্থপঞ্জী:

9. ভারতীয় নীতিবিদ্যা – দীপক কুমার বাগচী
10. চার্বাকদর্শন – দক্ষিণারঞ্জন শাস্ত্রী
11. ভারতীয় ধর্মনীতি – অমিতা চট্টোপাধ্যায়
12. ভারতীয় দর্শন – প্রদ্যোত কুমার মণ্ডল
13. নীতিবিদ্যা – ডঃ সুধীর কুমার নন্দী
14. ভারতীয় দর্শন ও তার পটভূমিকা – গোপিনাথ ভট্টাচার্য
15. The Ethics of the Hindus – Susil Kumar Maitra
16. Hindu Ethics – Swami Nikhilananda
17. Philosophy of Values – M.Hiriyanna

## শিরোনাম: বৌদ্ধধর্মে মূল্যবোধের ধারণা

### পথিনময় ঘোষ

**State Aided College Teacher, Department of Philosophy**

**Nagar college**

[Pathinmoyghosh87@gmail.com](mailto:Pathinmoyghosh87@gmail.com)

### সারসংক্ষেপ

বৌদ্ধধর্ম, বিশ্বের প্রধান ধর্মগুলির মধ্যে একটি, শুধুমাত্র মতবাদ বা আচার অনুষ্ঠানের একটি সমষ্টি নয় বরং এটি একটি গভীর দর্শনকে ধারন করে যা এর অনুসারীরা বিশ্বের সাথে উপলব্ধি এবং যোগাযোগের উপায়কে আকার দেয়। এই গবেষণা পত্রটি বৌদ্ধধর্মে অন্তর্নিহিত মূল মূল্যবোধগুলিকে অন্বেষণ করে, মূল নীতিগুলির উপর জোর দেয় যা নৈতিক আচরণ, মননশীলতা, সহানুভূতি এবং অভ্যন্তরীণ শান্তির অন্বেষণকে নির্দেশ করে।

**KEYWORDS:** চারটি মহৎসত্য, করুণা, মননশীলতা, অস্থিরতা, আনন্দঃ সংযুক্ততা এবং আটটি পথ।

**ভূমিকা :** ভারতীয় নাস্তিক দর্শনের অন্যতম হল বৌদ্ধদর্শন। বৌদ্ধধর্ম, সিদ্ধার্থ গৌতম দ্বারা প্রতিষ্ঠিত, যা সাধারণত বুদ্ধ নামে পরিচিত। এই ধর্ম, সিদ্ধার্থ গৌতমের শিক্ষার মধ্যে নিহিত, জীবনের গভীর উপলব্ধি এবং অভ্যন্তরীণ শান্তির সাধনার উপর জোর দেয়। এর মূল্যবোধের কেন্দ্রবিন্দু হল চারটি মহান সত্য, যা একটি সামগ্রিক দৃষ্টিভঙ্গিকে উৎসাহিত করে যা আনন্দসংযুক্ত এবং পরার্থপরতাকে অন্তর্ভুক্ত করার জন্য ব্যক্তিগত মঙ্গলকে অতিক্রম করে। নৈতিক আচরণ, মানসিক শৃঙ্খলা এবং প্রজ্ঞাকে আলিঙ্গন করে, বৌদ্ধধর্ম আত্ম- আবিষ্কার এবং জ্ঞানার্জনের পথকে উৎসাহিত করে।

**মূল্যবোধের ধারণা:** মূল্যবোধ হল গভীরভাবে ধারন করা বিশ্বাস বা নীতি যা আমাদের পছন্দ এবং ক্রিয়াকে চালনা করে। তারা ব্যক্তি বা সমাজের জন্য কী গুরুত্বপূর্ণ তা প্রতিফলিত করে এবং সিদ্ধান্ত গ্রহণ, আচরণ এবং সম্পর্ককে প্রভাবিত করে। মূল্যবোধগুলি সততা, উদারতা বা স্বাধীনতা, ন্যায়বিচার এবং সমতার মত বৃহত্তর আদর্শের মতো ধারণা গুলিকে অন্তর্ভুক্ত করতে পারে।

**চারটি মহৎ সত্য :** বেদ উপনিষদ থেকে শুরু করে ভারতীয় প্রায় সকল দর্শনেই তত্ত্ব জ্ঞানের অভাব অর্থাৎ, অবিদ্যাকে দুঃখের মূল কারণ এবং তত্ত্বজ্ঞান অর্থাৎ, বিদ্যাকে দুখমুক্তির উপায় বলা হয়েছে। বুদ্ধ মতেও অবিদ্যাই দুঃখের মূল। তবে বুদ্ধমতে অবিদ্যা অর্থে আর্য সত্যচতুর্ষয়ের জ্ঞানের অভাব। চারটি মহান সত্যের সম্যক জ্ঞান হলে দুঃখ নিরোধ হয়। বুদ্ধদেব তাঁর শিষ্যদের বলেছেন, “আর্যসত্যচতুর্ষয়ের জ্ঞান না থাকায় আমি এ যাবৎ জন্ম থেকে জ্ঞানাত্মক সুদীর্ঘ পথ পরিক্রমন করেছি। এখন আর্যসত্যচতুর্ষয়ের জ্ঞান হওয়ায় পুনর্জন্ম গ্রহণের প্রবণতা রূপ্ত হয়েছে – জরামরণের মূল কারণ বিনষ্ট হয়েছে – পুনর্জন্ম গ্রহণের সম্ভাবনা সম্পূর্ণরূপে তিরোহিত হয়েছে।” বৌদ্ধধর্মের মৌলিক নীতিগুলি চারটি মহান সত্যের সাথে শুরু হয়, যা দুঃখের অস্তিত্ব স্বীকার করে, এর কারণগুলি চিহ্নিত করে, বন্ধের সম্ভাবনা ঘোষণা করে এবং মুক্তির পথের রূপরেখা দেয়। এই কাঠামো অনুগামীদের বাস্তবতার মুখোমুখি হতে, এর প্রকৃতি বুঝতে এবং রূপান্তরমূলক সমাধান খুঁজতে উৎসাহিত করে।

**করুণা:** মানুষের নানা অনিবার্য দুঃখ দেখে, তাঁর মনে বৈরাগ্য আসে। এই দুঃখ থেকে মুক্তি পাবার উপায়ের সন্ধানে, সকল আরাম ও বিলাস তুচ্ছ করে উন্নত্রিশ বছর বয়সে তিনি সন্ধ্যাসী হন। সন্ধ্যাসী সিদ্ধার্থ, নানা মঠে ও সঙ্গে, বহু আচার্যের কাছে, সেকালের বিভিন্ন তত্ত্বজ্ঞান ও আচরণবিধি আয়ত করেন। দুঃখ নির্বাতির জন্য তিনি সেকালে প্রচলিত নানা যোগাভ্যাস, ধ্যান প্রভৃতি করেন। এছাড়া, বিভিন্ন দর্শন অধ্যয়ন করেন। তবুও, এসব ব্যাপারে তিনি দুখমুক্তির কোনও পথ খুঁজে পাননি। তিনি বুঝলেন, অসংযত ইন্দ্রিয়সম্ভোগ কিংবা জপতপের কঠোর জীবন যাপন দুঃখ থেকে মুক্তি হবার পথ নয়। অতঃপর তিনি মধ্যপন্থায় তপস্যা করেন এবং অবশেষে বোধিলাভ করেন। বোধি মানে ‘সত্যের জ্ঞান’। দুঃখমুক্তির

পথই সত্য। বৌধি লাভ করায়, সিদ্ধার্থ ‘বুদ্ধ’ হন। তখন তিনি জ্ঞান, বীর্য, করুণা ও ত্যাগের মূর্ত প্রকাশ। তাই দুঃখ নিবৃত্তি বৌদ্ধ শিক্ষার কেন্দ্রবিন্দুতে রয়েছে করনার নীতি, বৌদ্ধধর্মে সমবেদনা নিছক সহানুভূতির বাইরে প্রসারিত; এটি অন্যদের দুঃখকষ্ট উপশম করার সক্রিয় ইচ্ছা জড়িত। করুণার ধারনাটি সমস্ত জীবের আন্তঃসম্পর্কের উপর জোর দেয় এবং অনুশীলনকারিদের জীবনের প্রতিটি রূপের প্রতি সহানুভূতি এবং উদারতা গড়ে তুলতে উৎসাহিত করে।

**মননশীলতা:** মননশীলতা বৌদ্ধ অনুশীলনের একটি গুরুত্বপূর্ণ দিক। মননশীলতা বর্তমান মুহূর্তে সম্পূর্ণরূপে উপস্থিত থাকা, অতীতের প্রতি আসক্তি বা ভবিষ্যতের উদ্বেগ থেকে মুক্ত থাকা জড়িত। মনোযোগসহকারে ধ্যানের মাধ্যমে, অনুশীলনকারীর উচ্চতর সচেতনতা বিকাশের লক্ষ্য রাখে, তাদের চিন্তাভাবনা এবং আবেগগুলিকে তাদের মধ্যে আটকে না গিয়ে পর্যবেক্ষণ করতে সক্ষম করে।

**অস্থিরতা:** চিরস্থায়ী নিত্য বলে নেই। অন্তরে – বাইরে, ব্যক্তিতে, গোচরে – অগোচরে নিয়ত পরিবর্তন ঘটেই চলেছে। অনিয়তাই একমাত্র ঝুঁক। দৃশ্যমান বস্তু হল বস্তুসন্তান। এটি এক পরম্পরাখাতা, বই, সবই খাতা সন্তান, বই সন্তান। যা কিছু স্থায়ী রূপে প্রতিভাত হয়, তা প্রকৃতপক্ষে পরিবর্তনশীল। পরিবর্তনের মধ্যে ধারাবাহিকতা বা প্রবাহ্রূপ ঐক্য থাকার জন্য অনিয়ে নিয়ের প্রত্যয় হয়। বিশ্বমানের সকল দার্শনিক জগতের অনিয়তার কথা বললেও বুদ্ধ প্রবর্তিত অনিয়বাদ স্বাতন্ত্র্যের দাবি রাখে। কারন বৌদ্ধ দর্শনে অনিয়বাদ ক্ষণভঙ্গবাদের নামান্তর। এখানে ক্ষণভঙ্গ পদটি ক্ষণেণ একক্ষণেন ভঙ্গঃ’ অর্থাৎ একক্ষণের পর বস্তুর বিনাশ অর্থে প্রযুক্ত হয়েছে। বৌদ্ধমতে বস্তুনিয়ত প্রতিক্ষণে পরিবর্তিত হচ্ছে এবং কোন বস্তুই একক্ষণের বেশি স্থায়ী হয় না। বৌদ্ধধর্ম সমস্ত কিছুর অস্থায়ী প্রকৃতিকে স্বীকৃতি দেয়। অস্থিরতা শেখায় যে বস্তুগত এবং মানসিক জগতের সবকিছুই পরিবর্তন সাপেক্ষে। সংযুক্তি, আকাঙ্ক্ষা এবং বিদ্বেষ করাতে অস্থিরতা বোঝা গুরুত্বপূর্ণ, যা ব্যক্তিদের জীবনকে সমতা সহকারে যেতে দেয়।

**আন্তঃসম্পর্ক(প্রতীত্যসমুৎপাদ):** প্রতীত্যসমুৎপাদতত্ত্ববাদী বৌদ্ধ বলেন, যে কোনও জীবের পূর্বকর্মই তার বর্তমান সন্তানের কারণ। জীবের ভাবীসন্তান কারন তার বর্তমান কর্ম। বর্তমান সন্তা দুঃখময়। প্রতীত্যসমুৎপাদনিয়মই কার্যকারণের শৃঙ্খল। এই শৃঙ্খলের প্রথমতম কারন অবিদ্যা। অবিদ্যাই জীবের বর্তমান দুঃখময় সন্তান আদি কারন। চারটি আর্যসত্যের জ্ঞানের অভাব এবং জীবনকে সুখময় মনে করাই অবিদ্যা। অবিদ্যা জীবকে নানা কর্মে প্রবৃত্ত করে। চারটি সত্যের সম্যকজ্ঞান হলে, জন্ম ও জীবনের প্রবাহের চরমকারন বিনষ্ট হয়। ‘দুঃখ’ মানে ‘জরামরণ’। দুঃখের জনক কার্যকারণশৃঙ্খলের আদিতে রয়েছে অবিদ্যা। এই শৃঙ্খলের বারোটি গ্রন্থি এবং পূর্বের গ্রন্থি পরের গ্রন্থির কারন। বুদ্ধ যে চারটি আর্যসত্যের প্রচার করেছেন, তার দ্বিতীয়টি ‘সমুদয়সত্য’। জীবের নৈতিক জগতে যে প্রতীত্যসমুৎপাদনিয়ম দেখা যায় তার নাম ‘সমুদয়সত্য’। প্রতীত্যসমুৎপাদনিয়ম রূপ এই কার্যকারণ-শৃঙ্খলে বারোটি গ্রন্থি থাকায়, বৌদ্ধদর্শনে একে ‘দ্বাদশনিদান’ বা ‘ভবচক্র’ বলা হয়। এই শৃঙ্খলের প্রতীত্যসমুৎপন্ন বারোটি গ্রন্থির নাম – ১) অবিদ্যা(অজ্ঞান) ২) সংস্কার ৩)বিজ্ঞান (চৈতন্য) ৪)নামরূপ ৫)ষড়ায়তন ৬)স্পর্শ(ইল্লিয়ের সঙ্গে বিষয়ের সংযোগ) ৭)বেদনা(সংবেদন) ৮)তৃষ্ণা(কামনা) ৯)উপাদান(আসক্তি) ১০)ভব(সন্তা) ১১)জাতি(জন্ম) ১২)জরামরণ(দুঃখ)। প্রতীত্যসমুৎপাদের নীতি, প্রায়শই নির্ভরশীল উৎস হিসাবে অনুবাদ করা হয়, সমস্ত ঘটনার পরম্পর নির্ভরশীল প্রকৃতিকে ব্যাখ্যা করে। এটি এই ধারনাটিকে তুলে ধরে যে বিচ্ছিন্নভাবে কিছুই বিদ্যমান নেই; এবং সবকিছু আন্তঃসংযুক্ত। এই আন্তঃসংযুক্ততা সমস্ত জীবের প্রতি দায়িত্ববোধ এবং সমবেদনাকে উৎসাহিত করে।

**অষ্টাঙ্গিক মার্গ :** বৌদ্ধ দর্শনে চতুর্থ আর্য সত্য হল দুঃখ নিবৃত্তির এই মার্গ বা পথকেই বৌদ্ধ দর্শনে অষ্টাঙ্গিক মার্গ বলা হয়েছে। এই আটটি মার্গই মধ্যমপন্থা – অসংযত ভোগবিলাস ও কঠোর কৃচ্ছসাধনের মধ্যবর্তী পন্থ। অষ্টাঙ্গিক মার্গ একটি স্বাস্থ্যকর এবং ভারসাম্যপূর্ণ জীবন পরিচালনার জন্য একটি ব্যবহারিক উপদেষ্টা হিসাবে কাজ করে। সঠিক বোধগম্যতা, সঠিক উদ্দেশ্য, সঠিক বক্তৃতা, সঠিক কর্ম, সঠিক জীবিকা, সঠিক প্রচেষ্টা, সঠিক মননশীলতা এবং সঠিক একাগ্রতার সমন্বয়ে অষ্টাঙ্গিক মার্গ নৈতিক আচরণ, মানসিক শৃঙ্খলা এবং প্রঙ্গার জন্য একটি ব্যাপক কাঠামো প্রদান করে।

**বর্তমান সময়ে বৌদ্ধদর্শনের মূল্যবোধের প্রাসঙ্গিকতা:** বর্তমান সময়ে, সহানুভূতি, মননশীলতা এবং অ-সংস্কৃতির মতো বৌদ্ধ মূল্যবোধ গুলি প্রাসঙ্গিক রয়ে গেছে। তারা দর্পগুলি দূর করার জন্য নির্দেশিকা প্রদান করে, মঙ্গল প্রচার করে এবং আধুনিক জীবনের জটিলতার মধ্যে একটি সুন্দর সমাজ গড়ে তোলে।

**উপসংহার:** উপসংহারে বৌদ্ধধর্ম শুধু একটি ধর্মীয় বা দার্শনিক ব্যবস্থা নয়; এটি গভীর মূল্যবোধের মধ্যে নিহিত জীবনের একটি উপায়। সহানুভূতি, মননশীলতা, অস্থিরতা, আন্তঃসংযুক্ততা এবং অষ্টাঙ্গিক মার্গ হল বৌদ্ধ শিক্ষার অবিচ্ছেদ্য দিক যা বিশ্বজুড়ে ব্যক্তিদের আরও সহানুভূতিশীল এবং মননশীল অস্তিত্ব গড়ে তুলতে অনুপ্রাণিত করে, শেষ পর্যন্ত দুঃখ থেকে মুক্তির দিকে নিয়ে যায়।

গ্রন্থসমূহঃ

- ১। M.Hiriyana,Outlines of Indian Philosophy,Motilal Banarsidass Publishers Private Limited,Delhi,1993.
- ২। ধর্মপদ,চারুচন্দ্ৰ বসু কৰ্ত্তক অনুবাদিত,মহাবোধি বুক এজেন্সি,কলকাতা,  
২০১০।
- ৩। দেবৰত সেন,ভাৱতীয় দৰ্শন,পশ্চিমবঙ্গ রাজ্য পুস্তক পৰ্যাদ,তত্তীয় সংস্কৰণ ২০১০/বি।
- ৪। Bodhi Bhikkhu,The Nobel Eight Path,Mahabodi Book Agency,Kolkata, 2012.
- ৫। অধ্যাপক অমিত ভট্টাচার্য,ভাৱতীয় দৰ্শনেৰ কৃপৱেখা ,সংস্কৃত বুক ডিপো ,তত্তীয় সংস্কৰণ : ২০০৯।

## মধুসূদন: বাংলা কবিতার নবযুগ প্রবর্তক

**মহেশ্বর আলী মোল্লা**  
**নগর কলেজ শিক্ষক(বাংলা বিভাগ)**  
[alimollah7@gmail.com](mailto:alimollah7@gmail.com)

বাংলা সাহিত্য তথ্য সমগ্র ভারতীয় সাহিত্যের আধুনিকতার জনক হলেন-মাইকেল মধুসূদন দত্ত। জীবনের প্রথম ৩৪ বছর বাংলা ভাষায় কবিতা না লিখেও বাংলা ভাষার প্রথম আধুনিক কবি তিনিই। ১৮৫৯ খ্রিস্টাব্দ থেকে ১৮৬২ খ্রিস্টাব্দের মধ্যেই তিনি লিখে ফেলেন-'শমিষ্ঠা নাটক', 'পদ্মাবতী নাটক', 'তিলোত্মাসন্ধি কাব্য', 'একেই কি বলে সভ্যতা' ও 'বুড়ো শালিকের ঘাড়ে রোঁ-প্রহসন', 'মেঘনাথবধ কাব্য', 'রঞ্জনা কাব্য', 'কৃষ্ণকুমারী নাটক' এবং 'বীরাঙ্গনা কাব্য'। এছাড়া 'চতুর্দশপদী কবিতাবলী' রচনা করতে শুরু করেন এই ১৮৬২ খ্রিস্টাব্দেই। প্রথম জীবনে শেক্সপিয়র এবং মিল্টন হ্বার স্বপ্ন দেখেও শেষ পর্যন্ত তিনি হয়েছেন বাঙালির কবি।

আসলে মধুসূদনের মানসলোক আলোকিত হয়েছিল উনিশ শতকের নবজাগরণের দ্বারা। নবজাগরণের ফলে মানুষ আত্ম অনুসন্ধানে প্রবৃত্ত হয়েছে, জেগে উঠেছে তার আত্মপ্রত্যয় ও আত্মর্যাদাবোধ। রামমোহন, বিদ্যসাগর বা ডি঱োজিওর জীবন সাধনায় নবজাগরণের যে সূচনা মধুসূদনের জীবন চেতনায় তার পূর্ণ প্রকাশ। হিন্দু কলেজের এই তরুণ ছাত্র মুক্তির প্রবল পিপাসায় ও দুর্বার বাসনায় যেমন তাড়িত তেমনি স্বাধীনতার স্পৃহায় ও জীবন উপভোগের তীব্র আকাঙ্ক্ষাতেও স্পন্দিত হয়েছেন। তিনি ছিলেন বিদ্রোহী। তাই ব্যক্তি জীবনের সমস্ত নিয়ম-শৃঙ্খলাকে তিনি ভেঙেছেন, অনুভব করেছেন নিজের অন্তরের অমিত শক্তি ও তেজ কে। জাতি-ধর্ম ত্যাগ করে, পিতা-মাতার স্নেহের বন্ধন ছিন্ন করে, বড় হ্বার দুর্বার আকাঙ্ক্ষায় তিনি বারবার উচ্চারণ করেছেন--"I must soar up and up."-সম্ভবত এই বড় হ্বার উচ্চাকাঙ্ক্ষায় তার ধর্মান্তরিত হওয়ার কারণ। তবে তার এই সিদ্ধান্ত ও উচ্চাশা তার নিজের ব্যক্তিগত জীবনে যতই দুর্থ-কষ্টের কারণ হোক না কেন-তা বাঙালি জাতি তথ্য বাংলা ভাষার ক্ষেত্রে মঙ্গলময় হয়েছিল। তিনি নিজে যেমন হিন্দু ধর্মের প্রচলিত রীতি ও কুসংস্কার ভেঙে বেরিয়ে এসেছিলেন, তেমনি উনিশ শতকের বাংলা কাব্যকেও রূপ-রীতি ও প্রকাশভঙ্গির মধ্য দিয়ে প্রথম যথার্থ মুক্তি দিয়েছিলেন। পূর্ববর্তী অন্যান্য কবিন্মাত্র যেখানে নতুন কে ভয়ে ভয়ে খুব সামান্য স্বীকৃতি দিয়েছিলেন, সেখানে মধুসূদন দুর্কুল ছাপানো খরপ্রোতা নদীর মতো সব কিছু ভাসিয়ে দিয়ে নতুনের উন্মাদ ধারায় বাংলা কাব্য কে প্লাবিত করে দেন। তাই যথার্থ অর্থে বাংলা কবিতার নবযুগ প্রবর্তক তাকেই বলা চলে। তাঁর এক একটি কাব্য যেন এক একটি কাব্য রীতির প্রবর্তক ও পথপ্রদর্শক। আখ্যায়িকা কাব্য, মহাকাব্য, গীতিকাব্য, পত্রকাব্য ও সন্টো-স্ব দিক দিয়েই তিনি অগ্রপথিক। নবজাগরণের ফলে মুক্তির যে নতুন বাণী সাহিত্যে ধ্বনিত হয়েছিল-এই মহাকবিকেই তার যথার্থ রূপকার বলা যেতে পারে। পরবর্তীকালে সেটাই হয়ে উঠেছে এক নতুন অধ্যায়, অন্য কবি দলের কাছে রচনার প্রেরণা স্বরূপ।

"প্রতিভার সঙ্গে জ্ঞানের সমন্বয় হলে কিরণ অসাধ্য সাধন হয় মধুসূদনের মধ্যে তার এক উজ্জ্বল দৃষ্টান্ত দেখা যায়।"---সত্যি কথা বলতে তাঁর ব্যক্তিগত জীবন যতই অসংযত ও ছন্দচাঢ়া হোক না কেন, সাহিত্য ক্ষেত্রে তিনি ছিলেন কর্তৃর নিয়মনির্ণয়। দেবতার আশীর্বাদ ধন্য হয়ে জঞ্জেছিলেন এক অসাধারণ প্রতিভা নিয়ে এবং নিজের কর্তৃর পরিশ্রম ও অধ্যাবসায় দিয়ে আয়ত করেছিলেন জ্ঞানের রঞ্জ ভাণ্ডার। সেই অর্জিত জ্ঞানকে অনবরত নিজের সৃষ্টি কর্মের মধ্যে প্রয়োগ করেছেন। তাই তাঁর রচনায় পুরাতনের পুনরাবৃত্তি নেই, রয়েছে নতুনত্ব। যদিও সাহিত্য জগতে তাঁর আত্মপ্রকাশ ইংরেজি কবিতা লিখে। ১৯৪৮-৪৯ খ্রিস্টাব্দের মধ্যে মাদ্রাজ থেকে "Madras Circulator"-পত্রিকায় তিনি Timothy Penpoem -ছব্বনামে "Captive Ladie"-নামে ইংরেজি কাব্যে পৃষ্ঠীরাজ-সংযুক্তার কাহিনী রচনা করেন। সেদিক থেকে কবির প্রথম বাংলা কাব্যগ্রন্থ-'তিলোত্মাসন্ধি কাব্য'-(১৮৬০)। কবির সৃষ্টি'অমিগ্রাস্ক'র ছন্দে'এই কাব্যটি রচিত হয়। সংস্কৃত পুরাণ ও মহাভারতের আদি পর্বের কাহিনী অবলম্বনে চারাটি সর্গে এই কাব্যটি রচনা করেন। তিলোত্মা কে কেন্দ্র করে দৈত্য ভ্রাতা সুন্দ ও উপসুন্দের মধ্যে দ্বন্দ্ব এই কাব্যের মূল বিষয়।

এরপর রচনা করেন-'মেঘনাদবধ কাব্য'-(১৮৬১)। মধুসূদনের কবি প্রতিভার শ্রেষ্ঠ নিদর্শন এই গ্রন্থটি এবং বাংলা কাব্য সাহিত্যের এক অমর সৃষ্টি-'মেঘনাদবধ কাব্য'। কাহিনী হিসেবে বাল্মীকী রামায়ণ কে গ্রহণ করেছেন ঠিকই কিন্তু ফুটিয়ে তুলেছেন ভাব কল্পনার ক্ষেত্রে মৌলিকতার পরিচয়। তাই তাঁর কাব্যের নায়ক রাম নয়, কবি এ কাব্যে বীর রামে জাগিয়ে তুলেছেন রাবণ ও তাঁর পুত্র মেঘনাদ কে। এ প্রসঙ্গে তাঁর বন্ধুকে লেখা একটি পত্রের একটু অংশ এখানে উল্লেখ করা যেতে পারে-"I despise Rama and his rabble; idea of Ravana elevates and kindless my imagination, he was a grand fellow."--এ কাব্যে মহাকাব্যিক বিশালতা ও গান্তীর্য, সমুল্লভ ও উদারতা, ন্যায়-ধর্ম ও মঙ্গলময়তার সমষ্টি লক্ষণই স্পষ্ট রূপে ফুটে উঠেছে। সব মিলিয়ে মধু কবির এই সৃষ্টি নিঃসন্দেহে বাংলা সাহিত্যে এক ও অন্বিতীয় কীর্তির পরিচায়ক।

তাঁর রচিত 'ব্রজাঙ্গনা'কাব্যটি প্রকাশিত হয় ১৮৬১ খ্রিস্টাব্দে। রাধা কৃষ্ণের কাহিনী অবলম্বনে ও ইতালীয় 'লিরিক্যাল ওডের'-অনুসরণে কবি এই কাব্যটি রচনা করেন। কাব্যটির মূল কথা-প্রেম। রাধার অন্তর বেদনা এখানে কাব্যরূপ লাভ করেছে। পাশাপাশি বৈষ্ণব কবিতার মত পদলালিত্য ও ছন্দ মাধুর্য এই কাব্যে লক্ষ্য করা যায়। "Poor lady of Braja"-এই ভাবেই তিনি মর্ত্য মানবী রাধার ছদ্য বেদনাকে রস পূর্ণ করে তুলেছেন। 'বীরাঙ্গনা কাব্য'-(১৮৬২)-বাংলা ভাষায় লেখা প্রথম সার্থক পত্রকাব্য। রোমান কবি ওভিদের লেখা 'Heroides'-কাব্যের অনুসরণে ভারতীয় প্রাচীন সাহিত্য ও পুরান থেকে বিষয়বস্তু গ্রহণ করে ১১ জন নারীর পত্র অবলম্বনে কবি এই কাব্যথানি রচনা করেন। প্রতিটি পত্রের মূল সুর প্রেম। সেই প্রেমের কারণেই পত্র গুলির ১১ জন নারী তাদের স্বামী বা প্রেমিকের প্রতি অনুযোগ, অভিযোগ, উদ্বেগ, উৎকর্ষ, উল্লাস ব্যক্ত করেছে। এছাড়া মধুসূদনের 'অমিগ্রাফ্র ছন্দ' - প্রয়োগের সার্থকতার দিক থেকেও এই কাব্যটি শ্রেষ্ঠস্বরের দাবিদার। "মধুসূদন: কবি ও নাট্যকার"-গল্পে সুবোধ চন্দ্র সেনগুপ্ত কাব্যটি সম্পর্কে লিখেছেন- "পরিকল্পনার অভিনবস্থে, ভাবের প্রিশ্বর্যে, ভাষা ও ছন্দের ওজন্মীতা ও মাধুর্যে এই কাব্যগ্রন্থখানি বাংলা সাহিত্যে অতুলনীয়।"

"চতুর্দশপদী কবিতাবলী"-নাম দিয়ে তাঁর সনেটের সংকলন প্রকাশিত হয়-১৮৬৬ খ্রিস্টাব্দে। এই কাব্যটি কবির প্রবাস জীবনের সাহিত্য কীর্তি। বন্ধু রাজনারায়ণ বসু কে একটি চিঠিতে তিনি জানান- "I want to introduce the sonnet into our language." ইতালীয় কবি পেত্রার্কের অনুসরণে কবি বাংলা ভাষায় এই সনেট গুলি রচনা করেন। বাংলার-জয়দেব, কাশীরাম দাস, এছাড়া পাশাত্যের কবি দাল্লে, ভিক্টর হগো, টেনিসন-প্রভৃতি কবিদের উদ্দেশ্যে কবি তাঁর সনেটে শ্রদ্ধা নিবেদন করেছেন। যাইহোক, কবির দুঃখময় ব্যক্তি জীবনের অনেক কথা এবং তিনি যে অন্তরের দিক থেকে প্রকৃতই বাঞ্ছালি ছিলেন তার যথার্থ প্রমাণ পাওয়া যায় এই "চতুর্দশপদী কবিতাবলী"তে। জীবনের শেষ পর্বে পৌঁছে ইলিয়াডের কাহিনী অবলম্বনে "হেক্টোবধ" নামে একটি গদ্য আখ্যান রচনা করেন। অবশ্য এই রচনাটিতে মহাকবির সাহিত্য প্রতিভার তেমন উল্লেখযোগ্য বৈশিষ্ট্য লক্ষ্য করা যায় না।

সর্বোপরি বাংলা কাব্যে যথার্থ আধুনিকতার সূত্রপাত তাঁর হাত ধরেই, তিনিই বাংলার নবজাগরণের অন্যতম প্রাণপুরুষ।  
 ডক্টর শ্রীকুমার বন্দ্যোপাধ্যায়ের কথা ধার করে তাই বলা যায়-  
 "তিনি কলম্বাসের ন্যায় দুষ্টুর সমুদ্রপথ অতিক্রম করিয়া নৃতন মহাদেশের আবিষ্কার না করিলে সেই নবাবিস্তৃত ভূমি খল্দে নানা বিচ্ছিন্ন ছাদের উপনিবেশ পরম্পরা এত দ্রুতগতিতে গড়িয়া উঠিত না। বাংলা সাহিত্যে সেই আধুনিকতা মহাদেশের আবিষ্কারকের জয়মাল চিরদিন তাঁহার কর্তৃত অঞ্চল হইয়া থাকিবে।"

\*\*তথ্যসূত্র:-

- 1) আধুনিক বাংলা সাহিত্যের ইতিহাস-তপন কুমার চট্টোপাধ্যায়।
- 2) বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত-ড. অসিত কুমার বন্দ্যোপাধ্যায়।

- 3) বাংলা সাহিত্য পরিচয়-ড. পার্থ চট্টোপাধ্যায়।
- 4) মধুকবির বীরাঙ্গনা কাব্য-অধ্যাপক সুব্রত মন্ডল ও দেবজ্যোতি মল্লিক।
- 5) বাংলা সাহিত্যের ইতিহাস- ড. দেবেশ কুমার আচার্য।
- 6) বাংলা সাহিত্যের সমগ্র ইতিহাস-ড. ক্ষেত্র গুপ্ত।
- 7) মধুসূদন দত্তের মেঘনাদবধ কাব্য-কৃষ্ণ গোপাল রায়।

## যোগ দর্শন-পর্যায়ক্রমিক দৃষ্টিভঙ্গি

উজ্জ্বল দে  
সহকারী অধ্যাপক, দর্শন বিভাগ  
নগর কলেজ, মুর্শিদাবাদ

**সারসংক্ষেপ :** যোগের মুখ্যগ্রন্থ হিসাবে 'পাতঞ্জল যোগ' এবং প্রামাণ্যগ্রন্থ হিসাবে মহাভারতকে মনে করা হয়। জীবনকে পূর্ণরূপে অতিবাহিত করা এবং উপভোগ করার সারকথা যার মধ্যে নিহিত তা হল যোগবিজ্ঞান। এই যোগবিজ্ঞানের মধ্যে জ্ঞানযোগ, ভক্তিযোগ, কর্মযোগ এবং রাজযোগ বা মন নিয়ন্ত্রকারী এক সাধনার পথ পরিলক্ষিত হয়। বস্তুত, মনের অচেতন ভূমি থেকে মহান আধ্যাত্মিক সত্য আহরণের সেরা মাধ্যম হল যোগ। এই যোগ ভারতীয় উপমহাদেশে হিন্দুধর্ম ও দর্শনের একটি ইতিহাসবাহী শারীরিক্তীয় ও মানসিক সাধন প্রণালী। যোগ শব্দটি পরে হিন্দু ছাড়াও বৌদ্ধ ও জৈনধর্মের ধ্যান প্রণালীতে একীভূত হয়েছে। বর্তমানে যোগ সমগ্র বিশ্বে সকল ধর্মের মানুষ পালন করে থাকে। তাছাড়া বলা যেতে পারে, যোগ হল পরমকে উপলক্ষ্মি করার পথ।

**Keywords:**

যোগ, প্রাণায়াম, চিত্ত, মোক্ষ, উপনিষদ, মহাভারত, বেদ

যোগ হল জীবনে চলার এক পদ্ধতি। সংস্কৃত শব্দ 'যুজ' ধাতুর উন্তর 'ঘঞ্জ' প্রত্যয় যুক্ত করে 'যোগ' শব্দটি নিপন্ন হয়। সংস্কৃত শব্দ 'যুজ' থেকে আহরিত যোগের অর্থ হল- ব্যক্তি সত্ত্বার সাথে বিশ্বসত্ত্বার মেলবন্ধন। বিশ্বের ইতিহাসে যোগসাধনার ইতিহাস অত্যন্ত প্রাচীন। যোগের সময়কাল নিয়ে সঠিক কোন সিদ্ধান্ত এখনও পাওয়া যায়নি। তবে মনে করা হয় বেদের সময়কালেই যোগের বীজ উৎপন্ন হয়েছিল। এই যোগ তন্ত্র সাধনার এক রহস্যময় পথ। এই দর্শনের উন্তর যেমন অতি প্রাচীন তেমনি এর আচার্য পরম্পরার ধারাটিও গৌরবময়। যোগের উৎপত্তিকাল বেদের সমসাময়িক হলেও উপনিষদের যুগে সেটি ধীরে ধীরে সমৃদ্ধি প্রাপ্ত হয়ে পাতঞ্জল দর্শনে তা পূর্ণাঙ্গরূপ ধারন করে। রাধাকৃষ্ণনের মতে, যোগসূত্রের সময়কাল হল ৩০০ খ্রিষ্টাব্দ।<sup>১</sup> খৰ্বি বেদব্যাস হলেন এই যোগসূত্রের ভাষ্যকার। এইসব যোগীরা অনাদিনাথ বা শিবকেই যোগবিদ্যায় উপদেশ দানকারী বলে উল্লেখ করে থাকেন। মহৰ্ষি পতঞ্জলি 'যোগসূত্র'-এ যোগ শব্দটি 'সমাধিযোগ' অর্থে ব্যবহার করেছেন। তিনি 'সাধনপাদের' দ্বিতীয় সূত্রে যোগের যে সংজ্ঞা দিয়েছেন তা হল, "যোগশিত্তব্যনিরোধঃ"<sup>২</sup> অর্থাৎ যোগ হচ্ছে চিত্তবৃত্তির নিরোধ। অথবা বলা যায়, যোগ হল মনোবৃত্তিকে রোধ করা। আর এই বৃত্তি হল- পরিনাম, আবর্তন ও পরিবর্তন। ব্যক্তির চতুর্থ চিত্তের বহুমুখী প্রবণতাকে একমুখী করার প্রক্রিয়াই হল যোগ। স্বামী বিবেকানন্দ এই প্রসঙ্গে বলেছেন, "Yoga is restraining the mind-stuff (citta) from taking various forms (vrittis)"<sup>৩</sup>। তিনি বিষয়টিকে একটি উদাহরণের সাহায্যে ব্যাখ্যা করেছেন- মানুষ ঘুমিয়ে চক্ষু খুলে রাখলেও তার দর্শনের অনুভূতি হয় না অর্থাৎ চক্ষুর সাথে চিত্তের সম্পর্ক থাকা দরকার। তিনি বলেছেন, আমরা হৃদের তলদেশ দেখতে পাই না, কারণ এর উপরে ক্ষুদ্র ক্ষুদ্র তরঙ্গ থাকে। যখনি তরঙ্গগুলি শান্ত হয়, জল স্থির হয়ে যায় তখনই কেবল হৃদের তলদেশ কিছুক্ষণের জন্য দেখতে পাওয়া যায়। যিনি মনের এই তরঙ্গগুলিকে নিজের আয়ত্তে আনতে পেরেছেন তিনিই শান্ত পুরুষ। পতঞ্জলির 'যোগসূত্র' যে যোগের উল্লেখ আছে তা হিন্দুদর্শনের ছয়টি প্রধান শাখার সাংখ্য, যোগ, ন্যায়, বৈশেষিক, মীমাংসা, বেদান্ত অন্যতম। অন্যান্য যেসব হিন্দুশাস্ত্রে যোগ সম্পর্কে আলোচনা হয়েছে সেগুলি হল- উপনিষদ, ভগবদ্গীতা, হঠযোগ প্রদীপিকা, শিবসংহিতা, বিভিন্ন পুরাণ ও বিভিন্ন তত্ত্বগ্রন্থ। যোগদর্শনের প্রতিষ্ঠাতারাপে পতঞ্জলির কথা বলা হলেও তাকে আদি প্রতিষ্ঠাতা বলা যায় না। কারণ, 'হিরণ্যগর্ভঃ যোগস্যবন্তা নান্যঃ পুরাতনঃ'<sup>৪</sup>। এই সমস্ত বাক্য থেকে বলা যেতে পারে, যোগের আদি প্রবন্ধ হলেন হিরণ্যগর্ভ। তাছাড়া মহাভারত, মনুস্মৃতি, ভামতি প্রভৃতি গ্রন্থেও হিরণ্যগর্ভকেই যোগের আদিবন্তা বলা হয়েছে।<sup>৫</sup> দেবাদিদেব মহাদেবকে সর্বশ্রেষ্ঠ যোগী বলা হয়। মহৰ্ষি পতঞ্জলির যোগভাষ্যের উপর রচিতগ্রন্থগুলিকে দুইভাগে ভাগ করা যেতে পারে- ১। টীকাগ্রন্থ, ২। বৃত্তিগ্রন্থ। 'যোগসূত্রের' উপর রচিত বিভিন্ন গ্রন্থগুলি হল-

১. ব্যাসদেবকৃত- যোগভাষ্যম् (যোগসূত্রের উপর আধাৰিত ভাষ্য)
২. বাচস্পতি মিশ্রকৃত- তত্ত্ববৈশেষারদী (ব্যাসভাষ্যের টীকা)
৩. বিজ্ঞানভিক্ষুকৃত- যোগবার্তিকম্ (ব্যাসভাষ্যের টীকা)
৪. হরিহরানন্দকৃত- ভাস্তী (ব্যাসভাষ্যের টীকা)

৫. ভোজদেবকৃত- রাজমার্ত্তন্ডঃ (যোগসূত্রের বৃত্তি)

৬. নারায়ণতীর্থকৃত- সূত্রার্থবধিনী (যোগসূত্রের বৃত্তি)

৭. সত্যদেবকৃত- ঘোরহস্য (যোগসূত্রের স্বতন্ত্র টাকা)

মহৰ্ষি পতঞ্জলির যোগসূত্র চারটি পরিচেছে বিভক্ত- সমাধিপাদ, সাধনপাদ, বিভূতিপাদ ও কৈবল্যপাদ।

যোগের প্রকৃতি, উদ্দেশ্য, প্রকার, চিত্তবৃত্তি এবং যোগাঙ্গ নিয়ে সমাধিপাদে আলোচিত হয়েছে। ক্রিয়াযোগ, ক্লেশ, কর্মযোগ, দুঃখ থেকে মুক্তি লাভের উপায় প্রভৃতি আলোচিত হয়েছে সাধনপাদে। যোগ প্রক্রিয়ায় যে সমস্ত অলৌকিক ক্ষমতার অধিকারী হওয়া যায় তার বর্ণনা পাওয়া যায় বিভূতিপাদে। মুক্তির স্বরূপ, মুক্তিপ্রাপ্ত পুরুষের স্বরূপ প্রভৃতির বর্ণনা পাওয়া যায় চতুর্থ এবং সর্বশেষ পাদে অর্থাৎ কৈবল্যপাদে। যোগ শব্দটি প্রথম উল্লেখিত হয়েছে কঠোপনিষদে।<sup>৩</sup> এই গ্রন্থে 'যোগ' শব্দটির অর্থ ইন্দ্রিয় সংযোগ ও মানসিক প্রবৃত্তিগুলির উপর নিয়ন্ত্রন স্থাপনের মাধ্যমে চেতনার সর্বোচ্চস্তরে উন্নীত হওয়া। যোগের উল্লেখ পাওয়া যায় শ্঵েতাশ্বতর উপনিষদেও।<sup>৪</sup> এই উপনিষদে শ্বাস-প্রশ্বাসের গ্রহণ ও ত্যাগ এবং মনকে কীভাবে শ্বাস- প্রশ্বাসের মাধ্যমে নিয়ন্ত্রন করা যায় তা ব্যাখ্যা করা হয়েছে। তৈত্তিরিয় উপনিষদের দ্বিতীয় বল্লীতে যোগের কথা আলোচিত হয়েছে।<sup>৫</sup> এখানে পাঁচটি কোষ অর্থাৎ অন্নময়, প্রাণময়, বিজ্ঞানময়, মনোময়, আনন্দময় -এর আলোচনা বর্ণিত হয়েছে। জ্ঞানলাভের দ্বারা যে আত্মার মুক্তি হয় তা এখানে বর্ণিত হয়েছে। আবার মৈত্রী উপনিষদেও যোগের প্রমাণ পাওয়া যায়।<sup>৬</sup> এখানে সাধনার অঙ্গরূপে ষষ্ঠ অঙ্গের কথা বলা হয়েছে- প্রাণায়াম, প্রত্যাহার, ধ্যান, ধারনা, তর্ক, সমাধি। ভারতীয় দর্শনের অন্যতম দুই শাখা- সাংখ্য এবং যোগ। প্রকৃতপক্ষে, কপিলের সাংখ্য দর্শন ও পাতঞ্জল যোগদর্শন একই মূলতত্ত্বের বিশেষ প্রকাশ। ন্যায়-বৈশেষিক যেমন সমানতত্ত্ব তেমনি সাংখ্য এবং যোগও সমানতত্ত্ব দর্শন। সাংখ্য দর্শনে যেখানে পঞ্চবিংশতিতত্ত্ব স্বীকৃত সেখানে যোগ দর্শনে এই তত্ত্ব ব্যতিত টিশ্বরকেও স্বীকার করা হয়। যদিও যোগদর্শন স্বীকৃত টিশ্বর কোন সাধারণ পুরুষ নয়, তিনি ক্লেশ, কর্ম, বিপাক এবং আশয় দ্বারা অপরামৃষ্ট পুরুষবিশেষ। এজন্যই গীতাতে বলা হয়েছে স্বল্পবুদ্ধির অধিকারী ব্যক্তি কেবল সাংখ্য ও যোগকে পৃথক বলে মনে করেন।<sup>৭</sup> যোগ এবং ন্যায় উভয় সম্প্রদায়ই অষ্টাঙ্গ যোগের মধ্যে যম, নিয়ম ও সাধনকে মুক্তির যোগ্যতা প্রাপ্তির উপায় বলে স্বীকার করেছেন।<sup>৮</sup> যোগদর্শনে উল্লেখিত অষ্টাঙ্গ যোগের মধ্যে আসন এবং ধ্যানের আবশ্যকতা বেদান্ত দর্শন স্বীকার করেন। তাঁদের মতে, বিনা আসনের দ্বারা ধ্যান প্রভৃতিতে সফলতা পাওয়া অত্যন্ত কঠিন।<sup>৯</sup> যোগ ভারতীয় দর্শনে আস্তিক সম্প্রদায়ভুক্ত এবং বৌদ্ধ নাস্তিক সম্প্রদায়ভুক্ত বলে পরিচিত। কিন্তু উভয়দর্শনেই দুঃখ এবং দুঃখ থেকে মুক্তিলাভের কথা স্বীকার করা হয়। বৌদ্ধধর্মে আর্যসত্য, ব্রহ্মবিহার, অষ্টাঙ্গিক মার্গের সাথে যোগদর্শনের অনেক তত্ত্বের মিল পাওয়া যায়। দুঃখ আছে, দুঃখের কারণ আছে, দুঃখের নির্বাত্তি সম্ভব এবং দুঃখের নির্বাত্তির উপায় আছে। আবার যোগসূত্রে বলা হয়েছে- "মৈত্রী-করুণা-মুদিতোপেক্ষণাং সুখদুঃখপুণ্যাপুণ্যবিষয়ানাং ভাবনাতশ্তুপ্রসাদনম"-<sup>১০</sup>। এই সূত্রের সাথে বৌদ্ধধর্মের ব্রহ্মবিহারের অর্থাৎ মৈত্রী, করুণা, মুদিতা ও উপেক্ষার ভাব প্রায় একই। বৌদ্ধদর্শনে নির্বাণ লাভের উপায় হিসাবে যে অষ্টাঙ্গিক মার্গের উল্লেখ পাওয়া যায় তার সাথে যোগদর্শনের অষ্টাঙ্গযোগ ও তার উপাঞ্জগুলির মিল পাওয়া যায়।<sup>১১</sup> অষ্টাঙ্গিকমার্গগুলি হল- সম্যক্ দৃষ্টি, সম্যক্ সংকল্প, সম্যক্ বাক্ত, সম্যক্ কর্মান্ত, সম্যক্ আজীব, সম্যক্ ব্যায়াম, সম্যক্ স্মৃতি, সম্যক্ সমাধি।

মহাভারতের শ্রীমদ্বগবদগীতায় জ্ঞানযোগ, ভক্তিযোগ, কর্মযোগ এবং রাজযোগের মধ্যে এক অপূর্ব সমন্বয় লক্ষ্য করা যায়। গীতার অষ্টাদশ অধ্যায়ের মধ্যে 'কর্মযোগ' একটি অধ্যায়। এই অধ্যায়ে শিষ্যরূপী অর্জুন জিজ্ঞাসা করছেন এবং গুরুরূপী ভগবান শ্রীকৃষ্ণ তার উত্তর দিচ্ছেন। ভগবান শ্রীকৃষ্ণ শিষ্য অর্জুনকে বলেছিলেন, "যোগস্থঃ কুরু কর্মণী"-<sup>১২</sup> অর্থাৎ হে অর্জুন যোগবুদ্ধ হয়ে কর্ম কর। 'যোগ' শব্দটি এখানে বিশেষ অর্থবোধক। সর্বতোভাবে কর্মে কুশলতা লাভ করাই যোগের মূল অর্থ। টিশ্বরপ্রাত্যর্থে কর্ম করাই যোগবুদ্ধ কর্ম, বাকী সকল কার্য ইন্দ্রিয় সুখের জন্য করা। এই অবস্থাতেই একমাত্র নিষ্কাম কর্ম হয়, বাকী সব সকাম কর্ম। গীতায় ভগবান শ্রীকৃষ্ণ নিষ্কাম কর্ম করাকেই কর্মযোগ বলেছেন। মহাভারতে সাধনার নিমিত্ত অষ্টাঙ্গ বুদ্ধির কথা বলা হয়েছে যা যোগদর্শনে বর্ণিত অষ্টাঙ্গ যোগের সাথে সাদৃশ্যপূর্ণ। যেমন- ধ্যেয় বিষয়ের ওপর সঠিক সংকল্প, সঠিক ইন্দ্রিয় নির্গত, অহিংসাদি ব্রতের সঠিক পালন, গুরুকে সঠিক সেবা প্রদান, যুগোপযোগী আহার ভক্ষণ, বেদাদি শাস্ত্রের সঠিক অধ্যয়ন, কর্মকে ভগবানে সমর্পণ ও চিত্ত নিরোধ করা।<sup>১৩</sup> মহৰ্ষি পতঞ্জলি সমাধির ক্ষেত্রে যে প্রকার বিতর্ক, বিচার, আনন্দ, আস্মিতা স্বীকার করেছেন, মহাভারতকারণ সেই প্রকার সমাধির প্রারম্ভিক অবস্থায় বিচার, বিবেক এবং বিতর্কের ভাবকে স্বীকার করেছেন।<sup>১৪</sup> মহাভারতে প্রাণায়ামের যথেষ্ট প্রমাণ পাওয়া যায়। তৎকালীন সময়ে বহু মহিলাও প্রাণায়াম করতেন তার উল্লেখ পাওয়া যায়। বনপর্বে দেখা যায়, কুন্তীদেবীর সেবা দ্বারা প্রসন্ন হয়ে ঋষি দুর্বাশা তাকে এক মন্ত্র প্রদান করেন, যার দ্বারা তিনি যেকোন দেবতাকে আহ্বান করতে সক্ষম হন। কুন্তীদেবী সেই মন্ত্রের শক্তি কৌতুহলবশতঃ পরীক্ষা করতে গিয়ে সূর্য দেবতার বিধিপূর্বক আচমন ও প্রাণায়াম করে তার আহ্বান করেন।<sup>১৫</sup> আবার অন্য এক যমদেব ব্রহ্মদেবতাকে প্রসন্ন করতে গিয়ে এবং মনের অভিষ্ঠ প্রাপ্তি হেতু প্রাণায়ামে তৎপর হয়ে গঞ্জাতটে পাথরের মত নিশ্চল হয়ে সাধনারত হন।<sup>১৬</sup> মহাভারতে অনেক যোগী, যোগিনী ও যোগাচার্যের উল্লেখ পাওয়া যায় এবং এর থেকে প্রমানিত হয় তৎকালিন সময়ে যোগের জনপ্রিয়তা ছিল। বিভিন্ন

যোগবলসম্পন্ন খাসির উল্লেখ পাওয়া যায়- গাধি, জৈগীষব্য, দেবল, মতঙ্গ, সপ্তর্ষি প্রভৃতি। মহাভারতে বেশ কিছু নারী যোগিনীর উল্লেখ পাওয়া যায়- সুলভা, কুমারী ব্রাহ্মণী প্রভৃতি।

যোগ ভারতের প্রাচীন ঐতিহ্য। সুপ্রাচীনকাল থেকেই যোগচর্চার অভ্যাস চলে আসছে। এই প্রথা ভারতে আজও প্রচলিত। ২০১৪ সালে ২৭ শে সেপ্টেম্বর রাষ্ট্রী সংঘে ভারতের প্রধানমন্ত্রী নবেন্দ্র মোদী ভাষণ দেওয়ার সময় ২১ শে জুন তারিখটিকে আন্তর্জাতিক যোগ দিবস' বলে ঘোষনা করার প্রস্তাব দেন। ওই বছরই ১১ই ডিসেম্বর রাষ্ট্রী সংঘ সাধারণ পরিষদ ২১ জুন তারিখটিকে আন্তর্জাতিক যোগ দিবস' বলে ঘোষনা করেন। ২০১৫ সালের ২১ জুন তারিখ থেকে বিশ্বজুড়ে যোগদিবস পালন করা শুরু হয়। বর্তমান সময়ে যোগের জনপ্রিয়তা দিন দিন বেড়ে চলেছে। বহু মানুষ শান্তি ও সুস্থ স্বাস্থ্যের সন্ধানে যোগের আশ্রয় নিচ্ছেন। ভারতবর্ষে প্রতিষ্ঠিত কিছু যোগগুরু যাদের পাণ্ডিত্য বিশ্বব্যাপি, তাঁরা যোগসাধনাকে বহুপথ এগিয়ে দিয়েছেন।

**তিরুমালাই কৃষ্ণমাচার্য:** ইনি হলেন আধুনিক যোগের জনক আয়ুর্বেদ শাস্ত্র এবং যোগকে এক করে কাজ করেছেন। যোগব্যায়ামকে উন্নীত করার জন্য বক্তৃতা ও প্রদর্শনী দিয়ে ভারত জুড়ে প্রমন করেছিলেন, যার মধ্যে দৃশ্যত তাঁর হাদ্যপ্লান বন্ধ করার মতো কীর্তি ছিল। তিনি যে যোগব্যায়ামের শৈলী তৈরি করেছিলেন তাকে ভিন্নযোগা বা ভিন্নযাসা ক্রামা যোগ বলা হয়।

**বি. কে. এস. আয়েঙ্গার :** কৃষ্ণমাচার্যের ছাত্রদের মধ্যে অন্যতম ছিলেন বি. কে. এস. আয়েঙ্গার। শৈশবে তিনি দুর্বল ছিলেন কিন্তু পরে যোগসাধনার দ্বারা তিনি নিজেকে সুস্থাম কর্মযোগী হিসাবে প্রতিষ্ঠা করেছেন। ভারত সরকার ১৯৯১ সালে পদ্মশ্রী, ২০০২ সালে পদ্মভূষণ এবং ২০১৪ সালে পদ্মবিভূষণ প্রদান করেন। উনি ৯০ বছর বয়সে প্রতিদিন ৩ ঘন্টা করে আসন এবং ১ ঘন্টা করে প্রাণায়াম অনুশীলন করতে পারতেন। তাঁর বিখ্যাত গ্রন্থ- *Light on Yoga* ১৯ টি ভাষায় ৩ মিলিয়ন কপি বিক্রি হয়েছে।

**সদগুরু বাসুদেব :** ইনি কর্ণটিকের মানুষ। আধ্যাত্মিকতার ক্ষেত্রে তার অবদানের স্বীকৃতি স্বরূপ ২০১৭ সালে ভারত সরকার বেসামরিক পুরস্কার প্রদান করেন। তিনি 'ঈশা ফাউন্ডেশন' প্রতিষ্ঠা করেন যা সারা পৃথিবী জুড়ে ছড়িয়ে আছে। ১৯৯৬ সালে সদগুরু বাসুদেব ভারতীয় হকিদলের মানসিক শক্তি যোগাতে যোগ শিক্ষা দিয়েছিলেন।

**শ্রী শ্রী রবিশঙ্কর :** ইনি একজন ধর্মগুরু। ১৯৮১ সালে তিনি 'আর্ট অফ লিভিং' প্রতিষ্ঠা করেন যা এখন সারা পৃথিবী জুড়ে কাজ করছে। এই ফাউন্ডেশনের মূল লক্ষ্য হল মানুষের ব্যক্তিগত মানসিক, দৈহিক, সামাজিক সমস্যা দূর করা। শরীরের স্পন্দন থেকে মনকে সুস্থ করা, শরীরকে চাঞ্চা রাখা'- এই পদ্ধতিকে রবিশঙ্কর সুদর্শন প্রক্রিয়া বলে অভিহিত করেছেন। কর্ণটিকের একটি নদীর ধারে টানা ১০ দিন ধরে এই যোগ শিক্ষা দিয়েছেন।

**বাবা রামদেব :** ইনি ভারতের একজন বিখ্যাত ধর্মগুরু। টেলিভিশনে তাঁর শরীরচর্চার অনুষ্ঠানটি ছড়িয়ে পড়েছে সীমান্তের বাইরে। তিনি 'পতঞ্জলি' নামে একটি কোম্পানিও প্রতিষ্ঠা করেন। সমবেত লোকজনের সামনে তিনি শারীরিক কসরত দেখানোর অনুষ্ঠানটি করে আসছেন এক দশকের বেশি সময় ধরে।

ভারতীয় যোগচর্চার পরম্পরাকে অনুসরন করে পরবর্তীকালে বেশকিছু সাধক পরম্পরার বিকাশ লাভ ঘটেছিল- শ্রী ত্রৈলঙ্ঘনামী (১৬০৭-১৮৮৭ খ্রীঃ), বামাক্ষ্যাপা (১৬০৭-১৮৮৭ খ্রীঃ), আচার্য রামানুজ (১০১৭-১১৩৭ খ্রীঃ), শ্রী লোকনাথ ব্রহ্মচারী (১৭৩০-১৮৯০ খ্রীঃ), আচার্য শঙ্কর (৭৮৮-৮২০ খ্রীঃ) প্রমুখ। বৈদিক মন্ত্র যারা দর্শন করেছিলেন সেই খাসিরের মধ্যে রয়েছেন নারী খাসি। বৈদিক যুগের ঘোষাবিশ, লোপামুদ্রা প্রভৃতি নারী সাধিকাদের হাত ধরে আধুনিক যুগে এবং বর্তমান সমাজে বিশ্বপ্রিয়া (১৫০০ খ্রীঃ), বৈরবী ঘোগেশ্বরী (১৮৬১ খ্রীঃ), নিবেদিতা (১৮৬৩-১৯১১ খ্রীঃ) প্রমুখ উচ্চকোটি নারী সাধিকাদের আবির্ভাব সমানভাবেই ঘটেছিল।

### তথ্যসূত্র-

১. Indian Philosophy- Dr. Radhakrishnan- ২৩৪২
২. যোগসূত্র ১/২
৩. স্বামী বিবেকানন্দ বাণী ও রচনা
৪. যোগিযাজ্ঞবল্ক্য ১২.৫
৫. মহাভারত ১১.৩, ৪৯.৬৫, মনুসংহিতা -১.৮৮-৮৯, ভামতী-২.১.৩
৬. কর্তৃপক্ষনিষদ- ২/৩/১০-১১ এবং ১/২/১২
৭. শ্঵েতাশ্বতর উপনিষদ- ২/৯
৮. তৈত্তিরীয় উপনিষদ- ২/৪/১
৯. মৈত্রী উপনিষদ- ৬/১৮
১০. শ্রীমদ্বগবগীতা- ৫/৪
১১. তদৰ্থ ঘমানিয়মাভ্যামাত্মসংক্ষারা যোগাচ্চাত্মবিধ্যপায়েঃ- ন্যায়সূত্র ৪/২/৪৫
১২. আসীনঃ সন্তবাঃ- ব্রহ্মসূত্র ৪/১/৬
১৩. যোগসূত্র- ২/১৫

১৪. যোগসূত্র- ১/৩৩
১৫. উমেশ মিশ্র, ভারতীয় দর্শন- পৃষ্ঠা-১৪১
১৬. শ্রীমদ্বগবগীতা- ২.৪৮
১৭. মহাভারত ১২/৩০১/৩৪
১৮. মহাভারত ১২/১৯৫/১১৫
১৯. মহাভারত ৩/৩০৬/৭-৮
২০. মহাভারত ৭/৫৪/২৪

#### গ্রন্থপঞ্জী-

১. দাস, দিব্যসুন্দর, যোগ সন্দর্শন
২. বসু, নগেন্দ্রনাথ, বাংলা বিশ্বকোষ, দিল্লী, ১৯৮৮
৩. বসু, সুতপা, ভারতীয়দর্শন, ২০০৫
৪. বিষ্ণু, এস, সুখথাক্ষর (সম্পা.), মহাভারতম्, ১৯৭১
৫. ভট্টাচার্য, সমরেন্দ্র, ভারতীয় দর্শন, ২০১৩
৬. মজুমদার, রমেন, যোগাসনে যোগ আরোগ্য
৭. মণিক, সবিতা, যোগ ব্যায়াম
৮. মহৰ্ষি পতঙ্গলকৃত যোগদর্শন, গীতাপ্রেস, গোরক্ষপুর
৯. রামসুখদাস, স্বামী, শ্রীমদ্বগবগীতা, গোরক্ষপুর, ২০১৬
১০. সরকার, নরোত্তম, পাতঙ্গল যোগদর্শন ও মহাভারতে যোগভাবনা
১১. সাহা, কানাইলাল, রোগারোগ্য যোগ ব্যায়াম
১২. স্বামী বিবেকানন্দ, বাণী ও রচনা
১৩. Dasgupta S. N, *Yoga as Philosophy and Religion*
১৪. Devi Meenkshi, *The Sound of Yoga*

## দুঃখ : রবীন্দ্র-বৌদ্ধ দার্শনিক আঙ্গি

**পায়েল ঘোষ  
স্টেট এডেড কলেজ টিচার (SACT)  
নগর কলেজ, মুর্শিদাবাদ**

**সারসংক্ষেপ:** আমাদের জাপিত জীবনের সাথে ওতপ্রোত জড়িত শব্দ হল সুখ-দুঃখ। আমরা সকলে সুখকে চাই, কিন্তু দুঃখকে চাই না। যেহেতু আমরা দুঃখকে চাই না তাই যাই না কেন তার মধ্যে সামান্যতম দুঃখের অনুভবও আমাদের কাছে হয়ে ওঠে প্রবল। আর তখন আমাদের মুখ্য উদ্দেশ্য হয়ে ওঠে কীভাবে সুখকে চিরস্থায়ী এবং দুঃখ থেকে জীবনকে মুক্ত করা যায়। আমরা ভুলে যাই, দিনের সাথে যেমন রাত আসে তেমনি সুখের সাথে আসে দুঃখ। আমরা বুঝি না যে- ঠিক যেমনভাবে কালো-কে বাদ দিলে সাদা-কে বোঝা সম্ভব নয়, রাতের ধারনা বা অনুভব ছাড়া হলে দিনের আলোর গুরুত্ব নেই, তেমনই দুঃখকে ছাড়া সুখের পরমপ্রাণির আনন্দ অসম্ভব। এই না বোঝার কারণে, সঠিক জ্ঞান ও উপলক্ষ্মি না হওয়ার কারণে আমরা আরও বেশি করে পরমপ্রাণি, পরম আনন্দ, পরম সুখ থেকে দূরে যেতে থাকি। তাই সুখের জন্য, পরম আনন্দের জন্য দুঃখকে বোঝা, তার গুরুত্ব উপলক্ষ্মি করা বিশেষভাবে প্রয়োজনীয়।

বাঙালি তথা ভারতীয় তথা মানুষের জীবনের প্রতি মুহূর্তের সঙ্গী হলেন রবীন্দ্রনাথ। তাঁর গানে-কবিতায়, প্রবন্ধে-ছোটোগল্লে, নাট্যগীতি-আলেখ্যে আমাদের জীবনের ভালোলাগা, ভালোবাসা, আনন্দ, কষ্ট, অভিমান, ভয়, রাগ, ঈর্ষা -সকল কিছুর এত সুন্দর বর্ণনা আছে যে আমরা যেকোনো পরিস্থিতিতে তার স্বাদ আস্বাদন করতে পারি। তিনি আমাদের প্রাণের কবি, মনের সবচেয়ে কাছের লেখক। তাই তিনি কীভাবে দুঃখকে বুঝেছেন, কীভাবে তিনি দুঃখ থেকে পরিত্রাণের পথ দেখিয়েছেন- সেই বিষয়ের দার্শনিক দৃষ্টিভঙ্গিগত ব্যাখ্যা এখানে করার চেষ্টা করা হবে।

সবচেয়ে গুরুত্বপূর্ণ দিক হল, দর্শনে যেহেতু দুঃখের প্রসঙ্গ বৌদ্ধদর্শনগত দৃষ্টিকোণের আলোচনা ছাড়া অসম্পূর্ণ তাই সেই প্রেক্ষিতটিও আলোচিত হবে। মূলত এইস্থানে আলোচ্য বিষয় হল- রবীন্দ্রনাথ ঠাকুর বৌদ্ধদর্শনের দ্বারা প্রভাবিত হয়ে কীভাবে দুঃখের ব্যাখ্যা করেছেন ও তার থেকে পরিত্রাণের পথের সন্ধান দিয়েছেন তা অনুসন্ধানের প্রচেষ্টা।

**সাংকেতিক শব্দ:** দুঃখ, আর্থসত্য, ব্রহ্মবিহার, মৈত্রিভাবনা, মুক্তি

আলোচনার শুরুতেই বলে নেওয়া প্রয়োজন- রবীন্দ্রনাথ ঠাকুরের নামটি দর্শনের আলোচ্য পরিসরের অন্তর্গত হলেই আমরা খুব বেশিভাবে তাঁর সাথে উপনিষদকে মিলিয়ে আলোচনা করে থাকি। কিন্তু, তিনি যে কী ভীষণভাবে বুদ্ধদেবের ও বৌদ্ধদর্শনের দ্বারা প্রভাবিত ছিলেন তা বেশিরভাগ সময়ই আলোচনার ক্ষেত্রে আমাদের চোখের আড়াল হয়ে যায়। 'দুঃখ'-এর আঙ্গিকেই রবি ঠাকুর ও বৌদ্ধদর্শনের মেলবন্ধনের প্রকাশ সবচেয়ে সহজ।

দার্শনিক দৃষ্টিকোণ থেকে 'দুঃখ' প্রসঙ্গে বুঝতে হলে যে সম্প্রদায়ের ব্যাখ্যা ছাড়া এই আলোচনা অসম্পূর্ণ তা হল বৌদ্ধদর্শন তথা বুদ্ধদেবের এই বিষয়ে বর্ণনা। মানুষের দুঃখ এবং তা থেকে মুক্তির পথের সন্ধান নিয়েই গোটা বৌদ্ধদর্শন সৃষ্টি হয়েছে। অনান্য সম্প্রদায় সকল প্রকার দুঃখ থেকে মুক্তির কথা বললেও মানুষের যতটা কাছ থেকে, বৌদ্ধদর্শন দুঃখ-কে বুঝে সমাধান দিয়েছে তা অন্য কোন সম্প্রদায়ের পক্ষে সম্ভব হয়নি বলে মনে হয়। সেকারণেই এই ধর্ম ও দর্শন সম্প্রদায় মানুষের মধ্যে সবচেয়ে বেশি প্রসার লাভ করেছিল। তাই আমরা আমাদের কাছের মানুষ ও মানুষের সবচেয়ে কাছের দর্শন সম্প্রদায়ের মেলবন্ধন ঘটিয়ে আমাদের সবচেয়ে না চাওয়ার, কিন্তু সবচেয়ে বেশি পেয়ে থাকার বিষয়টিকে নিয়ে আলোচনা করব।

বুদ্ধদেবের চিন্তা-ভাবনা রবীন্দ্রনাথ ঠাকুরকে জীবনের অনেক দুঃখের উত্তরণের ক্ষেত্রে সাহায্য করেছিল। কাজেই, তাঁর সঙ্গে বুদ্ধদেবের ধারনার ঠিক কী কী বিষয়ে মিল ও অমিল ছিল তা প্রথমে আমাদের জেনে নেওয়া প্রয়োজন। যদিও আলোচনার প্রসারের সাথে সাথে আমরা দেখতে পাব অমিল কিছুটা থাকলেও মিলও

ছিল প্রচুর। সামান্য কিছু বিষয় হয়তো তিনি মেনে নিতে পারেননি। এসব ব্যাখ্যার আগে বৌদ্ধধর্ম তথা দর্শনের মূল বক্তব্য কী তা জেনে নেওয়া প্রয়োজন।

**বৌদ্ধদর্শনের মূলস্তুত হল চারটি আর্থসত্য। যথা- দুঃখ, দুঃখসমুদায়, দুঃখ-নিরোধ বা নির্বাণ, দুঃখ নিরোধমার্গ।**

প্রথম আর্থসত্য হল দুঃখ। সবই দুঃখময়। আমাদের মধ্যে যেকোন কারণে হতাশা আসলে তা হল দুঃখ। অপ্রিয় বস্তু বা ব্যক্তি সংযোগ, প্রিয় ব্যক্তির বিচ্ছেদ, কাম্যবস্তু না পাওয়া, ব্যাধি, জরা, মৃত্যু- এই সকলই হল দুঃখ। এমনকি পঞ্চেন্দ্রিয়ের দ্বারা গ্রাহ্যবস্তুকেও দুঃখ বলা হয়েছে। আর এই সকল কিছু যেহেতু আমাদের জন্মের ফলে ভোগ করতে হয় তাই বৌদ্ধদর্শন তথা বুদ্ধদেবের মতে আমাদের জন্মটাই হল একপ্রকার দুঃখ।

দুঃখগুলি কী কী তা বলার পর উনি দুঃখের কারণ কী তা অনুসন্ধান করেছেন।

দ্বিতীয় আর্থসত্য হিসাবে তাই বুদ্ধদেব দুঃখসমুদায় বা দুঃখের কারণের কথা বলেছেন। তিনি এই প্রসঙ্গে প্রতীত্যসমুৎপাদ বা কার্য-কারণের কথা বলেছেন। আমাদের জন্ম থেকে শুরু করে মৃত্যু এবং পূর্নর্জন্ম পুরোটার জন্মই কার্য-কারণ শৃঙ্খল। এই শৃঙ্খলের কথা বলতে গিয়ে তিনি দ্বাদশ নিদান বা ভবচক্রের কথা বলেছেন। যা হল- অবিদ্যা, সংক্ষার, বিজ্ঞান, নামরূপ, ষড়ায়তন, স্পর্শ, বেদনা, তৃষ্ণা, উপাদান, ভব, জাতি, জরামরণ। বৌদ্ধমতে এই ভবচক্রের বন্ধন থেকে মুক্তি না ঘটলে আমাদের নির্বাণ লাভ বা চিরমুক্তি সম্ভব নয়।

তৃতীয় আর্থসত্য অর্থাৎ চিরমুক্তি বা নির্বাণ সম্ভব অবিদ্যার বিনাশে। আমাদের উপযুক্ত জ্ঞানের অভাবেই আমরা বারবার এই জীবনের চক্রে ফিরে আসি। চারটি আর্থসত্যের প্রকৃত জ্ঞান হলেই আমরা আর কোনরকম দুঃখ পাব না এবং আমাদের নির্বাণ লাভ সম্ভব হবে।

অবিদ্যা মুক্তির পথের সন্ধান দিতে গিয়ে তিনি চতুর্থ আর্থসত্য, দুঃখ নিরোধ মার্গের কথা বলেছেন। অষ্টাঙ্গিক মার্গ বা আটটি পথের মাধ্যমে আমরা নির্বাণ প্রাপ্ত হতে পারব। সেই পথগুলি হল-

- সম্যক্ বাক্ অর্থাৎ মিথ্যা কথা, কষ্ট কথা, আঘাতজনক কথা, কর্কশ বাক্য উচ্চারণ না করা।
- সম্যক্ কর্মান্ত অর্থাৎ চুরি না করা, হত্যা না করা, কারও ওপর দৈহিক নির্যাতন না করা।
- সম্যক্ আজীব অর্থাৎ এমন কোনভাবে জীবিকা-নির্বাহ করা যাবে না যাতে অন্যের ক্ষতি হয়।
- সম্যক্ ব্যায়াম অর্থাৎ মন থেকে কুচিন্তা দূর করা, সুচিন্তাকে মনে স্থান দেওয়া। কুচিন্তার কারণ অনুসন্ধান করে তাকে দূর করার চেষ্টা করা।
- সম্যক্ স্মৃতি অর্থাৎ সকল দূর্ভাবনাগুলোকে দূর করে আর্থসত্য চতুর্থয়ের কথা সর্বদা চিন্তায় রাখা।
- সম্যক্ সমাধি অর্থাৎ নির্দিষ্ট সত্যের চিন্তায় মনকে নিবিষ্ট করার চেষ্টা করা।
- সম্যক্ দৃষ্টি অর্থাৎ বুদ্ধদেবের বাণীকে উপলব্ধি করার চেষ্টা এবং সত্যকে সবসময় মনে চিন্তা করা।
- সম্যক্ সংকল্প অর্থাৎ মুক্তি লাভ করার দৃঢ় মনোভাব পোষণ করা।

-প্রথম তিনটিকে একত্রে বলে শীল, পরের তিনটিকে সমাধি এবং শেষ দুটিকে একত্রে বলা হয় প্রজ্ঞা।

শীল, সমাধি, প্রজ্ঞাকে উক্ত ত্রুটি ক্রমান্বয়ে অভ্যাস করার কথা বৌদ্ধদর্শনে বলা হয়েছে। এর সাথে ব্রহ্মবিহারের কথাও বলা হয়েছে। মৈত্রী, করুণা, মুদিতা, উপেক্ষা -কে একত্রে ব্রহ্মবিহার বলা হয়। 'মৈত্রী ভাবনা' হল যেকোনভাবে সকল প্রকার দ্বেষ পরিত্যাগ করতে হবে। এরপরেই 'করুণা ভাবনা'। কেবল নিজের আত্মায়-পরিজনের, প্রিয়বন্ধু, কাছের মানুষের ক্ষেত্রে নয় যেকোন কাতর, দুর্গত, দরিদ্র ব্যক্তির প্রতি করুণার ভাব পোষণ করতে হবে। এরপর 'মুদিতা ভাবনা' -কেও নিজের মনে স্থান দিতে হবে। বিষয়টি প্রত্যেকের কাছে স্পষ্ট করার জন্য ব্যাখ্যা করতে গিয়ে ডঃ সুকোমল চৌধুরী তাঁর গৌতম বুদ্ধের ধর্ম ও দর্শন নামক গ্রন্থে বলেছেন- "যে ব্যক্তি সুখে নিরুদ্ধে জীবন-ঘাপন করিতেছে, তাহাকে দেখিয়া 'অহো! এ ব্যক্তি বেশ মনানন্দে বাস করিতেছে; অনান্য লোকও তাহার ন্যায় সন্তুষ্টভাবে বাস করুক।' এই প্রকারে মুদিতা ভাবকে সম্প্রসারণ করিয়া এক এক দিকে ব্যাপৃত করিবেন।"

এইভাবে শক্তিকেও আপন করে নেওয়া যায় এবং তার জন্যও সুখ কামনা করা অতিরিক্ত সহজ ব্যাপারে পরিণত হয়। ব্রহ্মবিহারে 'উপেক্ষা ভাবনা' প্রসঙ্গে বলা হয়েছে- ধীরে ধীরে সকল প্রকার অনুভূতি থেকে নিজেকে বিরত রাখার অভ্যাস করতে হবে। শক্তি বা মিত্র সকলের সুখ বা দুঃখে কোনরকম অনুভূতি না দেখানো হল উপেক্ষা।

আর্যসত্য চতুষ্টয়ের জ্ঞান লাভ করে অষ্টাঙ্গিক মার্গের দ্বারা নিজেকে ভবচক্রের বন্ধন থেকে মুক্ত করা ও ব্রহ্মবিহারের ভাবকে অভ্যাস করার ফলেই নিজের সকল দুঃখ মুক্তি ও তার সাথে অন্যদেরও দুঃখকেও মুক্তির পথে নিয়ে যাওয়া সম্ভব। উল্লেখ্য, বৌদ্ধদর্শন কেবল নিজের মুক্তি কথাই বলে না, সাথে জগত-সংসারের প্রত্যেকে যাতে এই দুঃখের জীবনের থেকে নিজেকে উদ্বার করতে পারে তার বিধানও দেওয়া হয়েছে।

বৌদ্ধধর্ম ও দর্শনের ধারা কেবল বৌদ্ধ-দার্শনিকগণই নন রবীন্দ্রনাথ ঠাকুরও সুন্দরভাবে বহন করে নিয়ে গেছেন। রবীন্দ্রনাথ ঠাকুর মনে করতেন যে, আর্যগুণে ভারতের আদিম অধিবাসীদের ধর্ম ও অনুপ্রবেশকারীদের ধর্মের মধ্যে একটা বিবাদ ছিল, যা বৌদ্ধধর্মের আগমনে দূর হয়ে যায়, এমনকি বুদ্ধদেব যেভাবে তাঁর ধর্মকে প্রতিষ্ঠা করেছিলেন তাতে তা হিন্দুধর্মের এক অঙ্গ হয়ে উঠেছিল; যাকে রবীন্দ্রনাথ ঠাকুরের 'নবহিন্দুধর্ম' নামে অভিহিত করেছেন। তিনি বুদ্ধদেব গ্রন্থে এবিষয়ে বলেছেন- "বুদ্ধদেব যে অস্ত্রভেদী মন্দির রচনা করিলেন, নবপ্রবুদ্ধ হিন্দু তাহারই মধ্যে তাঁহার দেবতাকে লাভ করিলেন। বৌদ্ধধর্ম হিন্দুধর্মের অন্তর্গত হইয়া গেল। মানবের মধ্যে দেবতার প্রকাশ, সংসারের মধ্যে দেবতার প্রতিষ্ঠা, আমাদের প্রতি মুহূর্তের সুখ-দুঃখের মধ্যে দেবতার সঞ্চার, ইহাই নবহিন্দুধর্মের মর্মকথা হইয়া উঠিল।"<sup>২</sup>

ববি ঠাকুরকে এই বিষয়টি খুব নাড়া দিয়েছিল যে, বুদ্ধদেব বাইরের কোন শক্তির কাছ থেকে নয়, মানুষের মধ্যে থেকেই দয়া, কল্যাণ ভাবকে জাগ্রত করবার চেষ্টা করেছিলেন। মানুষ যে কেবল দেবতার অধীন নয়, তার নিজের মধ্যেই যে শক্তি রয়েছে – সেই আত্মশক্তির চেতনা বুদ্ধদেব মানুষের মধ্যে ছড়িয়ে দিতে চেয়েছিলেন।

রবীন্দ্রনাথ ঠাকুরের মতে, বুদ্ধদেব যখন সকলের দুঃখের কারণ খুঁজতে গেছেন তখনই তিনি বুঝতে পেরেছেন যে, আত্মোপলক্ষির অভাব, সঠিক জ্ঞানের অভাবের কারণেই মানুষ নিজের স্বরূপ প্রকাশে ব্যর্থ। তাই তিনি সকলকে কেবলই প্রকাশিত হতে বলেছেন। এই প্রকাশ করতে না পারার জন্যই মানুষের এত দুঃখ। সত্য জ্ঞানের জাগরন ঘটানোর জন্য এবং দুঃখের চিরমুক্তির জন্য বুদ্ধদেব কতকগুলি নিষেধ, যাকে বৌদ্ধধর্মের পরিভাষায় শীল বলা হয় তা পালন করতে বলেছেন। শীলের দ্বারাই চিত্তের শুন্দি ঘটা সম্ভব।

রবীন্দ্রনাথ ঠাকুর দুঃখ মুক্তি প্রসঙ্গে একটি প্রশ্ন তুলেছেন যে, এমন অনেকেই আছেন যাদের কেবল দুঃখের মুক্তি কাম্য নয়, অনেকসময় দেখা যায় কিছু সাধারণ মানুষ অনেকে দুঃখকে ইচ্ছা করে নিজের করতে চাইছে। উদাহরণ দিতে গিয়ে রবীন্দ্রনাথ ঠাকুর শান্তিনিকেতন-এর 'ভূমা' সম্পর্কে আলোচনা প্রসঙ্গে বলেছেন- "আল্পস্ পর্বতের দুর্গম শিখরের উপর একবার কেবল পদার্পণ করে আসবার জন্যে প্রাণপণ করা তার পক্ষে সম্পূর্ণ অনাবশ্যক, কিন্তু বিনা কারণে মানুষ সেই দুঃখ স্বীকার করতে প্রস্তুত হয়। এমন দৃষ্টান্ত তের আছে। তার কারণ কী? তার কারণ এই যে, দুঃখের সম্বন্ধে মানুষের একটা স্পর্ধা আছে। 'আমি দুঃখ সহিতে পারি, আমার মধ্যে সেই শক্তি আছে'- এই কথা মানুষ নিজেকে এবং অন্যকে জানাতে চায়।"<sup>৩</sup>

এই ক্ষেত্রগুলিতে যদি তাদের দুঃখ নিবৃত্তির কথা বলা হয় তবে তারা বলতেই পারে যে সেটা তাদের প্রয়োজন নেই। আসলে রবীন্দ্রনাথ ঠাকুরের মতে, মানুষ সকলের থেকে যেকোনো প্রকারে বড়ো হতে চায়। যে প্রচুর অর্থের অধিকারী তারও রাতে ঘুম নেই, বিশ্রাম নেই, খাওয়ার সুখ নেই; লাভ-ক্ষতির হিসাবের চিন্তায় সে আচ্ছন্ন। সেই ব্যাক্তিরই বা চিন্তা কেন? দুঃখই বা কেন? গুরুদেব কিন্তু নিজেই এই প্রশ্নের উত্তর দিয়েছেন বুদ্ধদেবকে অনুসরণ করে। তাঁর মতে আমাদের বুদ্ধদেবের বাণীকে কেবল দুঃখ-নিবৃত্তির উপায় হিসাবে প্রচলন করলেই হবে না। তার চেয়েও বড়ো কিছুর কথা ভাবতে হবে। মানুষ বুদ্ধদেবের দর্শনে আকৃষ্ট তার কারণ হয়তো তাঁর বাণীর মূল আকর্ষণ হল নিজেকে বড়ো করে পাওয়ার বা দেখার আকর্ষণ। তাঁর দর্শনে দুঃখকে স্বীকার করেই তাকে অতিক্রম করার কথা বলা হয়েছে; যার দ্বারা মানুষ খুব বড়ো করে ত্যাগ করতে পারে, নিজেকে সবার থেকে বড়ো করার লোভই হয়তো তাকে প্রথমে আকৃষ্ট করে। যার ফলে মানুষ তার আসল ক্ষমতা বা শক্তি সম্পর্কে সচেতন হয়।

এইক্ষেত্রে গুরুদেব বৌদ্ধদর্শনকে একটি নতুন প্রেক্ষিত থেকে ব্যাখ্যা করেছেন। বৌদ্ধদর্শনে আমরা দুঃখকে পরিহার করতে চাই, কিন্তু রবীন্দ্রনাথের দৃষ্টিতে দুঃখকে মানুষের আলিঙ্গন করা উচিত, তার নিজের শক্তি পরীক্ষা করার জন্য। বৌদ্ধদর্শনের এই প্রকার ব্যাখ্যা আমরা আর কোথাও পাই না। এইখানেই রবীন্দ্রদর্শনের অভিনবত্ব।

রবীন্দ্রনাথ ঠাকুরকে বুদ্ধদেবের শীল এবং ব্রহ্মবিহারের ধারনাটি প্রবল আকৃষ্ট করেছিল। পূর্বেই বলা হয়েছে যে, তিনি বুদ্ধদেব সম্পর্কে শান্তিনিকেতন-এ 'ব্রহ্মবিহার' নামে একটি অধ্যায় লিখেছেন এবং সেখানে বলেছেন- "ব্রহ্মবিহারের এই সাধনার পথে বুদ্ধদেব মানুষকে প্রবর্তিত করবার জন্যে বিশেষরূপে উপদেশ

দিয়েছেন। তিনি জানতেন কোনো পাবার ঘোগ্য জিনিস ফাঁকি দিয়ে পাওয়া যায় না, সেইজন্যে তিনি বেশি কথা না বলে একেবারে ভিত খোঁড়া থেকে কাজ আরম্ভ করে দিয়েছেন। তিনি বলেছেন শীল গ্রহণ করাই মুক্তিপথের পাথের গ্রহণ করা।”<sup>8</sup>

পূর্বেই আমরা দেখেছি যে, ব্রহ্মবিহারের একটি অঙ্গ হল মৈত্রীভাবনা। মনে রাগ, দ্বষ, ক্রোধ নিয়ে মৈত্রীভাবনা গ্রহণ সম্ভব নয়। তাই শীলের অভ্যাস করতে হবে। সকলের প্রতি মৈত্রীভাবনা উদয়ের ফলেই দুঃখের চিরমুক্তি ঘটবে। এই অবস্থায় পৌছালে কোন বন্ধন আর থাকবে না। এই অবস্থায় পৌছালে শরীর এবং মন দুঃঘরেই পরিবর্তন হবে, আমরা সম্পূর্ণরূপে বিশুদ্ধ হব। দূরে লজ্জাজনক কোন বিষয় ঘটতে দেখলে মন বুঝে ওঠার আগেই চোখ আপনা থেকেই নিচু হয়ে যাবে- এমনভাবে নিজেকে গড়তে হবে। আমাদের নিজস্ব ইচ্ছাকে সংযত করতে হবে; সকলের সাথে মিলিতভাবে যা শুভ তেমন কাজে প্রবৃত্ত হতে হবে। শুধু আমার বা আত্মজ্ঞান থাকলে কখনই দুঃখ মুক্তি সম্ভব না। বরং দুঃখ আমাকে পেয়ে বসবে। সর্বোপরি আমাদের ব্রহ্মবিহারের অভ্যাস করতে হবে। ব্রহ্মবিহার প্রসঙ্গে একটি উদ্ধৃতির উল্লেখ এখনে করা যেতে পারে, যা রবীন্দ্রনাথ মানুষের ধর্ম-তে করেছেন-“বুদ্ধদেব উপদেশ দিলেন, সমস্ত জগতের প্রতি বাধাশূন্য হিংসাশূন্য শক্রতাশূন্য মানসে অপরিমাণ মৈত্রী পোষণ করবে। দাঁড়াতে বসতে চলতে শুতে, ঘাবৎ নিদ্রিত না হবে, এই মৈত্রীশূন্তিতে অধিষ্ঠিত থাকবে- একেই বলে ব্রহ্মবিহার।”<sup>9</sup>

বোঝাই যাচ্ছে যে, আমাদের যেকোনভাবে সকলের সাথে সম্পর্কিত থাকতে হবে। ক্ষুদ্র আমিকে ছেড়ে বড়ো হতে হবে সকলের মাঝে, সকলের সাথে। সত্যের জ্ঞান অর্জনের দ্বারা নিজেদের আসল সন্তার প্রকাশ ঘটাতে হবে। আমরা যদি এক জায়গায় দাঁড়িয়ে থাকি আর বলি ‘কেন নির্দিষ্ট স্থানে পৌছাচ্ছি না ?’ –একথা বলা যেমন অসংগত। একইভাবে নিজেকে নিজের স্বার্থের গন্ডির মধ্যে আবদ্ধ রেখে, ‘কেন আমার দুঃখ মুক্তি ঘটছে না ?’ ‘কেন আমি ব্রহ্মকে উপলক্ষি করতে পারছি না ?’ -একথাগুলি বলাও তেমনি অসংগত। এসবের জন্য আমাদের বুদ্ধদেব উক্ত নির্দিষ্ট কর্ম করতে হবে। বুদ্ধদেব যে শূন্যতার কথা বলেছেন তার থেকে রবীন্দ্রনাথ ঠাকুর নেগেটিভ (negative) দিকগুলি বাদ দিয়ে পজিটিভ (positive) দিকগুলিকেই গ্রহণ করতে বলেছেন। প্রেম, ভালোবাসা, মৈত্রীভাবনাকে পজিটিভ (positive) বলেছেন। এই অর্থে ‘নির্বাণ লাভ’ –কে নেগেটিভ (negative) বলেছেন। উল্লেখ্য, পজিটিভ (positive) ও নেগেটিভ (negative) কথাগুলি তিনি নিজেই বৌদ্ধদর্শন প্রসঙ্গে ব্যবহার করেছেন।

বৌদ্ধদর্শনের প্রভাব রবীন্দ্রদর্শনে থাকলেও, রবীন্দ্রনাথ অনেক ক্ষেত্রে পৃথক ভাবনা পোষণ করতেন। প্রথমত, পঞ্চ-ইন্দ্রিয়ের দ্বারা গৃহিত যা কিছু তাকে রবীন্দ্রনাথ ঠাকুরের দর্শনে দুঃখ বলে অভিহিত করা যাবে না। একইরকমভাবে, জন্মকেও দুঃখ বলে চিহ্নিত করা যাবে না। জগৎ ও জীবনের প্রতি মুহূর্তকে তিনি মন-প্রাণ দিয়ে উপলক্ষি করতে চেয়েছিলেন। পূর্বেই আলোচনা করা হয়েছে যে, দুঃখকে পরিহার করে সম্পূর্ণ হওয়া যায় না। তাই আনন্দ এবং দুঃখ উভয়কেই আমাদের গ্রহণ করতে হবে। তাই দুঃখগুলোকে বাদ দিয়ে নয় তাদের গ্রহণ করেই, তাদের সাথে সামঞ্জস্য রেখে চলার কথা রবীন্দ্রনাথ ঠাকুর বারবার বলেছেন। তাঁর এই মনভাবের প্রকাশ ঘটানোর জন্য শঙ্খ ঘোষ তাঁর যোগাযোগ উপন্যাসের একটি উদ্ধৃতির উল্লেখ করেছেন তাঁর হওয়ার দুঃখ গ্রহে। শঙ্খ ঘোষের ভাষায়-“যোগাযোগ উপন্যাসে বিপ্রদাস বলেছিল কুমুকে : ‘দুঃখ এড়াবার চেষ্টা করলে দুঃখ পেয়ে বসে। ওকে জোরের সঙ্গে মানতে হবে।’”<sup>10</sup>

আবার বৌদ্ধদর্শনে প্রিয়বিচ্ছেদের কথা বলা হলেও পূর্ণতার থেকে বিচ্ছেদের কথা বলা হয়নি। কেউ বলতে পারে যে, টৈক্ষিতিবস্তুর না পাওয়া পূর্ণতা অপ্রাপ্তির নামান্তর। কিন্তু বলে নেওয়া প্রয়োজন – এভাবে বৌদ্ধদর্শনে বিষয়টিকে বোঝা হয়নি। কিন্তু রবীন্দ্রনাথ ঠাকুর পূর্ণতা প্রাপ্তি এবং অপ্রাপ্তির দিকে বিশেষ গুরুত্ব দিয়েছিলেন।

বৌদ্ধদর্শনকে অনুসরণ করেই তাঁর লেখা নৃত্যনাট্য ‘চন্দ্রালিকা’, বিখ্যাত কবিতা- ‘অভিসার’, ‘পূজারিণী’। এছাড়াও ‘বুদ্ধজন্মোৎসব’ এবং ‘বুদ্ধদেবের প্রতি’ নামেও দুটি কবিতা রবীন্দ্রনাথ ঠাকুর লিখেছিলেন। ‘চন্দ্রালিকা’-র কাহিনীসূত্রের সন্ধান করতে গিয়ে আমরা রবীন্দ্র-রচনাবলী-র ষোড়শ খন্দে পাই- “‘চন্দ্রালিকা’র কাহিনীসূত্র হিসাবে ভূমিকায় রবীন্দ্রনাথ লিখেছিলেন : ‘রাজেন্দ্রলাল মিত্র কর্তৃক সম্পাদিত নেপালী বৌদ্ধ সাহিত্যে শর্দুলকর্ণবদানের যে সংক্ষিপ্ত বিবরণ দেওয়া হয়েছে তাই থেকে এই নাটিকার গল্পটি গৃহিত’।”<sup>11</sup>

এছাড়াও “কথা” কাব্যগ্রন্থের দুটি কবিতা ‘পূজারিণী’ ও ‘অভিসার’। প্রথমটিতে বৌদ্ধদর্শন প্রারম্ভের সমসাময়িক সময়ের সামাজিক অবস্থা সম্পর্কে আলোচনা করা হয়েছে এবং দ্বিতীয়টির আলোচ্য বিষয় হল বৌদ্ধদর্শনের নিয়ম-নীতিগুলি।

একদিকে সকল মানুষ এক, আবার একদিকে তারা ভিন্ন। যেখানে তারা ভিন্ন সেখানে তারা কেবল নিজের খুশি এবং দুঃখে আবদ্ধ, সেখানে সে পৃথক মানুষ, একা। এই মানুষ হল স্বার্থপর। কবির মতে একজন মানুষ তার প্রকৃত ‘আমি’ -কে জানতে যদি ভূল করে তবে সত্যকে জানতেও সে অক্ষম। প্রকৃত ‘আমি’ একাকিন্তে নেই, আছে সকলের সাথে একত্রিতভাবে। রবীন্দ্রনাথে সামঞ্জস্যই হল সত্য। সকলের সাথে একত্রিত হয়ে, ভেদ দূর করেই, দুঃখ-যন্ত্রনাকে গ্রহণ করেই মানুষ পূর্ণ। এইরূপে, সে নিজের ছোট ছোট চাহিদাগুলোকে বিসর্জন দিতে ভয় পায় না। এই সত্যকে বোঝা, জানা এবং উপলব্ধি করা ভীষণ জরুরী। তবেই মানুষের পূর্ণতা, সার্থকতা।

## তথ্যসূচি

১. চৌধুরী, ডঃ সুকোমল (সম্পা.), গৌতম বুদ্ধের ধর্ম ও দর্শন, মহাবোধি বুক এজেন্সী, কলকাতা, ১৯৯৭, পৃ- ২৫১।
২. রবীন্দ্রনাথ ঠাকুর, বুদ্ধদেব, বিশ্বভারতী গ্রন্থনিবিভাগ, কলকাতা, ১৩৬৩, পৃ- ৫।
৩. রবীন্দ্রনাথ ঠাকুর, শান্তিনিকেতন, প্রথম খণ্ড, বিশ্বভারতী গ্রন্থনিবিভাগ, কলকাতা, ১৩৫৬, পৃ- ১৮৪।
৪. রবীন্দ্রনাথ ঠাকুর, শান্তিনিকেতন, প্রথম খণ্ড, বিশ্বভারতী গ্রন্থনিবিভাগ, কলকাতা, ১৩৫৬, পৃ- ১৭৪।
৫. রবীন্দ্রনাথ ঠাকুর, মানুষের ধর্ম, বিশ্বভারতী গ্রন্থনিবিভাগ, কলকাতা, ১৯৩৩, পৃ- ৭০।
৬. শঙ্খ ঘোষ, হওয়ার দুঃখ, অনুষ্টুপ, কলকাতা, ২০১৪, পৃ- ৪।
৭. শঙ্খ ঘোষ ও অনান্য (সম্পা.), রবীন্দ্র-রচনাবলী, শোড়শ খণ্ড, শিক্ষাসচিব, পশ্চিমবঙ্গ সরকার, কলকাতা, ২০০১, পৃ- ৭১।

## গ্রন্থপঞ্জী

- আচার্য, অনিল, সমীর সেনগুপ্ত (সম্পা.), অনুষ্টুপের রবীন্দ্রনাথ: দ্বিতীয় খণ্ড, কলকাতা: অনুষ্টুপ, ২০১২, মুদ্রণ।
- ঘোষ, শঙ্খ ও অনান্য (সম্পা.), রবীন্দ্র-রচনাবলী, ঘোড়শ খণ্ড, কলকাতা: পশ্চিমবঙ্গ সরকার, ২০০১, মুদ্রণ।
- ঘোষ, শঙ্খ, হওয়ার দুঃখ: কলকাতা: অনুষ্টুপ, ২০১৪, মুদ্রণ।
- চৌধুরী, ডঃ সুকোমল (সম্পা.), গৌতম বুদ্ধের ধর্ম ও দর্শন, মহাবোধি বুক এজেন্সী, কলকাতা, ১৯৯৭, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, জীবনস্মৃতি, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৩১৯ বঙ্গাব্দ, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, বুদ্ধদেব, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৩৬৩ বঙ্গাব্দ, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, শান্তিনিকেতন, প্রথম খণ্ড, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৩৫৬ বঙ্গাব্দ, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, শান্তিনিকেতন, দ্বিতীয় খণ্ড, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৯৬৪, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, রবীন্দ্র-রচনাবলী, সপ্তম খণ্ড, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৩৯৫ বঙ্গাব্দ, মুদ্রণ।
- ঠাকুর, রবীন্দ্রনাথ, রবীন্দ্র-রচনাবলী, ত্রয়োদশ খণ্ড, কলকাতা: বিশ্বভারতী গ্রন্থনিবিভাগ, ১৩৯৮ বঙ্গাব্দ, মুদ্রণ।
- দেবেনাথ, ধীরেন্দ্র, রবীন্দ্রনাথের দৃষ্টিতে মৃত্যু, কলিকাতা: রবীন্দ্রভারতী বিশ্ববিদ্যালয়, ১৯৬৬, মুদ্রণ।
- বন্দ্যোপাধ্যায়, হিরণ্য, রবীন্দ্র-দর্শন, কলকাতা: রবীন্দ্রভারতী বিশ্ববিদ্যালয়, ১৩৮৫ বঙ্গাব্দ, মুদ্রণ।
- মানা, গুণময়, রবীন্দ্ররচনার দর্শনভূমি, কলকাতা: প্যাপিরাস, ১৯৯৩, মুদ্রণ।
- রায়, কমলিকা, রবীন্দ্রনাথের সাধনা বক্তৃতামালা: একটি দার্শনিক বীক্ষা, কলকাতা: কারিগর, ২০১২, মুদ্রণ।
- Tagore, Rabindranath, *Sādhanā : The Realisation of Life*. New Delhi: Macmillan India Limited, 2000, Print.
- Tagore, Rabindranath, *The Religion of Man*. New Delhi: Rupa Publications India Pvt. Ltd., 2005, Print.

সংস্কৃত সারস্বত সাধনায় যতীন্দ্রবিমল চৌধুরীর অবদান

**শান্তনু দাস**  
**SACT, নগর কলেজ**  
[\*\*shantanudas497@gmail.com\*\*](mailto:shantanudas497@gmail.com)

### [সংক্ষিপ্তসার]

সংস্কৃত দৃশ্যকাব্যের অপর নাম রূপক। দশবিধি রূপকের মধ্যে নাটকের সংখ্যাই বেশি। পণ্ডিতদের মতে ভবভূতির পরবর্তী যুগে ভারতীয় নাট্যপ্রতিভাব গৌরব ধীরে ধীরে ক্ষীণ হতে থাকে এবং এই সময়ে যে সকল দৃশ্যকাব্য রচিত হয়েছিল সেগুলি নাটক হিসেবে নগণ্য, কোনো কোনোটি আবার পূর্বসূরির অনুকরণ মাত্র। কিন্তু আধুনিক যুগে যেসকল সংস্কৃত নাটক রচিত হয়েছে ও হচ্ছে সেগুলি নাট্যপ্রতিভাব স্বাক্ষর বহন করে। প্রাচীন নাট্যকারদের যোগ্য উত্তরসূরি হিসেবেই আধুনিক নাট্যকারেরা নাটক রচনা করে চলেছেন। প্রাচীন নাট্যকারদের যোগ্য উত্তরাধিকারী বিংশ শতকের নাট্যকার যতীন্দ্রবিমল চৌধুরী সংস্কৃত নাট্যসাহিত্যকে সমৃদ্ধ করেছেন। সংস্কৃত সারস্বত সাধনায় তাঁর অবদান সম্পর্কে আলোচনার উদ্দেশ্যেই এই প্রবন্ধের যাত্রা।

**সূচক শব্দ – নাটক, নাট্যপ্রতিভা, গৌরব, প্রাচীন নাট্যকার, উত্তরসূরি, সারস্বত সাধনা।**

শ্রব্য ও দৃশ্য ভেদে কবিকর্মের দুটি বিভাগকে সকল সাহিত্যসমালোচকগণ স্বীকার করেছেন – “দৃশ্যশ্রবত্বভেদেন পুনঃ কাব্যং দ্বিধা মতম্”।<sup>1</sup> এদের মধ্যে শ্রব্যকাব্য অপেক্ষা দৃশ্যকাব্যের শ্রেষ্ঠত্ব সর্বজন স্বীকৃত। আলংকারিকেরা যে রসোপলক্ষ্মীকে কবিকর্মের পরম ও চরম সার্থকতা রূপে চিহ্নিত করেছেন, দৃশ্যকাব্যে সেই রসাস্বাদন সহজে ও অধিক মাত্রায় সম্পাদিত হয়ে থাকে। এমনকি শ্রব্যকাব্য সমূহের রসোপলক্ষ্মী সহস্রদের মনে বৃত্তান্তের নাট্যায়মানতার উপর অনেকাংশে নির্ভরশীল। তাই সংস্কৃত আলংকারিক, কবি ও নাট্যকার – সকলেই দৃশ্যকাব্যের গুণকীর্তন করেছেন। দৃশ্যকাব্য মূলতঃ দুই প্রকার – রূপক ও উপরূপক। ভরত প্রভৃতি নাট্যতত্ত্ব সমীক্ষকগণ রূপকের দশটি ভেদ স্বীকার করেছেন। এগুলি হল – নাটক, প্রকরণ, ভাণ, ব্যায়োগ, সমাবকার, ডিম, ঈহামৃগ, অংক, বীথি ও প্রহসন। এদের মধ্যে নাটক হল প্রথম এবং প্রধান রূপক। আচার্য ভরতের মতে নানা ভাব, নানা অবস্থা ও নানা রসযুক্ত লোকবৃত্তান্তের অনুকরণই নাটক।<sup>2</sup> প্রাচীন যুগের ন্যায় আধুনিক যুগেও নাটক রচনার ধারা অব্যাহত রয়েছে। বঙ্গপ্রদেশের স্বনামধন্য আধুনিক সংস্কৃত নাট্যকারদের মধ্যে অন্যতম হলেন যতীন্দ্রবিমল চৌধুরী।

### যতীন্দ্র বিমল চৌধুরীর পরিচয়

যতীন্দ্র বিমল চৌধুরী ১৯০৯ খ্রিস্টাব্দের ২৩ জানুয়ারী বাংলাদেশের কর্ণফুলি নদী তীরস্থ চট্টগ্রামের বুয়ালখালী জেলার অন্তর্গত কুধুরখিল গ্রামে জন্মগ্রহণ করেছিলেন। তাঁর পিতা ছিলেন রসিকচন্দ্র চৌধুরী এবং মাতা ছিলেন নয়নতারা দেবী। তাঁর প্রাথমিক শিক্ষা গ্রামে নিজের পিতার বিদ্যালয়ে সম্পন্ন হয়েছিল। শুরু থেকেই তিনি পিতার প্রেরণায় সংস্কৃত বিষয়ে রচিত্বাল ছিলেন। ১৯২৫ খ্রিস্টাব্দে তিনি প্রথম শ্রেণীতে ম্যাট্রিক পাশ করে প্রেসিডেন্সী কলেজে ভর্তি হন। সেখানে তিনি সাতকড়ি মুখোপাধ্যায়ের কাছ থেকে বিশেষভাবে শিক্ষা লাভ করেন এবং ১৯২৯ খ্রিস্টাব্দে বি. এ. অনার্স পরীক্ষায় উত্তীর্ণ হন। ঐ বছর-ই তিনি লগুন বিশ্ববিদ্যালয়ে পি. এইচ. ডি ডিগ্রীর জন্য ভর্তি হন এবং ১৯৩৪ খ্রিস্টাব্দে ‘Women in Vedic Ritual’ বিষয়ে পি. এইচ. ডি ডিগ্রী লাভ করেন। এই সময়ের মধ্যে তিনি ইন্ডিয়া অফিস লাইব্রেরীর এবং লগুন বিশ্ববিদ্যালয়ের বিভিন্ন পদে কার্যরত ছিলেন। ১৯৩৯ খ্রিস্টাব্দে দর্শন বিষয়ে ডি. ফিল ডিগ্রী প্রাপ্ত রমা চৌধুরীর সঙ্গে যতীন্দ্রমহোদয়ের লগুনে বিবাহ হয়। ভারতে ফিরে এসে ডঃ যতীন্দ্র বিমল চৌধুরী পশ্চিমবঙ্গের সংস্কৃত শিক্ষা সমিতির সচিব, বঙ্গীয় সংস্কৃত শিক্ষা পরিষদের সচিব, সংস্কৃত কলেজে প্রধান আচার্য, প্রেসিডেন্সী কলেজে সংস্কৃত বিভাগের অধ্যাপক ও বিভাগাধ্যক্ষ তথা কোলকাতা বিশ্ববিদ্যালয়ে সংস্কৃতব্যাখ্যাতা ইত্যাদি বিভিন্ন পদে কার্যরত ছিলেন। তিনি ১৯৪৩ খ্রিস্টাব্দে প্রাচ্যবাণী নামে এক সংস্থা স্থাপন করেছিলেন যার ইংরেজি নাম ছিল ‘Institute of Oriental Learning’ এই সংস্থা থেকে ইংরেজি ভাষায় ‘প্রাচ্যবাণী’ নামে ব্রেমাসিক গবেষণা পত্রিকা প্রকাশিত হত, যার সম্পাদক ছিলেন চৌধুরী দম্পত্তি। এছাড়াও এখানে সংস্কৃত গ্রন্থের অনুবাদ, বিভিন্ন ভাষায় ভারতীয় পুরাতাত্ত্বিক অনুসন্ধান বিষয়ক লেখা এবং সংস্কৃত ভাষায় রচিত মৌলিক কৃতিসমূহের অনুবাদ প্রকাশিত হত। প্রাচ্যবাণীতে গবেষণার বৈজ্ঞানিক পদ্ধতির শিক্ষা গবেষকদের এবং সংস্কৃত পণ্ডিতদের দেওয়া হত। এছাড়াও এই সংস্থার অপর একটি কাজ ছিল বিশ্বসংস্কৃতি ও সভ্যতার তুলনাত্মক অধ্যয়ন। বিশ্ব সাংস্কৃতিক সৌমনস্য উৎপন্ন করা, সংস্কৃতের প্রচার করা, গ্রন্থালয় ও হস্তলিখিত গ্রন্থের সংগ্রহালয় তৈরী করা প্রভৃতি কাজ প্রাচ্যবাণী সংস্থার উদ্দেশ্য ছিল। সেই উদ্দেশ্যে প্রাচ্যবাণীর অধ্যাপন বিভাগ বেদ, দর্শন, কাব্য, তথা সাহিত্যশাস্ত্র, স্মৃতিতন্ত্র বিষয়ক পাঠদান করা হত, যেখানে যতীন্দ্রমহোদয় দুটি বিভাগে অধ্যাপনা করতেন। ১৯৬৪ খ্রিস্টাব্দে সংস্কৃতের এই মহান সাধক হৃদ্যন্ত্র অবরুদ্ধ হয়ে ইহলোক ত্যাগ করে পরলোকে গমন করেন।

## ঘৰীন্দ্ৰ বিমল চৌধুৱীৰ সাহিত্যকৃতি

নাট্যকার ডঃ ঘৰীন্দ্ৰ বিমল চৌধুৱীৰ রচনাগুলিকে চাৰটিভাগে ভাগ কৰা যেতে পাৰে- সূজনাত্মক কাব্য, গবেষণামূলক-প্ৰবন্ধ, সম্পাদিত গ্ৰন্থ ও অনুবাদ। তিনি সংস্কৃত ও পালিভাষায় ২৭টিৰও বেশী নাটক রচনা কৰেন। তদতিৰিক্ত তিনি শক্তিসাধন, মাতৃলীলা-তত্ত্ব(গীত-সংগ্ৰহ), চম্পুকাব্য বিবেকানন্দচৰিত ইত্যাদি কাব্য রচনা কৰেন। তাঁৰ গবেষণামূলক গ্ৰন্থগুলি হল - *Contribution of Women to Sanskrit Literature*; (প্ৰকাশকাল ১৯৩৯), *Muslim Patronage to Sanskrit Learning* (প্ৰকাশকাল ১৯৪২), *The Contribution of Bengal to Sanskrit Literature* (প্ৰকাশকাল ১৯৪২), *Position of Women in Vedic Ritual* (প্ৰকাশকাল ১৯৪৫), *বঙ্গীয়দৃতকাব্যস্যেতিহাসঃ* (প্ৰকাশকাল ১৯৫৩) ইত্যাদি। তিনি অনেকগুলি সংস্কৃত গ্ৰন্থ সম্পাদনা কৰেছিলেন। যথা- বামনভট্টের হংসদৃত (প্ৰকাশকাল ১৯৪১), হৱিভাস্তৱের পদাম্বৃতৱিজ্ঞলী (প্ৰকাশকাল ১৯৪১), গদাধৰ ভট্টের রসিকজীবন (প্ৰকাশকাল ১৯৪৪), বেণিদত্তের পদ্যবেণী (প্ৰকাশকাল ১৯৪৪), রাঘব বাচস্পতি ভট্টাচাৰ্যেৰ ভূপতিশতক (প্ৰকাশকাল ১৯৪৬), লক্ষ্মীপতিৰ আবদুল্লাচৰিত (প্ৰকাশকাল ১৯৪৭), ভোলানাথেৰ পাহ্লদৃত(প্ৰকাশকাল ১৯৪৯) প্ৰভৃতি। ঘৰীন্দ্ৰমহোদয় শেক্সপীয়ৱের 'Merchant of Venice' নাটক অবলম্বনে ভেনিসবণ্ডি এবং 'Othello' অবলম্বনে ওথেলো নাটক রচনা কৰেন। মহাকবি কালিদাসেৰ রঘুবৎশ মহাকাব্য অবলম্বনে রচিত তাঁৰ অন্যতম একটি কাব্য হল স্বপ্নৱঘূৰণশ এছাড়াও বাংলা ভাষায় তিনি কতকগুলি গ্ৰন্থ রচনা কৰেন। সেগুলি হল - পাঞ্চিতঙ্গুৰচন্দ্ৰবিদ্যাসাগৰ, গৌড়ীয়বৈষ্ণবেৰ সংস্কৃতসাহিত্যে দান, প্ৰবন্ধাবলী(আটটি ভাগে), রুদ্ধ-ঘোধৰা, জননী-ঘোধৰা প্ৰভৃতি।

ঘৰীন্দ্ৰ বিমল চৌধুৱী নাটক রচনায় ছিলেন সিদ্ধহস্ত। তাঁৰ রচনাসমূহেৰ মধ্যে নাটকেৰ সংখ্যাই অধিক। তাঁৰ নাটকে গৌড়ীয় বৈষ্ণব-ভাবধাৰা, সাধু-সন্ত, স্বদেশপ্ৰেমী ব্যক্তিদেৱ জীবনচৰিত, শ্ৰীৱামকৃষ্ণ-বিবেকানন্দ-ভাবধাৰা ইত্যাদি বিষয় স্থান পেয়েছে। তাঁৰ নাটকগুলিকে বিষয়বস্তুৰ দিক থেকে চাৰটি গোত্ৰে বিভক্ত কৰা যেতে পাৰে। এগুলি হল-

১। মাতৃভূমি-বৰ্ণনাত্মক - মহিময়ভাৱত, মিলনতীৰ্থ

২। লোকনায়ক-গাথাত্মক - ভাৱতহস্যারবিন্দ, ভাৱতভাস, ভাৱতবিবেক, বিশ্ববিবেক, ভাৱতৱাজেন্দ্ৰ, সুভা৷-সুভা৷, দেশবন্ধুদেশপ্ৰিয়, রক্ষক-শ্ৰীগোৱৰক্ষক, বিমলযতীন্দ্ৰ, ভাৱতজনকা

৩। নারী-গৌৱাভাত্মক- নিষ্ঠিঞ্চনযশোধৰ, শক্তিসারদ, মুক্তিসারদ, অমৰমীৱ, ভাৱত-লক্ষ্মীনাটকা

৪। বৈষ্ণবভক্ত-চৱিতাভাত্মক- মহাপ্ৰভু-হৱিদাস, দীনদাস-ৱঘুনাথ, ভক্তিবিষ্ণুপ্ৰিয়, শ্ৰীতিবিষ্ণুপ্ৰিয়, আনন্দৱাধাৰা নাট্যকাৰ ঘৰীন্দ্ৰ বিমল চৌধুৱীৰ রচিত নাটকগুলিৰ সংক্ষিপ্ত পৰিচয় দেওয়া হল-

### মহিময়ভাৱত

১৯৫৮ খ্ৰিস্টাব্দে মহিময়ভাৱত নাটকটি রচিত হয়। পঞ্চাঙ্গবিশিষ্ট এই নাটকটি বৈদিকযুগ, পৌৱাণিকযুগ, ইসলামিকযুগ ও আধুনিকযুগে নদীমাত্ৰক ভাৱতবৰ্ষেৰ নদীপূজনেৰ বিষয়কে অবলম্বন কৰে রচিত হয়েছে। নাটকটি ১৯৬১ খ্ৰিস্টাব্দে প্ৰাচ্যবাণী থেকে প্ৰকাশিত হয়েছে।

### মিলনতীৰ্থ

বৈচিত্ৰেয়ে মাঝে ভাৱত ও ভাৱতীয় সংস্কৃতিৰ ঐক্যকে প্ৰস্ফুটিত কৰাৰ উদ্দেশ্যে দশাটি অংকে মিলনতীৰ্থ নাটকটি রচিত হয়েছে। ভাৱতভূমিতে বিবিধ সংস্কৃতিৰ মিলন ঘটেছে। তাই এই দেশ ভাৱত-তীৰ্থ হয়ে উঠেছে। এই নাটকে ভাৱতেৰ কৃষিকাৰ্য ও সেচব্যবস্থা বিশেষভাৱে আলোচিত হয়েছে। নাটকটিৰ প্ৰকাশকাল ১৯৬২ খ্ৰিস্টাব্দ।

### ভাৱতহস্যারবিন্দ

১৯৫৯ খ্ৰিস্টাব্দে ঝাষি অৱিনেদেৱ জীবনচৰিত অবলম্বনে পঞ্চাঙ্গবিশিষ্ট ভাৱতহস্যারবিন্দ নাটকটি রচিত হয়। নাটকটিতে অৱিনেদেৱ জীবনাদৰ্শ ও দেশাত্মবোধ প্ৰতিফলিত হয়েছে। মাতৃভূমিৰ স্বাধীনতা অৰ্জনেৰ জন্য অৱিনেদেৱ প্ৰচেষ্টা নাটকটিতে সুচাৰুভাৱে প্ৰদৰ্শিত হয়েছে। এই নাটকে নাট্যনিয়ম লঙ্ঘন কৰে মুষ্টিযুদ্ধ দেখানো হয়েছে। ১৯৬০ খ্ৰিস্টাব্দে ভাৱতহস্যারবিন্দ নাটকটি প্ৰকাশিত হয়।

### ভাৱতভাস

কবিগুৰু রবীন্দ্ৰনাথ ঠাকুৱেৱ জীবনচৰিতকে উপজীব্য কৰে ভাৱতভাস নাটকটি রচিত। ১৯৬১ খ্ৰিস্টাব্দে তিনটি খণ্ডে নাটকটি প্ৰকাশিত হয়েছে।

(ক) ভাস্তৰোদয় - রবীন্দ্ৰনাথ ঠাকুৱেৱ জীবনেৰ পূৰ্বভাগকে অবলম্বন কৰে পনেৱোটি অংকে ভাস্তৰোদয় নাটকটি রচিত হয়েছে। এই নাটকটি মহানাটক শ্ৰেণীৰ অন্তৰ্গত।

(খ) ভাৱতভাস্তৰ - রবীন্দ্ৰনাথ ঠাকুৱেৱ জীবনেৰ মধ্যভাগ অবলম্বনে ভাৱতভাস্তৰ নাটকটি রচিত হয়েছে।

(গ) ভুবনভাস্তৰ - রবীন্দ্ৰনাথ ঠাকুৱেৱ জীবনেৰ অন্তিমভাগ অবলম্বনে ভুবনভাস্তৰ নাটকটি রচিত হয়েছে।

### ভাৱতবিবেক

যুগপুরূষ স্বামী বিবেকানন্দের জীবনের পূর্বভাগ (আমেরিকা গমনের আগে পর্যন্ত) অবলম্বনে ভারতবিবেক নাটকটি রচিত। ১৯৬৩ খ্রিস্টাব্দে বিবেকানন্দের জন্মশতবার্ষিকীতে নাটকটি প্রকাশিত হয়। নাটকটিতে মোট বারোটি দৃশ্য রয়েছে। ভারতবিবেকের নাটকটির প্রতিটি দৃশ্যের বিষয়বস্তু এই অধ্যায়ে থথাস্থানে আলোচনা করা হবে।

### **বিশ্ববিবেক**

স্বামী বিবেকানন্দের জীবনের উত্তরভাগ অবলম্বনে অষ্টাঙ্কবিশিষ্ট বিশ্ববিবেক নাটকটি রচিত হয়েছে। পাশ্চাত্যদেশে বিবেকানন্দের সনাতন-ধর্মের মহিমা প্রচার, বিশ্বধর্ম তথা মানবধর্ম প্রচার প্রভৃতি বিষয় দেখানো হয়েছে। নাটকটির প্রকাশকাল ১৯৬৩ খ্রিস্টাব্দ।

### **ভারতরাজেন্দ্র**

স্বাধীন ভারতবর্ষের প্রথম রাষ্ট্রপতি ডঃ রাজেন্দ্রপ্রসাদ চক্রবর্তী মহাশয়ের জীবনচরিত অবলম্বনে নাটকটি রচিত। ভারতরাজেন্দ্র নাটকে রাজেন্দ্রপ্রসাদের ছাত্রজীবন থেকে শুরু করে রাজনীতিতে সক্রিয় অংশগ্রহণ ইত্যাদি বিষয় বর্ণিত হয়েছে। নাটকটির প্রকাশকাল ১৯৬১ খ্রিস্টাব্দ।

### **সুভাষ-সুভাষ**

বীরনায়ক সুভাষচন্দ্রের জীবন অবলম্বনে ষষ্ঠাঙ্কবিশিষ্ট সুভাষ-সুভাষ নাটকটি রচিত। এই নাটকটিতে সুভাষচন্দ্রের শিক্ষাজীবন সমাপনান্তের পর বিদেশঘাত্রা পর্যন্ত ঘটনা বর্ণিত হয়েছে। নাটকটির প্রকাশকাল ১৯৬৩ খ্রিস্টাব্দ।

### **দেশবন্ধুদেশপ্রিয়**

বঙ্গের দুই স্বনামধন্য দেশপ্রেমীক চিত্ররঞ্জন দাস ও যতীন্দ্রমোহন সেনগুপ্তের কাহিনীকে উপজীব্য করে নয়টি অংকে দেশবন্ধুদেশপ্রিয় নাটকটি রচিত। অসম-বাংলা রেল ধর্মঘট, পিকেটিংয়ের অপরাধে দেশবন্ধু চিত্ররঞ্জন দাসের স্ত্রী বাসন্তীদেবীর কারাবাস, দার্জিলিংয়ে মহাত্মাগান্ধীর সঙ্গে চিত্ররঞ্জনের শেষ দেখা ইত্যাদি ঘটনাগুলি নাট্যকার নাটকোচিত চমৎকারিত্বে বিন্যস্ত করেছেন। নাটকটির প্রকাশকাল ১৯৭২ খ্রিস্টাব্দ।

### **রক্ষক-শ্রীগোরক্ষ**

সপ্তাঙ্কবিশিষ্ট রক্ষক-শ্রীগোরক্ষ নাটকটি যোগী মহাত্মা শ্রীগোরক্ষনাথের জীবনচরিত অবলম্বনে নাটকটি রচিত। নাটকটির প্রকাশকাল ১৯৫৮ খ্রিস্টাব্দ।

### **বিমলঘোষীন্দ্র**

সপ্তদশাঙ্কবিশিষ্ট বিমলঘোষীন্দ্র নাটকটি রামানুচার্যের চরিতগাথাত্মক রচনা। ১৯৬১ খ্রিস্টাব্দে নাটকটির প্রথম অভিনয় হয়েছিল।

### **ভারতজনক**

দেশসেবক মহাত্মা গান্ধীর জীবনচরিত অবলম্বনে ভারতজনক নাটকটি রচিত। নাটকটির প্রকাশকাল ১৯৬১ খ্রিস্টাব্দ।

### **নিষ্ঠিঞ্চনযশোধর**

মহাত্মা গৌতমবুদ্ধের পত্নী যশোধরার মহিমালিনী গৌরবাত্মক কাহিনীকে অবলম্বন করে নিষ্ঠিঞ্চনযশোধর নাটকটি রচিত। নাটকটিতে সাতটি অংক রয়েছে। সিদ্ধার্থের রাজপ্রাসাদে অবস্থান থেকে শুরু করে তাঁর সম্যাসত্ত্ব গ্রহণ এবং যশোধরাকৃত্ক বৌদ্ধধর্ম গ্রহণে নারীগণকে উৎসাহ দান প্রভৃতি বিষয় নাটকটিতে বর্ণিত হয়েছে। ১৯৫৮ খ্রিস্টাব্দে নিষ্ঠিঞ্চনযশোধর নাটকটির প্রথম অভিনয় হয়েছিল।

### **শক্তিসারদ**

শ্রীরামকৃষ্ণের সহধমিনী মাতা সারদামণির জীবনের পূর্বভাগ অবলম্বনে শক্তিসারদ নাটকটি রচিত। নাটকটিতে পাঁচটি অংক রয়েছে। ১৯৬০ খ্রিস্টাব্দে শক্তিসারদ নাটকটি প্রকাশিত হয়।

### **মুক্তিসারদ**

মাতা সারদামণির জীবনের উত্তরভাগের আলেখ্য চিত্রিত হয়েছে মুক্তিসারদ নাটকে। নাটকটিতে বারোটি অংক রয়েছে। নাটকটির প্রকাশকাল ১৯৬০ খ্রিস্টাব্দ।

### **অমরমীর**

কৃষ্ণপ্রেমানুরাগিনী মীরা বাটীয়ের বিবাহেতের জীবন অবলম্বনে দ্বাদশাঙ্কবিশিষ্ট অমরমীর নাটকটি রচিত হয়েছে। মীরা বাটী ছিলেন রাজপুতনার রাঠোর বংশীয় কন্যা এবং মেবারের রাণা কুন্তের পত্নী। স্বামী এবং তৎসম্বন্ধীয় আত্মীয়দের আপত্তি সত্ত্বেও মীরা কৃষ্ণপ্রেমে মাতোয়ারা হয়ে সংসার ত্যাগ করে বৃন্দাবনে চলে যান। নাটকটির প্রকাশকাল ১৯৬২ খ্রিস্টাব্দ।

### **ভারতলক্ষ্মীনাটক**

ঝাঁসীর রাণী লক্ষ্মীবাটীয়ের সংগ্রামী জীবনের কাহিনী অবলম্বনে দশাঙ্কবিশিষ্ট ভারতলক্ষ্মী নাটকটি রচিত হয়েছে। ইংরেজ সরকারের বিরুদ্ধে লক্ষ্মীবাটী, নানাসাহেব, তাঁতিয়াটোপী প্রমুখ মহান দেশপ্রেমীদের

সংগ্রামকে নাট্যকার বীর ও করুণ রসে সিঞ্চ করে পরিবেশন করেছেন। ১৯৬৭ খ্রিস্টাব্দে ভারতলক্ষ্মী নাটকটি প্রকাশিত হয়েছে।

### **মহাপ্রভুহরিদাস**

শ্রীচৈতন্য মহাপ্রভুর মুসলমান ভক্ত যবন হরিদাসের বৈষ্ণবধর্মানুরাগের কাহিনীকে অবলম্বন করে সাতটি অংকে মহাপ্রভুহরিদাস নাটকটি রচিত হয়েছে। মুসলমান হওয়া সত্ত্বেও হরিদাসের মহাপ্রভুর প্রতি প্রবল অনুরাগ, চাঁদ কাজীর অকথ্য অত্যচার, মহাপ্রভুর চরণযুগল বক্ষে নিয়ে হরিদাসের মৃত্যু প্রভৃতি ঘটনা এই নাটকে চিত্রিত হয়েছে। ১৯৫৮ খ্রিস্টাব্দে মহাপ্রভুহরিদাস নাটকটি প্রকাশিত হয়।

### **দীনদাসরঘুনাথ**

ধনী পরিবারে জন্মগ্রহণ করা সত্ত্বেও রঘুনাথ দাস ছিলেন ত্যাগের প্রতিমূর্তি। বৃন্দাবনের শ্রেষ্ঠ ছয় গোসাই ছিলেন রূপ গোস্বামী, সনাতন গোস্বামী, জীব গোস্বামী, রঘুনাথ দাস ও গোপাল ভট্ট। এঁদের মধ্যে অন্যতম শ্রেষ্ঠ গোসাই রাধাভক্ত গৌড়ীয় বৈষ্ণব শ্রীরঘুনাথ দাসের জীবন অবলম্বনে বারোটি অংকে দীনদাসরঘুনাথ নাটকটি রচিত হয়েছে। ১৯৬২ খ্রিস্টাব্দে দীনদাসরঘুনাথ নাটকটি প্রকাশিত হয়।

### **ভক্তিবিষ্ণুপ্রিয় ও প্রীতিবিষ্ণুপ্রিয়**

চৈতন্য মহাপ্রভুর সহধর্মী শ্রীবিষ্ণুপ্রিয়ার মহনীয়তা ও বৈষ্ণবধর্মের মাহাত্ম্যকে অবলম্বন করে ভক্তিবিষ্ণুপ্রিয় ও প্রীতিবিষ্ণুপ্রিয় নাটক দুটি রচিত হয়েছে। বৈষ্ণবধর্মের প্রচার ও প্রসার, বিশ্বজনীন প্রেম, পারম্পারিক সম্প্রীতি প্রভৃতি দশাঙ্কবিশিষ্ট ভক্তিবিষ্ণুপ্রিয় নাটকে মূর্ত হয়ে উঠেছে। ১৯৬২ খ্রিস্টাব্দে ভক্তিবিষ্ণুপ্রিয় নাটকটি দিল্লী আকাশবাণী থেকে সম্প্রচারিত হয়। প্রীতিবিষ্ণুপ্রিয় নাটকটি একাদশাঙ্কবিশিষ্ট। এই নাটকটি ১৯৬১ খ্রিস্টাব্দে প্রকাশিত হয়।

### **আনন্দরাধ**

রাধা-কৃষ্ণের দিব্য লীলাকে অবলম্বন করে একাদশাঙ্কবিশিষ্ট আনন্দরাধ নাটকটি রচিত। নাটকের নায়ক শ্রীকৃষ্ণ ও নায়িকা শ্রীরাধিকা। শ্রীকৃষ্ণবিরহিনী রাধার বিরহবেদনা এই নাটকে পরিস্ফূট হয়েছে। ১৯৬২ খ্রিস্টাব্দে আনন্দরাধ নাটকটি প্রকাশিত হয়েছে। নাটকটির প্রকাশকাল ১৯৬২ খ্রিস্টাব্দ।

উপরি উক্ত নাটকগুলি ব্যতিরেকে যতীন্দ্র বিমল চৌধুরীর ধৃতিসীত নামক একটি অপ্রকাশিত নাটক রয়েছে। নাটকটিতে দেবী সীতার চরিত কথা বর্ণিত হয়েছে।

দশম শতাব্দীর পর সংস্কৃতসাহিত্যে উৎকৃষ্ট কোনো সাহিত্য রচিত হয়নি বলে অধিকাংশের অভিমত। সাধারণতঃ আলোচকদের ধারণা ভবভূতি পর্যন্তই সংস্কৃত-নাট্যসাহিত্যের স্বর্ণযুগ। কিন্তু মধ্যযুগেও এমন অনেক দৃশ্যকাব্য রচিত হয়েছে যা প্রাচীন নাট্যকারদের সমতুল্য না হলেও রূপক হিসেবে সেগুলি যথেষ্ট উৎকৃষ্টতার দাবী রাখে। পঞ্চদশ শতাব্দীর শেষভাগ পর্যন্ত মধ্যযুগের স্থিতিকাল। ষোড়শ শতাব্দীর শুরু থেকে আদ্যাবধি পর্যন্ত সময় হল সংস্কৃতসাহিত্যের আধুনিক যুগ। এই সময়ে সংস্কৃতসাহিত্যে বহু নাট্যকারের আবির্ভাব ঘটেছে, যাদের রচনাগুলি সংস্কৃত ভাষাকে সাধারণের ভাষা করে তুলেছে। আধুনিকযুগে সাধারণত সংস্কৃতভাষায় রচিত সাহিত্যগুলির মধ্যে দৃশ্যকাব্য তথা নাটকের সংখ্যাই বেশী। সুতরাং সংস্কৃত নাট্যসাহিত্যের পরম্পরা আদ্যাবধি প্রবাহমান রয়েছে। এই পরম্পরার যোগ্য উত্তরসূরি হলেন যতীন্দ্রবিমল চৌধুরী।

### **উল্লেখপঞ্জি**

- ১। সাহিত্যদর্পণ - ৬/১
- ২। নানাভাবোপসংপ্রাপ্ত নানাবস্থান্তরাত্মকম্।  
লোকবৃত্তানুকরণং নাট্যমেতন্ময়া কৃতম্।। - নাট্যশাস্ত্রম् - ১/১১১
- **নির্বাচিত গ্রন্থপঞ্জি**
- উপাধ্যায়, ডা. রামজী। আধুনিক সংস্কৃত নাটক (ভাগ- ১ ও ২)। বারাণসী: চৌখাস্বা বিদ্যাভবন। ২০১৪ (পুনর্মুদ্রিত সংস্করণ।)
- ঘোষাল, বনবিহারী। অর্বাচীন (আধুনিক) সংস্কৃত সাহিত্যের ইতিহাস: ১৮০১-২০১৯। ২০১৯।
- চট্টোপাধ্যায়, ঝৰ্তা। আধুনিক সংস্কৃত সাহিত্য (১৯১০-২০১০): ছোটগল্প ও নাটক। কোলকাতা: প্রোগ্রেসিভ পাবলিশার্স। ২০১২।
- ত্রিপাঠী, রাধাবল্লভ। সংস্কৃত সাহিত্য: বীসবী শতাব্দী দিল্লী: রাষ্ট্রীয় সংস্কৃত সংস্থান। ১৯৯৯।
- বন্দ্যোপাধ্যায়, ধীরেন্দ্রনাথ। সংস্কৃত সাহিত্যের ইতিহাস। কোলকাতা: পশ্চিমবঙ্গ রাজ্য পুস্তক পর্যদ। ২০১২ (দ্বিতীয় সংস্করণের পঞ্চম মুদ্রণ।)
- ভরত। নাট্যশাস্ত্রম্। সম্পা. সুরেশচন্দ্র বন্দ্যোপাধ্যায়। অনু. সুরেশচন্দ্র বন্দ্যোপাধ্যায় ও ছন্দা চক্রবর্তী। কোলকাতা: নবপত্র প্রকাশন। ১৯৮০ (প্রথম প্রকাশ।) ২০১৪ (চতুর্থ মুদ্রণ।)

- সাহিত্যদপ্তর। বিশ্বনাথকবিরাজ। সম্পা. বিমলাকান্ত মুখোপাধ্যায়। কোলকাতা: সংস্কৃত পুস্তক ভাণ্ডার। ২০১৩ (দ্বিতীয় সংস্করণ)।
- Chattopadhyay, Rita. *20<sup>th</sup> Century Sanskrit Literature: A glimpse into Tradition and Innovation.* Kolkata: Sanskrit Sahitya Parisad & Sanskrit Pustak Bhandar, Reprint 2009.
- Chattopadhyay, Rita. *Modern Sanskrit Dramas of Bengal [20<sup>th</sup> Century A.D].* Kolkata: Sanskrit Pustak Bhandar, 1992.

## মহাকবি কালিদাসের অভিজ্ঞানশকুন্তল নাটকে লিঙ্গ বৈষম্য

**স্মিথা চক্রবর্তী  
স্টেট এডেড কলেজ টিচার  
নগর কলেজ**

**ভূমিকাঃ** 'বাক্যং রসাত্মকং কাব্যম্' - অর্থাৎ রসযুক্ত বাক্যই হল কাব্য। এই কাব্যকে প্রধানত দুটি ভাগে ভাগ করা যায়। যথা - ১) দৃশ্যকাব্য ও ২) শ্রব্যকাব্য। এই দৃশ্যকাব্যের অন্তর্ভুক্ত হল নাটক। সংস্কৃত নাট্য সাহিত্যের শ্রেষ্ঠ কবি হলেন মহাকবি কালিদাস। কালিদাসের জন্মবৃত্তান্ত, তাঁর ব্যক্তিগত জীবন - সব কিছুই আমাদের কাছে অজ্ঞাত। কালিদাস বস্তুত পক্ষে কোনো খণ্ডদেশের কবি নন, তিনি সমগ্র ভারতবর্ষের কবি, তিনি চিরকালের কবি। শ্রীষ্টপূর্ব প্রথম শতক থেকে শুরু করে শ্রীষ্টাদ্ব ষষ্ঠ শতক পর্যন্ত— এই সময়কে কালিদাসের আবির্ভাবকাল বলে প্রতিপাদিত করার চেষ্টা করা হয়েছে। সংস্কৃত সাহিত্যের শ্রেষ্ঠ নাটকগুলির মধ্যে মহাকবি কালিদাসের অভিজ্ঞানশকুন্তলম্ নাটকটি সর্বোৎকৃষ্ট। মহাকবি কালিদাসের দার্শনিক ভাবনা, প্রকৃতিপ্রেম, সমাজচিত্র- ইত্যাদি বিষয় আমাদের মুন্ফ করে। কিন্তু কালিদাসের এই নাটকে অনভিপ্রেতভাবেই লিঙ্গ বৈষম্য পরিলক্ষিত হয়।

বর্তমানে সামাজিক সমস্যাগুলির অন্যতম হল লিঙ্গ বৈষম্য। এটি এমন এক সমস্যা যার কোনো স্পষ্ট রূপ নেই। আমাদের প্রত্যকটা পরিবারের আমরা এই লিঙ্গ বৈষম্যের স্বীকার। প্রাকৃতিক প্রয়োজনে পৃথিবীতে তৈরী হয়েছে নারী ও পুরুষ। কিন্তু, তাও এই একবিংশ শতাব্দীতেও নারীরা দ্বিতীয় লিঙ্গের তকমা বহন করেই চলেছে। বৈদিক যুগে নারীদের সমাজে স্থান মর্যাদার আসনে প্রতিষ্ঠিত ছিল। সেই যুগে শিক্ষা, যাগযজ্ঞ সবকিছুতেই পুরুষদের পাশাপাশি নারীদের সমান অধিকার ছিল। যুদ্ধ ক্ষেত্রেও যে নারীরা পুরুষদের সহযোগ্যা ছিল তার প্রমান বেদেই আছে। ঋগ্বেদে আমরা লোপামুদ্রা,অপালা,বিশ্ববারা প্রভৃতি বিদুরী নারীর নামোল্লেখ পাই। কিন্তু দুর্ভাগ্যক্রমে পরবর্তীকালে নারীদের মর্যাদাকে ধূলোয় নামিয়ে আনা হল। 'মনুসংহিতা'য় নারীদের সমস্ত অধিকার কেড়ে নেওয়ার কথা বলা হয়েছে। এখনও আমরা বলে চালি - এটা মেয়েদের কাজ, এটা ছেলেদের কাজ -এই রকমভাবে আমরা বৈষম্যের সৃষ্টি করি। বাচ্চা ছেলেদেরকে আমরা বন্দুক নিয়ে খেলতে দিই, কিন্তু বাচ্চা মেয়েদের হাতে পুতুল ধরিয়ে দেওয়া হয়। রান্না করাটা যেন মেয়েদেরই কাজ। মহিলারা বাড়িতে রান্না না করলে পরিবার চলবে না- মহিলা মানেই বিনা পারিশ্রমিকের শ্রমিক। তবে নারী-পুরুষ নির্বিশেষে আমরাই পারব গড়ে তুলতে বৈষম্যহীন সমাজ-

**'বিশ্বের যা কিছু মহান সৃষ্টি চিরকল্যানকর'**

**অর্ধেক তার করিয়াছে নারী,অর্ধেক তার নর।'**

- কাজী নজরুল ইসলাম

**মূলপ্রবন্ধঃ** মহাভারতের কাহিনী অবলম্বনে লেখা সপ্তাঙ্গ নাটক অভিজ্ঞানশকুন্তলম্ কালিদাসের এক অতুলনীয় সাহিত্যসৃষ্টি। এই নাটকের মূল বিষয় হল- মহৰ্ষি কথের আশ্রমে পালিতা কন্যা শকুন্তলার সঙ্গে পুরুষবৎশের রাজা দুষ্যন্তের প্রেম। এই নাটকটিতে দেখানো হয়েছে প্রথমে মহৰ্ষি কথের আশ্রমে দুষ্যন্তের সঙ্গে শকুন্তলার প্রথম দেখা, তারপরে তাদের মধ্যে প্রেম, তাদের একাত্মতা হওয়া, শকুন্তলার সন্তান সর্বদমনের জন্ম, পরিশেষে মারীচের আশ্রমে দুষ্যন্তের সঙ্গে শকুন্তলার মিলন। এই নাটকে শকুন্তলার জন্ম থেকেই আমরা দেখতে পাই শকুন্তলা কিভাবে উপেক্ষিতা হয়েছে। জন্মের পরেই তাঁর পিতা বিশ্বামিত্র তাঁকে অস্তীকার করেন। তারপরে তাঁর মাতা মেনকা তাঁকে মহৰ্ষি কথের আশ্রমে রেখে চলে যান। এই নাটকের প্রায় প্রত্যেকটা অক্ষেই দেখতে পাই নারীরা কিভাবে অবহেলিতা, উপেক্ষিতা হয়েছে। অভিজ্ঞানশকুন্তলম্ নাটকের প্রথম অক্ষের শুরুতেই নান্দী পাঠের পরেই সূত্রধার এবং নটীর কথোপকথনের মধ্যেই আমরা লিঙ্গ বৈষম্যের ছাপ সুস্পষ্ট দেখতে পাই। তখনকার দিনে মহিলারা যে শিক্ষার দিক থেকে যথেষ্ট পিছিয়ে তা আমরা সূত্রধার ও নটীর কথোপকথনে শুনলেই বুঝতে পারি। নটী ও সূত্রধার যখন কথা বলছিলেন তখন নটী কথা বলেছেন প্রকৃত ভাষায় কিন্তু সূত্রধার বলেছেন সংস্কৃত ভাষায়।

এই থেকে আমরা বুঝতেই পারছি তখন সমাজে শিক্ষার দিক থেকে নারীরা যথেষ্ট পিছিয়ে ছিল। উদাহরণস্বরূপ  
নটী ও সূত্রধারের কয়েকটি উক্তি উল্লেখ করা যেতে পারে -

সূত্রধার - (নেপথ্যাভিমুখবলোক্য) আর্ঘ্য, যদি নেপত্যবিধানমবসিতম্ ইতস্তাবদাগম্যতাম্ ।

নটী - অজ্ঞউত্ত, ইয়ন্সি ( আর্ষপুত্র, ইয়মস্মি )

সূত্রধার - আর্ঘ্য, অভিরূপভূয়িষ্ঠা পরিষদিয়ম্ । অদ্য খলু কালিদাস গ্রথিত বস্তনা অভিজ্ঞানশকুন্তল নামধেয়েন  
নবেন নাটকেনোপস্থাতব্যমস্মাভিঃ । তৎ প্রতিপাত্রমাধীয়তাঃ যত্নঃ ।

নটী - সুবিহিদ়গ্নওঅদা এ অজ্ঞস্স ন কিংপি পরিহাইস্সদি ।

অতঃপর, নাটকের চতুর্থ অঙ্কে কাশ্যপ শকুন্তলাকে পতিগৃহে প্রেরণের সময় আশীর্বাদ করেছেন -

“যাতেরিব শর্মিষ্ঠা ভত্তুর্বহ্মতা ভব।

সৃতং ত্বমপি সম্বাদং সেব পুরুমবাপ্নুহি ॥”

[অভি - 8/৭]

অর্থাৎ, বৎস, যাতির কাছে শর্মিষ্ঠার মতো তুমি ও পতির অত্যধিক আদরিনী হও। এবং শর্মিষ্ঠা যেমন  
পুরুকে পুত্ররূপে লাভ করেছিলেন, তুমি ও সেৱপ সম্বাটপুত্র লাভ কর।

এখানে কাশ্যপ শকুন্তলাকে পুত্রলাভের আশীর্বাদ করেছেন, কন্যালাভের নয়। তাই তাঁর এই আশীর্বাদ  
থেকে আমরা বুঝতেই পারছি তখন সমাজে পুত্ররাই কাঞ্চিত ছিল, আর নারীরা ছিল অবহেলিতা, উপেক্ষিতা।

আবার চতুর্থ অঙ্কে কাশ্যপ শার্জৰব কে শকুন্তলার সঙ্গে দিয়ে দুষ্যন্তের কাছে গিয়ে বলতে বলেছেন-

“সামান্যপ্রতিপত্তিপূর্বকমিযং দারেষু দৃশ্যা ত্বয়া

ভাগ্যযন্ত্রমতঃপরং ন খলু তদ্বাচ্যং বধূবন্ধুভিঃ ॥”

[অভি - 8/১৭]

অর্থাৎ অন্যান্য মহিষীগনের সঙ্গে সমান আদরে একেও দেখবেন। এর চেয়ে অধিক প্রাপ্তি ভাগ্যের উপর  
নির্ভরশীল। বধূর আত্মায়স্বজনদের তা কখনো বলা উচিত নয়।

কাশ্যপের এই উক্তির মাধ্যমেই বুঝতে পারি, তখন স্ত্রীদের স্বামীদের কাছে কত ছোটো হয়ে থাকতে হত।  
এবং এখানে আমরা পুরুষদের বহুবিবাহ প্রথার উল্লেখ পাই। পুরুষরা যেমনভাবে স্ত্রীদের রাখবে স্ত্রীদেরকেও  
তেমনভাবেই থাকতে হবে, এর অন্যথা করা যাবে না।

তারপরে, কাশ্যপ শকুন্তলা যখন পতিগৃহে যায় তখন শকুন্তলাকে উপদেশ দান করেছিলেন-

“শুশ্রষস্ব গুরুন् কুরু প্রিয়সখীবৃত্তিং সপত্নীজনে

ভর্তুবিপ্রকৃতাপি রোষণতয়া মাস্ম প্রতিপং গমঃ ।

ভূয়িষ্ঠং ভব দক্ষিণ পরিজনে ভাগ্যেষু অনুৎসেকিনী

যান্ত্যেবং গৃহিনীপদয়ং যুবতয়ো বামাঃ কুলস্যাধ্যঃ ॥”

[অভি - 8/১৮]

অর্থাৎ তুমি এখান থেকে পতিগৃহে গিয়ে গুরুজনদের সেবা করবে, সপত্নীদের সঙ্গে প্রিয়স্থীর ন্যায় ব্যবহার করবে, পতি বিরূপ আচরণ করলেও ক্রেতে কথনও তাঁর বিরুদ্ধাচারণ করবে না, পরিজনদের প্রতি সর্বদা দাক্ষিণ্য প্রদর্শণ করবে, ভাগ্যহেতু গবোধ করবে না। যুবতীরা এরূপ ব্যবহারের দ্বারাই সত্যিকারের গৃহিনীর মর্যাদা পায়। যারা এর বিপরীত আচরণ করে তারা হয় কূলের কলঙ্ক।

কাশ্যপের এই উপদেশ বানী থেকেই স্পষ্ট হয় যে, সমাজে তখন নারীরা কেমনভাবে লিঙ্গ বৈষম্যের স্বীকার হত। তিনি বলেই দিচ্ছেন - নারীদের কাজ হল সেবা করা - যেন তাঁরা নারীরূপী দাসী। আবার বলা হচ্ছে পতি খারাপ আচরণ করলেও তাঁর বিরুদ্ধাচারণ করা যাবে না। এককথায় বলে দেওয়া হচ্ছে স্ত্রীদেরকে তাঁর স্বামীদের পায়ের তলায় পড়ে থাকতে হবে। স্ত্রীদের কোনো প্রতিবাদ জানানোর অধিকার নেই।

এই নাটকের পঞ্চম অঙ্কে রাজা দুষ্যন্তের দ্বারা শকুন্তলার প্রত্যখ্যাতা হওয়া এবং শকুন্তলাকে অস্বীকার করা - এখানে শকুন্তলাকে চরম অপমান করা হয়েছে।

রাজা - ভোস্তপোধনাঃ, চিন্তয়ন্নপি ন খলু স্বীকরণমত্ত্ববত্যাঃ স্মরামি। তৎ কথামিমাম্ অভিব্যক্তসত্ত্বলক্ষণাঃ প্রত্যাত্মানং ক্ষেত্রিনমাশক্তমানঃ প্রতিপৎস্যে।

অর্থাৎ, ওহে তপস্থিগন শুনুন, চিন্তা করেও এঁকে বিবাহ করেছি বলে স্মরণ করতে পারছি না। তাহলে যে নারীর স্পষ্ট গর্ভলক্ষণ রয়েছে তাকে গ্রহণ করলে নিজেকে পরস্ত্রী স্পর্শকারী বলে পরিগণিত হতে হবে। এ আশঙ্কা থাকতে তাকে কীরূপে স্বীকার করি?

আবার শকুন্তলা তাঁর অঙ্গুরীয়কটি দেখাতে না পারায় রাজা বলেছেন -

রাজা - (সম্মিতম্) ইদং তৎ প্রত্যৃপন্নমতি ত্রৈণমিতি ষদুচ্যতে।

অর্থাৎ (ঈষৎ হাস্য করে) স্ত্রীলোকেরা অত্যন্ত— প্রত্যৃপন্নমতি, এরকম যে বলা হয়, এটা হল তাই।

এই সব উক্তির মাধ্যমেই বুঝতে পারছি যে, তখন প্রতি পদে পদে নারীদেরকে অপমানজনক কথা বলে ছোটে করা হত। নারীদেরকে কোনো সম্মান তো দেওয়া হতোই না, বরং অসম্মান অপমান করা হতো। এই সবের মাধ্যমেই আমরা বুঝতে পারছি যে, তখন নারীরা কীভাবে লিঙ্গবৈষম্যের স্বীকার হয়েছে।

**উপসংহারঃ** ‘যত্র পূজ্যন্তে নার্যঃ তত্র রমন্তে দেবতাঃ’ -

অর্থাৎ যেখানে নারীরা পূজিত হন সেখানে দেবতারা রমন করেন। কিন্তু বৈদিক যুগের পর এই সূক্তির বাস্তবের সাথে কতটা মিল আছে সেই বিষয়ে যথেষ্ট সংশয় আছে। বাস্তবের চিত্র দেখে আমরা স্পষ্টভাবে বুঝতে পারি যে, আমাদের সমাজ হচ্ছে পুরুষ তান্ত্রিক সমাজ। আমরা প্রাচীনকাল থেকে বর্তমানকাল পর্যন্ত সমাজের দর্পণস্বরূপ যে গ্রন্থগুলো আছে সেখানে থেকে জানতে পারি যে, আমাদের সমাজ পুরুষতান্ত্রিক সমাজ। বিভিন্ন নাটক, কাব্যগন্তু অধ্যয়ন করলে এই বিষয়টি আরও স্পষ্ট হয়ে যায়।

### **গ্রন্থপঞ্জি**

- ১) আচার্য মনু। মনুসংহিতা। সম্পা. শ্রী অশোক কুমার বন্দোপাধ্যায়। প্রকা. সদেশ
- ২) কালিদাস। অভিজ্ঞানশকুন্তলম্। সম্পা. সত্যনারায়ণ চক্রবর্তী। কলকাতাঃ পুস্তক ভাণ্ডার (পঞ্চম সংস্করণ, ১৯৯৫)
- ৩) কালিদাস। অভিজ্ঞানশকুন্তলম্। সম্পা. ডঃ অনিলচন্দ্র বসু/ সংস্কৃত বুক ডিপো (মে, ২০১০)
- ৪) ধীরেন্দ্রনাথ বন্দোপাধ্যায়। সংস্কৃত সাহিত্যের ইতিহাস। পশ্চিমবঙ্গ রাজ্য পুস্তক পর্ষৎ।

৫) ডঃ উদয়চন্দ্র বন্দোপাধ্যায় | বেদ সংকলন | সংস্কৃত বুক ডিপো

৬) The Abhijnanasakuntalam of Kalidasa- ED. M.R. KALE- MOTILAL- BAMNARASIDASS PUBLISHERS PVT. LTD. DELHI

## **The Concept of Shudras in Manusmriti**

Dr. Sudipta Sau

Assistant Professor in Bengali, Nagar College

Dr. Manik Biswas

Assistant Professor in Bengali, Nagar College

[sudiptasau.bengali@gmail.com](mailto:sudiptasau.bengali@gmail.com)

### Abstract:

The Manusmriti, also known as the Laws of Manu, is an ancient legal text among the many Dharmaśāstras of Hinduism. In this text, the society is divided into four varnas: Brahmins (priestly class), Kshatriyas (warriors and rulers), Vaishyas (traders and agriculturists), and Sudras (servants and laborers). The text lays out social, legal, moral, and ethical doctrines of this period. The ideas regarding Sudras are deeply entangled with the concept of Dharma (duty and righteousness) pertinent to Varna (class or caste). According to the Manusmriti, Sudras are assigned a place at the bottom of the social hierarchy, and their primary dharma is to serve the other three higher varnas without resentment. The text imposes restrictions on Sudras, limiting their rights to engage in certain religious ceremonies, access to education, and the accumulation of wealth or power. This societal structure, as outlined in the Manusmriti, underpins duty and privilege based on birth, and thus perpetuates social stratification. It's essential to note that there is significant debate about how these laws were interpreted and applied historically, with scholars arguing about whether these texts were prescriptive or descriptive. Moreover, contemporary perspectives often challenge and criticize the ethics and human rights implications of the varna system as depicted in the Manusmriti, especially in the context of modern values of equality and justice.

**Key Words: Manusmriti, Sudras, Varna, System, Hinduism, Social Hierarchy, Dharmaśāstras, Dharma, Varna (class, caste), Brahmins, Kshatriyas, Vaishyas.**

The Manusmriti has long been a subject of contention and critical scrutiny. Positioned as a legal text within the Hindu Dharmaśāstras, it ostensibly offers a prescriptive outline for societal organization. However, when examined critically, the Manusmriti reveals a complex and potentially interpolated tapestry of rulings and norms that some scholars believe have been modified, added to, or even fundamentally altered from any original composition. The presence of contradictions within its verses lends credence to the hypothesis that it may have been subjected to successive layers of commentary and revision, reflecting the biases and views of various authors over time, rather than a pristine transmission of the sage Manu's intentions. This calls into question the authenticity of the text and raises important considerations about the context in which such texts should be understood, particularly given their historical use in justifying rigid social hierarchies and systemic inequality. The prevailing understanding of Manusmriti as a central legal text of ancient Hindu society is complicated by its complex manuscript tradition and modern nomenclature. The term 'Manusmriti,' which correlates to the text's verse composition, deviates from the more ancient appellation 'Manava Dharmashastra,' as denoted in numerous extant manuscripts. Such nominal discrepancies highlight the nuances in historical context and authorial attribution.

While the text is traditionally ascribed to the interlocution between the primordial figure Manu and sage Bhrigu and dated between the 1st and 3rd centuries CE, the attribution itself poses critical questions regarding the construction of authority and canonization of religious texts. The scholarly exegesis of the Manusmriti, anchored by a succession of commentaries by learned individuals, provides insight into evolving interpretations of the text over time. Medhatithi, active between the late 9th and early 10th century CE, is acknowledged as the earliest significant commentator of the Manusmriti. Notably, the dates provided might be anachronistic as they precede the commonly accepted chronology of the text. The works of subsequent commentators like Govindaraja and Kulluka Bhatta, flourishing around the 11th and late 12th to early 13th centuries CE respectively, illustrate the continuum of intellectual engagement with the Manusmriti. Kulluka Bhatta, in particular, is celebrated for his lucid and concise interpretation. Contrary to the claim of his Bengali origins, Kulluka's precise cultural and geographical roots remain a subject of scholarly debate, although his residency in Kashi is more certain. Such commentary traditions are critical in comprehending the Manusmriti's role within Hindu jurisprudence, yet they also underscore the complexity of authorial voices that have shaped the text's understanding through the lens of their own times and socio-cultural backgrounds. Notably, the text's reach extended beyond the Indian subcontinent, shaping legal and societal norms in Southeast Asia, indicating its profound transregional impact. Its early translation into English by Sir William Jones marked the beginning of its engagement with colonial scholarship, which influenced the interpretation and application of Hindu law during the British Raj. This intercultural exchange under colonial auspices invites scrutiny into the dynamics of power and knowledge production, especially considering the text's role in entrenching social stratifications that have had enduring effects on the fabric of Indian society.

Manusmriti, attributed to the ancient sage Manu, is one of the foundational texts in Hindu jurisprudence and social order. Within this ancient legal code, the term 'Sudra' holds a multifaceted significance, extending beyond a singular connotation. Rishi Manu employs the term in both a general and special sense, stressing the existence of distinct categories within the overarching label of 'Sudra.' This essay critically examines the nuanced portrayal of 'Sudra' in Manusmriti, highlighting the dual classification based on lifestyle, rituals, beliefs, behaviour, marriage, social function, and morality, as well as the genetic or ancestral affiliation denoted by birth from 'Sudra' parents. Manusmriti presents 'Sudra' in a general sense, encompassing a broad spectrum of characteristics related to lifestyle, rituals, beliefs, behaviour, marriage, social function, and morality. This holistic approach acknowledges the diversity within the 'Sudra' category, emphasizing that individuals falling under this label can vary significantly in their societal roles and moral standings. Simultaneously, Manusmriti introduces a special sense of 'Sudra,' indicating a more specific categorization. This special sense involves the determination of Sudras' status based on one's birth from Sudras' parents, establishing a hereditary dimension for the classification. Manusmriti distinctly outlines two primary categories of 'Sudra.' The first category is determined by factors such as lifestyle, ritual activities, beliefs, behaviour, marriage, social function, and morality. This classification underscores the idea that Sudra's identity is not solely based on birth but encompasses a broader range of social and personal attributes. The second category, however, relies on birth from Sudras' parents, highlighting a genetic or ancestral connection. This birth-based classification, termed 'Sudrajoni,' implies that individuals inherit their 'Sudra' status from their forebears, establishing a hierarchical structure within the social order. The concept of 'Sudrajoni' introduces an inherent stratification within society, where individuals are categorized based on their familial lineage rather than individual qualities or actions. This approach raises ethical questions about the fairness and justice of a system that assigns social status merely through birth, potentially perpetuating inequality and limiting social mobility. The emphasis on birth-based categorization also challenges the principles of

meritocracy, suggesting that one's destiny is predetermined by familial ancestry, rather than personal achievements and character. Manusmriti's treatment of the concept 'Sudra' reveals a complex and multifaceted understanding, encompassing both general and special senses. Rishi Manu's delineation of two types of 'Sudras' underscores the importance of lifestyle and behaviour alongside birth-based classifications. While the text acknowledges the diversity within the 'Sudra' category, the birth-based classification introduces potential challenges to notions of equality and meritocracy. A critical examination of these aspects is crucial for understanding the historical and cultural context of Manusmriti and its implications for societal structures in ancient India.

Manusmriti, often attributed to the ancient Manu sage, serves as a foundational text for the Hindu legal system. Within its verses, the doctrine established a rigid caste system, hierarchically organizing society into various castes, with Brahmins occupying the highest position. This essay critically examines Manusmriti's discriminatory treatment of the Sudra caste, highlighting instances of injustice, inequality, and opposition to principles enshrined in the Indian Constitution. According to Manusmriti, a Brahmin who neglects the reading of the Veda and engages in rituals outside the sacred texts is demoted to the status of a Sudra. Committing a crime or sin similarly results in a Brahmin being labelled Sudra, revealing a punitive approach to deviations from prescribed conduct. Furthermore, individuals deemed as hybrids by birth and those classified as Dalits are automatically categorized as Sudras, reinforcing a discriminatory mindset based on lineage and birth. The Manusmriti introduces significant discrimination in the legal realm, where higher castes receive preferential treatment over Sudras. Despite committing similar offenses, Sudras faces explicit condemnation, often accompanied by severe punishments, including capital punishment. This unequal application of the law contradicts principles of justice and equality, as higher castes escape similar repercussions for identical transgressions. The Manusmriti endorses social segregation by restricting Sudras from walking on the same roadways as Brahmins. Additionally, Brahmins are prohibited from residing in Sudra, perpetuating a system of exclusion based on caste. The text prescribes harsh punishments, such as the death penalty, for Sudra men engaging in legitimate or illegitimate relationships with higher caste women. Such punitive measures highlight Manusmriti's endorsement of a caste-based social order with severe consequences for those who defy these norms. R. S. Sharma said that 'this law which provides a license for the extortions from the Sudra community by member of upper barnas.<sup>1</sup>

The Manusmriti further endorses violence and suppression against Sudras, who criticize or gossip higher castes. The prescription of cutting the tongue as a punishment for such acts emphasizes the extreme measures that the text advocates to maintain social hierarchy and silence dissent. This not only violates the principles of free speech, but also underscores the oppressive nature of Manusmriti's caste-based ideology. The critic told that 'While making the qualification of witnesses, Manu is distrustful about women and people of lower Varnas. Therefore, he insists that women should give evidence for women and for twice-born men for twice-born men (dwija) (Brahmin, Kshatriya, and Vaisya) of the same kind and men of the lowest castes for the lowest. We are likewise ready to discover a note on dying declarations. Manu has given special case for witnesses in situations where a crime happens inside a house, a forest, or a person who is about to die of homicide, and then whoever is close to the injured individual can be the witness. If a reasonable witness was not accessible at that point, witness can be given by a woman, by a child, by an old man, by a student, by a relative, by a slave, or by a hired worker.'<sup>2</sup> Manu told that (Manusmriti, 1: 88,89,90,91). The social status of Shudras was very bad during the reign of the Maratha Peshwas. Shudras had

no right to enter into the city. Dogs and cattle could roam, but the Shudras did not have the right to enter the city.

In the modern context, Manusmriti's doctrine starkly contradicts the principles enshrined in the Indian Constitution. The Constitution upholds ideals of equality, justice, and rejection of untouchability. Manu's advocacy for the higher castes directly contradicts these constitutional values, perpetuating a hierarchical caste system that undermines the inclusive and egalitarian vision of the Indian state. The Manusmriti, with its discriminatory treatment of the Sudra caste, stands as a testament to historical caste-based prejudices. In the modern context, this contradicts the foundational principles of the Indian Constitution, challenging the nation's commitment to equality and justice. Acknowledging these contradictions is crucial for fostering a more inclusive and just society that rejects caste-based discrimination and upholds India's constitutional values.

**Work cited:**

1. Sharma, R.S., Ancient India: A Social History of the Lower Order Down to Circa A.D. 600, 1990, p. 113.
2. Routledge Handbook of South Asian Criminology, edited by K. Jaishankar, Taylor & Francis Group, 2019. Created from infibnet-ebooks on 2024-02-26 14:38:16.

**Bibliography:**

1. Sharma, Ram Sharan (1990). Śūdras in Ancient India: A Social History of the Lower Order Down to Circa A.D. 600 (Third ed.). Motilal Banarsi Dass Publishers.
2. Thapar, Romila (2004). Early India: From the Origins to AD 1300. University of California Press.
3. Ramananda Chattopadhyay(ed.) The Indian Press Ltd., Modern Review November 1921. India.
4. Meena, Sohan Lal. "RELATIONSHIP BETWEEN STATE AND DHARMA IN MANUSMRITI." The Indian Journal of Political Science, vol. 66, no. 3, 2005, pp. 575–88.
5. Meena, Sohan Lal. "RELATIONSHIP BETWEEN STATE AND DHARMA IN MANUSMRITI." The Indian Journal of Political Science, vol. 65, no. 1, 2004, pp. 29–40.

## কিরাতারজুনীয় মহাকাব্যে বনেচরের রাজনীতিক জ্ঞান : একটি সমীক্ষা

পিয়ালি সাহা

SACT, নগর কলেজ

[sahapiyali157@gmail.com](mailto:sahapiyali157@gmail.com)

### সংক্ষিপ্তসার

সংস্কৃত কাব্যের দুটি ভেদ সকল পাণ্ডিতগণ স্বীকার করেছেন- দৃশ্য ও শ্রব্য। শ্রব্যকাব্যের অবান্তর ভেদগুলির মধ্যে অন্যতম হল মহাকাব্য। সংস্কৃত সাহিত্যের মহাকবিদের মধ্যে ভারবি উল্লেখযোগ্য। তাঁর রচিত কিরাতারজুনীয় মহাকাব্যটি সংস্কৃত সাহিত্যের অমূল্য সম্পদ। মহাভারতের কাহিনী অবলম্বনে এই মহাকাব্যে রাজনীতি, সমাজনীতি ও অর্থনীতি প্রতিফলিত হয়েছে। এই মহাকাব্যের প্রথম সর্গেই বনেচরের উক্তির মধ্য দিয়ে কবির রাজনীতিক জ্ঞানের পরিচয় পাওয়া যায়। তবে কবির বর্ণনায় বনবাসী গুপ্তচর বনেচর যেভাবে যুধিষ্ঠিরের কাছে দুর্যোধনের রাজ্যশাসন পদ্ধতি যেমন উপায়চতুষ্টয়ের প্রয়োগ ব্যাখ্যা করেছেন তাতে বনেচর যে একজন দক্ষ রাজনীতিকজ্ঞ তা সহজেই বোঝা যায়। কিরাতারজুনীয় মহাকাব্যে বনেচরের রাজনীতিক জ্ঞানের সমীক্ষাত্ত্বক অধ্যয়নের উদ্দেশ্যেই বর্তমান প্রবন্ধের যাত্রা।

**সূচক শব্দ-** ভারবি, মহাকাব্য, কিরাতারজুনীয়, বনেচর, রাজনীতি, রাজ্যশাসন পদ্ধতি, উপায়চতুষ্টয়।

### ভূমিকা

সংস্কৃত সাহিত্যে কালিদাসোত্তর যুগে মহাকাব্যের ক্ষেত্রে মহাকবি কালিদাসের উত্তরসূরিরূপে ভারবি, মহাকবির নাম গৌরবচ্ছিটায় চিরভাস্তর হয়ে রয়েছে। মহাকবি ভারবি ছিলেন রবির মত ভাস্তর উজ্জ্বল নক্ষত্র। তাই বলা হয়েছে- ‘ভারবের্ভাতি রবিরিব’। উত্তর পশ্চিম ভারতের বর্তমানে গুজরাটের অন্তর্গত আনন্দপুর গ্রামে এক কৌশিক ব্রাহ্মণ গোত্রীয় পরিবারে তিনি জন্মগ্রহণ করেছিলেন। তাঁর পিতা ছিলেন শ্রীধর এবং মাতা ছিলেন সুশীলা। কবির বাল্যনাম ছিল দামোদর। এই দামোদর-ই যৌবনকালে তাঁর কবিত্ব প্রতিভার দ্বারা সকলের কাছে মহাকবি ভারবি পরিচয়ে পরিচিত হয়ে ওঠেন। আরও জানা যায় যে, ভগুকচ্ছের চন্দ্রকীর্তির কন্যা রসিকাকে তিনি বিবাহ করেন এবং তাঁদের পুত্রসন্তানের জন্ম হয়, যার নাম ছিল মনোরথ। এই মনোরথের বংশধর ছিলেন মহাকবি দণ্ডী। ভারবির আবির্ভাব কাল নিয়ে বিভিন্ন মতান্তর লক্ষ্য করা যায়। তবে

পাশাত্য পন্ডিত অধ্যাপক কৌথের মতে, ৫৫০ খ্রীষ্টাব্দকেই<sup>১</sup> মহাকবি ভারবির আবির্ভাব কালরূপে চিহ্নিত করা হয়েছে।

কালিদাসোভর যুগের মহাকবি ভারবি রচিত ‘কিরাতার্জুনীয়’ মহাকাব্যটি ১৮ টি সর্গে রচিত। মহাকবির এই অনন্য সৃষ্টি ‘কিরাতার্জুনীয়’ ছাড়া আর কোন রচনা সম্পর্কে তেমন কিছু জানা যায় না। আলোচ্য মহাকাব্যটির উৎস হল মহাভারত। মহর্ষি ব্যাসদেবকৃত মহাভারতের বনপর্ব এবং শিবপুরাণ থেকে এই মহাকাব্যের আখ্যানভাগ গৃহীত হয়েছে। মহাকবির এক সৃজনশীল সৃষ্টি হল ‘কিরাতার্জুনীয়’। রাজনীতি, দণ্ডনীতি, নীতিবিদ্যা, রাজধর্ম ইত্যাদি ছাড়াও ঋতু, পর্বত ইত্যাদি নানাবিধি প্রকৃতি বর্ণনার সমাবেশের মধ্য দিয়ে কবি মহাকাব্যের পূর্ণঙ্গরূপ দিতে প্রয়াস পেয়েছেন।

- অষ্টাদশ সর্গে রচিত ‘কিরাতার্জুনীয়ম্’ মহাকাব্যের প্রথম সর্গে কপট দ্যুতক্রিয়ায় হতসর্বস্ব পাণ্ডবগণ (যুধিষ্ঠির) বনবাসকালে ব্রহ্মচারী ছন্দবেশে বনেচরের মাধ্যমে দুর্যোধনের রাজ্যশাসন পদ্ধতির প্রভৃত তথ্যসমূহ জেনেছেন (১-২৫ নং শ্লোক) এবং বীরাঙ্গনা দ্রৌপদী শক্রের অভ্যন্তর বৃত্তান্ত শ্রবণ করে নারীজনোচিত সদাচার ত্যাগ করে যুধিষ্ঠির ক্রোধ ও উৎসাহ উদ্বীপক বাকে তাকে যুদ্ধের জন্য প্রস্তুত হতে বললেন (২৬-৪৬ নং শ্লোক)।
- দ্বিতীয়সর্গে যুধিষ্ঠির, মধ্যম পাণ্ডব ভীমসেন ও সকলকে হিতোপদেশসূচক সামবেদ বললেন সকলকে ধীরতা ও সহিষ্ণুতা অবলম্বন করার নির্দেশ দিলেন।
- তৃতীয় সর্গে ব্যাসদেবের নির্দেশে যক্ষরাজের অনুচর অর্জুনকে ইন্দ্রকীল পর্বতে গমন করেন এবং ব্যাসদেব অর্জুনকে মহাবিদ্যা দান করেন অধিক শক্তি ও অস্ত্রলাভের জন্য।
- চতুর্থ সর্গে অর্জুনের যাত্রাপথে শরৎঋতুর নৈসর্গিক সৌন্দর্য বর্ণনা এবং হিমালয় দর্শন।
- হিমালয় বর্ণনা, হিমালয়ের পাদদেশে অর্জুনের উপস্থিতি, যক্ষানুচরের প্রস্থান, গুহ্যকের উপদেশ – এসব নিয়েই পঞ্চম সর্গ।
- ষষ্ঠ সর্গে ইন্দ্রকর্ত্তক অর্জুনের তপস্যার বিঘ্ন ঘটানোর উদ্দেশ্য অঙ্গরাদের প্রেরণ।
- অঙ্গরাগণ সপ্তম সর্গে ইন্দ্রকীল পর্বতে গমন করেন এবং পুষ্পাদি অবচয়ন করেন।
- অষ্টম সর্গে অঙ্গরাদের বনবিহার ও জলকেলি।
- নবম সর্গে রাত্রিকালে অঙ্গরাদের মদিরা পান ও কামক্রিয়া।
- অর্জুনের চিত্ত আকর্ষনের জন্য অঙ্গরাদের নানাপ্রকার ছলাকলা এবং সেই ছলাকলায় অর্জুনকে প্রবুদ্ধ করবার প্রয়াসে ব্যর্থ হয়ে অঙ্গরাদের প্রস্থান দশম সর্গে বর্ণিত হয়েছে।

- একাদশ সর্গে ব্রাহ্মণের বেশে দেবরাজ ইন্দ্রের অর্জুনাশ্রমে উপস্থিতি এবং শিবের আরাধনা করতে উপদেশ দান।
- অর্জুনের তপস্যা এবং কিরাতবেশে অর্জুনের সাথে তাঁর যুদ্ধ করবার আশ্চাস প্রদান।
- অযোদশ সর্গে অর্জুনের অভিমুখে ধাবিত বন্যবরাহের প্রতি অর্জুন ও কিরাতরূপী শিব উভয়ের বাণনিক্ষেপ বরাহের মৃত্যু।
- চতুর্দশসর্গে অর্জুনের সঙ্গে যুদ্ধে কিরাত সৈন্যদের প্রাথমিক বিপর্যয়।
- পুনরায় অর্জুনের বিরুদ্ধে কিরাত সৈন্যদের সংঘর্ষ পঞ্চদশ সর্গে।
- ষোড়শ সর্গে যুদ্ধে শিব ও অর্জুন, উভয়েই দিব্যান্ত্র প্রয়োগ এবং অর্জুনের পরাজয়।
- দিব্যান্ত্রের ব্যর্থতায় অর্জুনের প্রস্তর, বৃক্ষকান্ড ইত্যাদির ব্যবহার এবং পরিশেষে ব্যর্থতা সপ্তদশ সর্গে।
- অষ্টাদশ সর্গে শিব অর্জুনকে পাশুপাত অস্ত্র ও ধনুর্বেদ দান করলেন।

‘বনেচর’ শব্দটির ব্যৃৎপত্তি করলে পাওয়া যায় বনে চরতি যঃ সঃ বনেচরঃ – এখানে উপপদ তৎপুরুষ সমাস হয়েছে। কিন্তু পূর্বপদের বিভক্তি লোপ হয়নি। “ত্বাচ”<sup>৩</sup> এই সূত্রানুসারে এখানে বিকল্পে সমাস হয়েছে বলে বনচরঃ না হয়ে বনেচরঃ হয়েছে। দুর্যোধন পান্তবগনকে কপটদৃতক্রীড়ার মাধ্যমে রাজ্য থেকে নির্বাসিত করে স্বমন্ডল ও পরমণ্ডলবাসী নৃপতিবর্গের এবং স্বীয় অমাত্যাদি প্রকৃতিবর্গের অনুরাগ আকর্ষণের জন্য, তাদের সবর্তোভাবে অভেদ্য করবার উদ্দেশ্য যে সকল নীতি প্রয়োগ করেছিলেন তাঁর মধ্যে সাম- দান – দন্ত ও ভেদ দুর্যোধনের এই উপায় চতুষ্টয়ের প্রয়োগ নৈপুণ্য সবিশেষ উল্লেখযোগ্য – যা বনেচরই ব্রহ্মচারীর ছদ্মবেশে বনবাসী প্রভু এই যুধিষ্ঠিরের কাছে ব্যক্ত করেছেন।

সামনীতি - দুর্যোধনের সামাদি উপায় চতুষ্ট্যের উল্লেখ করতে গিয়ে বনেচর প্রথমে সামনীতি প্রয়োগের কৌশল বর্ণনা করেছেন – ‘নিরত্যয়ং সাম ন দানবর্জিতং’<sup>৪</sup> অর্থাৎ মিষ্টাদি ভাষণের সঙ্গে অর্থাদি প্রদান করে তিনি লোককে বশীভূত করেন, অন্যথা জনানাং দুগ্ধহত্ত্বাং - নচেৎ তা লোকেদের কাছে গ্রহণীয় হবে না; সুতরাং দুর্যোধনের সামপ্রয়োগ দানবর্জিত ছিল না। কেবল শুক্ষ প্রিয়বাক্যের দ্বারা লুকাদি ব্যক্তিদের বশীভূত করাযায় না- ‘অন্যথা লুক্ষ্যাবর্জনস্য শুক্ষপ্রিয়বাক্যে দুর্করত্বাং’<sup>৫</sup>। এবিষয়ে চাণক্য শ্লোকে বলা হয়েছে – ‘লুক্ষ্ম অর্থেন গৃহীয়াৎ, সাধুম অঞ্জলি কর্মনা। মুখ্যং ছন্দানুরোধেন তত্ত্বার্থেন চ পত্তিম্’<sup>৬</sup>। অর্থাৎ লোভীকে অর্থের দ্বারা, সজ্জন ব্যক্তিদের কৃতাঞ্জলির দ্বারা, মূর্খ ব্যক্তিদের তাদের ইচ্ছানুরূপ কার্যের দ্বারা এবং পত্তিত ব্যক্তিদের তত্ত্বজ্ঞানের দ্বারাই বশীভূত করা যায়।

দাননীতি – উপায় চতুষ্টয়ের মধ্যে দ্বিতীয় নীতি হল দান এই দাননীতি সম্পর্কে বনেচরের উক্তি হল – ‘ন ভূরিদানং বিরহ্য সৎক্রিয়াম’<sup>৭</sup> অর্থাৎ দুর্যোধনের প্রভৃত দান সৎকার বর্জিত নয়। কেননা অনাদরে দান করলে কোনো ফল প্রাপ্তি ঘটে না- ‘অনাদরে দানং বৈকল্যাদিতি ভাবঃ’<sup>৮</sup>। আবার কোনোপ্রকার বিবেচনা না করে গুণী- নির্ণন নির্বিশেষে দান করা, তাতে কেবল যে অবিবেকিত্বের পরিচয় পাওয়া যাবে তা নয়, অর্থভান্নারও শূন্য হয়ে যাবে- ‘ন চৈবং সর্বত্র যেন অবিবেকিত্বং কোষহানিশ স্যাঃ’<sup>৯</sup>। যথার্থগুণী ব্যক্তিকে যথোচিত সমাদর প্রদর্শন করেই তিনি দান করেন- ‘গুণেষু এব আদর ভূরিদানং চ ইতি’<sup>১০</sup>।

দণ্ডনীতি – উপায় চতুষ্টয়ের তৃতীয় নীতি দণ্ডনীতি। শক্ররাজ দুর্যোধনের দণ্ডপ্রণয়ন পদ্ধতি বিষয়ে বনেচর যুধিষ্ঠিরের কাছে যা ব্যক্ত করেছিলেন তা হল- ‘বশী দুর্যোধনঃ বসুনি ধনানি বাঞ্ছন् ন’<sup>১১</sup> অর্থাৎ জিতেন্দ্রিয় দুর্যোধন ধনলাভের ইচ্ছায় নয়; মোটকথা লোভের বশবর্তী না হয়ে, ক্রোধবশতও নয়, অর্থাৎ ধর্মশাস্ত্রানুসারে ক্রোধ ও লোভ বর্জিত হয়ে, যাজ্ঞবঙ্গ্য স্মৃতিবাক্যাদি স্মরণ করে লোভাদি কারণ ব্যতিরেকে এটি আমার স্বধর্ম এরূপ বিবেচনা করে দণ্ড প্রয়োগ করেন। এ বিষয়ে ধর্মশাস্ত্র ‘মনুসংহিতা’র সপ্তম অধ্যায়ে বলা হয়েছে- “অদন্তান্ দণ্ডযন্ত রাজা দন্তাং চৈবাপ্যদণ্ডযন্ত। অযশো মহদাপ্লোতি নরকক্ষেব গচ্ছতি”<sup>১২</sup>। অর্থাৎ দন্তের অযোগ্য ব্যক্তিকে দণ্ড দিয়ে এবং দণ্ডযোগ্য ব্যক্তিকে দণ্ড না দিয়ে রাজা কেবল অখ্যাতি লাভ করেন না, তিনি নরকেও গমন করেন। সুতরাং, অপরাধীকে দণ্ডযান রাজার কর্তব্য, নিরপরাধীকে নয়। আবার এই দণ্ড প্রয়োগ বিষয়ে রাজাকে বিচারকের পরামর্শ গ্রহণ করতে হয়; তাই নারদস্মৃতিতে বলা হয়েছে - “ধর্মশাস্ত্রং পুরুষ্ট্য প্রাড়বিবাকমতে স্থিতঃ। সমাহিত মতি পশ্যদ্ব্যবহারননুক্রমাঃ”<sup>১৩</sup>। অর্থাৎ ধর্মশাস্ত্র সামনে রেখে, বিচারকের পরামর্শ গ্রহণ করে শান্ত মনে রাজা পরপর সকল বিচার্য বিষয় পরীক্ষা করবেন। শক্র বা মিত্র যে কেউ অধর্মের অনুষ্ঠান করুক না কেন রাজা দুর্যোধন কর্তব্যবুদ্ধি প্রণোদিত হয়ে নিরপেক্ষভাবে দণ্ডপ্রয়োগ করেন।

ভেদনীতি – এই নীতিটি হল দুর্যোধনের উপায় চতুষ্টয় প্রয়োগের অস্তিম অর্থাৎ শেষনীতি। এ বিষয়ে বনেচরের বক্তব্য হল- ‘শক্ষিতঃ সন্ পরিতঃ পরেতরান্ রক্ষান্ বিধায় আশক্ষিতাকারম্ উপৈতি’<sup>১৪</sup>। অর্থাৎ দুর্যোধন শক্ষিত অর্থাৎ অবিশ্বস্ত হয়েও নিজ ও পররাজ্যের সর্বত্র অর্থাৎ পরথেকে ভিন্ন আত্মীয় অবস্থাকদের অথবা যারা উপজাপ অর্থাৎ ভেদনীতি প্রয়োগের দ্বারা শক্রপক্ষীয় লোকদের বশীভূত করতে সক্ষম তাঁদের মন্ত্রগুপ্তিসমর্থ রক্ষকরূপে নিযুক্ত করে স্বয়ং অবিশ্বস্ত বা শক্ষিত হয়েও বিশ্বস্ত বা আশক্ষিতের মত আচরণ করে পরের মুখেই অর্থাৎ রক্ষকদের মুখে শক্রপক্ষীয়দের মধ্যে ভেদকৌশল প্রয়োগ করছেন- ‘স্বয়মবিশাস্তোঃপি বিশ্বস্তবদ্ব এব

ব্যবহরন্ পরমুখেনৈব পরান্ ভিন্নতি ইত্যর্থঃ<sup>১৫</sup>। কার্যসমাপ্তির পর দুর্যোধন তাদের যে অর্থ প্রীতিপূর্বক দান করতেন, সেই অর্থদানই দুর্যোধনের কৃতজ্ঞতা প্রকাশ করে, কেবল বাক্যপ্রয়োগ নয়- ‘প্রীতিদানৈঃ এব অস্য কৃতজ্ঞত্বং প্রকাশ্যতে, ন তু বাঙ্মাত্রেণ ইত্যর্থঃ<sup>১৬</sup>। কৃতজ্ঞ রাজার প্রতি অনুজীবিগন অনুরাগাকৃষ্ট হয় এবং অনুরক্ত হয়ে তারা রাজাকে রক্ষা করে।

**উপসংহারঃ** – উপরিউক্ত আলোচনা দেখা যাচ্ছে যে, দুর্যোধন প্রকৃতপক্ষে একজন কপটব্যক্তি। তথাপি সে কপট পাশাখেলায় অর্জিত তাঁর রাজ্যকে হারাতে রাজি নয়। সে তাঁর রাজ্যসম্পত্তিকে টিকিয়ে রাখার জন্য উপায়চতুষ্টয়ের যথাযথ প্রয়োগ করেছেন যা আমরা (রাজা যুধিষ্ঠির ও পাঠকবর্গ) বনেচরের মুখ থেকে শ্রবণ করে জানতে পেরেছি। রাজনীতির প্রধান বিষয় হল রাজ্যপরিচালনা। আর সেই রাজ্যপরিচালনার ভার থাকে রাজার উপর। রাজধর্ম সম্পর্কে যথাযথ অবগত হয়েই একজন রাজা তাঁর রাজ্য সুষ্ঠুভাবে পরিচালনা করতে সমর্থ হন। আলোচনা উক্ত প্রবক্ষে দুর্যোধন রাজধর্মের যথাযথ জ্ঞানের সঙ্গেই রাজ্যপরিচালনা করেছেন তা আমরা বনেচরের উক্তির মাধ্যমে জানতে পারি। রাজনীতি প্রসঙ্গত এই আলোচনা থেকে মহাকবি ভারবির রাজনীতি শাস্ত্র জ্ঞানের পরিচয় যেমন আমরা পেয়েছি তেমনি বনেচরের মত একজন সাধারণ ক্ষুদ্র ব্যক্তির রাজনৈতিক জ্ঞান পাঠক বর্গের সমক্ষে স্পষ্ট ফুটে উঠেছে। রাজ্যপরিচালনার নীতিমার্গ উপায় চতুষ্টয়কে বনেচর রাজা যুধিষ্ঠিরের কাছে যেভাবে ব্যক্ত করেছেন তাতে স্পষ্ট যে, বনেচরের উপায় চতুষ্টয়ের (সাম-দান-দণ্ড-ভেদ) যথাযথ জ্ঞান ছিল। বনেচর দ্বৈত বনে প্রভু যুধিষ্ঠিরের কাছে তাঁর বক্তব্য পেশ করার পূর্বে তাকে অনুগ্রহপূর্বক প্রণাম জানিয়েছেন- এর মধ্যে দিয়ে বনেচরের বিন্মুস্তভাব পরিচয়ের জ্ঞান আমরা পেয়েছি, এছাড়াও আমরা দেখেছি শক্র রাজা দুর্যোধনের অভ্যন্তর বৃত্তান্ত নিবেদন করতে গিয়ে বনেচরের হস্তয় ব্যথিত হয়নি, কেননা যথার্থ হিতৈষী ব্যক্তি কখনো প্রিয় অথচ মিথ্যা বাক্য বলতে ইচ্ছা করেন না- এর মধ্যে দিয়ে মহাকবি ভারবি বনেচরের মত একজন সাধারণ দৃতের সত্যবাদিতা, ধর্মপরায়নতার এক মৌলিক পরিচয় দিয়েছেন। কবি বনেচরের মত এক অতিসামান্য গুপ্তচরের মাধ্যমে যে রাজনীতি শাস্ত্রজ্ঞানের পরিচয় দিয়েছেন তাতে বনবাসীদের প্রতি কবির সহমর্মিতা প্রকাশিত হয়েছে। কবির এই মৌলিক সৃষ্টি পাঠক সমাজের কাছে ভূয়সী প্রশংসার দাবি রাখে।

### **উল্লেখপঞ্জি**

১. কিরাতাজুনীয়, পৃষ্ঠাক-৩৬

২. তদেব, পৃষ্ঠাক-০২

৩. অষ্টাধ্যায়ী ২।২।২২
৪. কিরাতাজুনীয়, শ্লোক-১২
৫. .... শঙ্খপ্রিয়বাকৈ দুষ্করত্বাঃ । তদেব, পৃষ্ঠাক্ষ-১১৮
৬. চাণক্য সংগ্রহ, শ্লোক-৩৩
৭. কিরাতাজুনীয়, শ্লোক-১২
৮. অনাদরে দানং..... ভাবঃ । তদেব, পৃষ্ঠাক্ষ-১১৭
৯. ....কোষহানিশ স্যাঃ । তদেব, পৃষ্ঠাক্ষ-১১৮
১০. গণেশু এব..... চ ইতি । তদেব, পৃষ্ঠাক্ষ-১১৮
১১. তদেব, শ্লোক-১৩
১২. মনুসংহিতা, শ্লোক-৭
১৩. কিরাতাজুনীয়, পৃষ্ঠাক্ষ-১২১
১৪. তদেব, শ্লোক-১৪
১৫. ....ভিন্নতি ইত্যর্থঃ । তদেব, পৃষ্ঠাক্ষ-১২৩
১৬. ....কৃতজ্ঞত্বং প্রকাশতে, ন তু বাঙ্মাত্রেণ ইত্যর্থঃ । তদেব, পৃষ্ঠাক্ষ -১২৫

### গ্রন্থপঞ্জি

- ১। কৌটিল্য। অর্থশাস্ত্রম্। সম্পা. অনিল চন্দ্র বসু। সংস্কৃত বুক ডিপো (জুন, ২০০৭)
- ২। দত্ত, চৈতালী। চাণক্য সংগ্রহ। নবপত্র প্রকাশন। ২০১৪
- ৩। দাস, দেবকুমার। সংস্কৃত সাহিত্যের ইতিহাস। সদেশ। ১৪০৪
- ৪। বন্দ্যোপাধ্যায়, ধীরেন্দ্রনাথ। সংস্কৃত সাহিত্যের ইতিহাস। পশ্চিমবঙ্গ রাজ্যপুস্তক পর্মৎ। ২০০৫
- ৫। ভারবি। কিরাতাজুনীয় (প্রথমঃ সর্গঃ), সম্পা. অনিল চন্দ্র বসু। সংস্কৃত বুক ডিপো (জুলাই, ২০১২)

- ৬। ভারবি। কিরাতার্জুনীয় (প্রথমং সর্গঃ), সম্পা. শ্রী সমীর শর্মা এবং উমেশচন্দ্র পাণ্ডেয়।  
বারাণসীঃ চৌখান্দা বিদ্যাভবন।
- ৭। মনু। মনুসংহিতা (সপ্তমোৎধ্যায়ঃ)। সম্পা. অনিল চন্দ্র বসু এবং শ্রী অশোক কুমার শাস্ত্রী।  
সংস্কৃত বুক ডিপো (আগস্ট, ২০০৬)
- ৮। Bhatt, Vasantakumar M. *Kirātarjunīyatīkā*, Delhi: Nag Publishers
- ৯। Lahiri & Sastri, A Higher Sanskrit Grammer and Compotion, The Dhaka Students' Library, 2012.

# শতকাব্দী কাব্যে ভর্তুহরির দার্শনিক দৃষ্টিভঙ্গি:

Moumita Das  
SACT, Nagar College

## সারসংক্ষেপঃ

ভারতীয় দর্শনচিন্তা যে কারণে একসময় মহামানব জ্ঞানীব্যক্তিরা উপলক্ষি করেছিলেন সেই একই কারণ 'শতকাব্দী'-র কবি ভর্তুহরি তাঁর এককজীবনে উপলক্ষি করেছিলেন বলেই প্রকটভাবে সেই মোক্ষেচ্ছা স্বরূপ দার্শনিক ভাবনা তাঁর শতক কাব্যগুলিতে প্রতিফলিত হয়েছে। কিংবদন্তী ভিত্তিক কবি ভর্তুহরির ব্যক্তিগত জীবনের যে চিত্র উপলক্ষ হয় ; তাতে সুস্পষ্ট লক্ষণীয় যে, কবির বাল্য, কৈশৰ, ঘোবন, প্রাপ্তঃবয়স্ককালীন সমাজজীবনের বিভিন্ন স্তরে বাস্তবতার কঠিন যে চিত্র কবির অন্তঃকরণে অঙ্কিত হয়েছে, তার যথার্থই কবি ভর্তুহরি সম্পূর্ণরূপে 'শৃঙ্গারশতক', 'নীতিশতক', 'বৈরাগ্যশতক' - এ প্রতিফলন ঘটিয়েছেন। জীবনের প্রথম স্তরে কামনা- বাসনা- নারীসঙ্গ- প্রেম- ভালোবাসারূপ অভূতপূর্ব অনুভূতিই প্রাধান্য পেয়েছে 'শৃঙ্গারশতক' কাব্যে। আবার শৃঙ্গারসাহ্যক বিষয়টি তীব্র নির্দিত হয়েছে 'নীতিশতক' কাব্যে। জাগতিক জ্ঞান- সামাজিক জ্ঞানের মহিমা এবং অজ্ঞানের তীব্র নির্দা তিনি প্রকাশ করেছেন 'নীতিশতক'-এ। কবি ভর্তুহরির 'বৈরাগ্যশতক'-এ ভারতীয় দর্শনের মূল তাত্ত্বিক বিষয়টিই প্রকটিত হয়েছে। এই জগৎ-সংসারের অসারতা, ভোগ-সুখের শূন্যতা, 'সোহহম্ ব্রক্ষ' - এর উপলক্ষি অতিতীব্ররূপেই কবি ভর্তুহরির দার্শনিক চিন্তন 'বৈরাগ্যশতক'-এ প্রকটিত হয়েছে। 'নীতিশতক'-এর মঙ্গলাচরণেই কবি ভর্তুহরির দার্শনিক দৃষ্টিভঙ্গি প্রকাশ পেয়েছে। বেদান্তদর্শনে যে ব্রক্ষ'র স্বরূপকথনে 'ব্রহ্মসূত্র' রচিত হয়েছে; সেই পরমব্রহ্ম- পরমাত্মা- অনন্ত- সর্বময়- জ্যোতিময় শক্তিকে আত্মনিবেদন পূর্বক কবি ভর্তুহরি শ্রদ্ধাজ্ঞাপন করেছেন মঙ্গলাচরণ শ্লোকের দ্বারা। 'নীতিশতক'-এর শ্লোকগুলিতে দার্শনিক নীতিবিদ্যার প্রভাব লক্ষণীয়। কবি ভর্তুহরি ভারতীয় বিভিন্ন দর্শন সম্প্রদায় যেমন জৈন, বৌদ্ধ, যোগাদি দর্শনের আলোচ্য নীতিবিদ্যার দ্বারা যথার্থ প্রভাবিত। তাছাড়াও, 'নীতিশতক'-এর শ্লোকগুলিতে সুস্পষ্ট লক্ষণীয় কর্মবাদ, জন্মান্তরবাদ, অদৃষ্টবাদ। আবার 'শৃঙ্গারশতক'-এ শৃঙ্গারসাহ্যক যে ভাব কবি ফুটিয়ে তুলেছেন, তাতে চার্বাকদর্শনের বার্হিস্পত্যসূত্রানুসারে "কাম এবৈকঃ পুরুষার্থঃ"- এটিই যেন কবির একমাত্র কাম্য অপরাদিকে, কবি 'বৈরাগ্যশতক'-এ অবস্থ-সারশূন্য এই জগৎ-সংসারের প্রতি বৈরাগ্যচেতনার প্রকট ঘটিয়ে আত্মতত্ত্ব উপলক্ষির স্বরূপ ব্যাখ্যা করেছেন। ভারতীয় দর্শনের মূল লক্ষ্য যে মোক্ষ প্রাপ্তির কথা বিভিন্ন দর্শন সম্প্রদায়ে বিভিন্ন দৃষ্টিভঙ্গিতে উক্ত রয়েছে, সেই মোক্ষ প্রাপ্তি পরম ব্রক্ষে লীন হওয়ার কথাই 'বৈরাগ্যশতক'-এ কবি বলেছেন। ভারতীয় দর্শনের নিরস তাত্ত্বিক বিষয়কে কবি ভর্তুহরি সকলের বোধগম্য সহজলভ্য রূপে সরস কোমলকান্তি কাব্যরূপে এই সমাজের সম্মুখে তুলে ধরেছেন।

**সূচক শব্দঃ** ভর্তুহরি, শতককাব্য, শৃঙ্গারশতক, নীতিশতক, বৈরাগ্যশতক, দার্শনিক, দৃষ্টিভঙ্গি।

## ভূমিকা:

শ্রুপদী সংস্কৃতসাহিত্যে কবি ভর্তুহরি একজন অবিস্মরণীয় ব্যক্তিত্ব। তাঁর লেখনী 'শতকত্রয়ী'-ই তাঁর অভ্যুজ্জ্বল প্রমাণ। কবি ভর্তুহরির জীবন কাহিনী বিভিন্ন কিংবদন্তীর বেড়াজালে আবৃত। কেউ কেউ মনে করেন ব্যাকরণ গ্রন্থ 'বাক্যপদীয়'- র রচয়িতা ভর্তুহরি এবং মহাকাব্য 'ভট্টিকাব্য'-র রচয়িতা মহাকবি ভর্তুহরি বা ভট্টি অভিন্ন ব্যক্তি। কিন্তু এই মতের পরিপ্রেক্ষিতে এমন অনেক যথোপযুক্ত তথ্য পাওয়া যায় , যার ভিত্তিতে এই মত গ্রহণযোগ্য নয় ; এই তিনজন ব্যক্তি এক নয় , তারা প্রত্যেকে ভিন্ন ভিন্ন ব্যক্তি। নামের সাদৃশ্য জনিত কারণে এই তিনজন ব্যক্তিকে একজন ব্যক্তি বলে মনে হলেও তাঁদের রচনাশৈলী , ভাবনা , ভাষা , ব্যাকরণের প্রয়োগ , তাঁদের কালিক ব্যবধান সমস্তকিছুই ভিন্ন ভিন্ন ব্যক্তিত্বকে নির্দেশ করে। তাছাড়া , এই তিনজন ব্যক্তি যে অভিন্ন ব্যক্তি তার যথোপযুক্ত প্রমাণও উপলব্ধি হয়নি। অতএব , 'শতকত্রয়ী'-র রচয়িতা ভর্তুহরি অপর ভর্তুহরি হতে স্বতন্ত্র ব্যক্তি।

## কবি জীবনী:

কবি ভর্তুহরির ব্যক্তি জীবন ও সময়কাল নিয়ে যে সমস্ত কিংবদন্তী লক্ষণীয় তার মধ্যে অন্যতম হল শ্রীষ্টীয় প্রথম বা দ্বিতীয় শতকের উজ্জয়নী নগরীর সুশাসক রাজা গন্ধর্বসেনের পুত্র ছিলেন কবি ভর্তুহরি। রাজা গন্ধর্বসেনের দুই পত্নী ছিলেন, প্রথমা পত্নীর গর্ভজাত পুত্র ছিলেন কবি ভর্তুহরি এবং দ্বিতীয়া পত্নীর গর্ভজাত পুত্র ছিলেন মহারাজ বিক্রমাদিত্য। রাজা গন্ধর্বসেনের মৃত্যুর পর যথারীতি বিভিন্ন ঘটনাবলীর মাধ্যমে জ্যেষ্ঠপুত্র হিসেবে উজ্জয়নীর সিংহাসনের অধিপতি হন কবি ভর্তুহরি এবং ভাই বিক্রমাদিত্য রাজা ভর্তুহরির মন্ত্রী রূপে অবস্থান করেন। এবং যথাযথ রাজকর্মে অবহেলা করে চরম ভোগবিলাসে রত হয়ে রাজা ভর্তুহরি ভাতা তথা নিষ্ঠাবান মন্ত্রী বিক্রমাদিত্যের উপর সমস্ত রাজকর্ম হস্তান্তর করলে ষড়রিপুতে আসক্ত জ্যেষ্ঠ ভাতা ভর্তুহরির প্রতি বিক্রমাদিত্য বিদ্রোহ প্রকাশ করলেন। কিন্তু ষড়রিপুতে আসক্ত ভর্তুহরি এই জগৎ-সংসারের যে কঠিন-নির্দয়-অভুতপূর্ব কঠের কারণ স্বরূপ কঠোর বাস্তবকে উপলব্ধি করলেন এবং এই জগৎ-সংসারের অসারতা উপলব্ধ করেই তিনি রাজধর্ম ত্যাগ করে, বৈরাগ্য জীবনে পদার্পণ করার পূর্বে সমস্ত রাজকর্মভার ভাতা বিক্রমাদিত্যের উপর অর্পন করলেন।

ভর্তুহরির জীবন সম্পর্কিত অপর এক তথ্যও উপলব্ধ হয়। শ্রীগুরুনাথ বিদ্যানিধি 'অমরকোষ' গ্রন্থের ভূমিকায় একটি শ্লোকে বলেছেন - “**রাজা ভর্তুহরিশ্চ বিক্রমনৃপঃ ধ্রুমাত্মজাযামভূতঃ**” ।- এই শ্লোকানুসারে এটিই প্রকটিত হয় যে, মীমাংসা-ভাষ্যকার দ্বিজ শ্রীশবরস্মামী চতুর্বর্ণের স্ত্রী গ্রহণ করেছিলেন এবং ক্ষত্রিয়া স্ত্রীর গর্ভে ভর্তুহরি এবং বিক্রমাদিত্য জন্ম গ্রহণ করেন। এই তথ্যানুসারে ভর্তুহরি শবরস্মামীর পুত্র। কিন্তু এই তথ্য কতোটা সত্য, তা এখনোও যথোপযুক্ত প্রমাণসিদ্ধ হয়নি। উজ্জয়নীতে শিথা নদীর তীরে ভর্তুহরির তপস্যার স্থান 'ভতোরীজী কী গুফা' বর্তমানেও লক্ষণীয়। আলোয়ার রাজ্যের এক গভীর বনে এটির সমাধি বিদ্যমান। এই সমাধির সম্ম দ্বারে একটি অখণ্ড দীপ প্রজ্জলিত থাকে এবং দীপটিকে 'ভর্তুহরির জ্যোতিঃ' বলা হয়। কবির বাল্য-কৈশর-যৌবন-প্রাপ্তবয়স্কের যে পারিবারিক, সামাজিক, জাগতিক এবং আধ্যাত্মিক রূপ কবি স্বয়ং আত্মিক উপলব্ধি করেছিলেন, তার যথাযথ প্রতিফলন এই 'শতকত্রয়ী' কাব্যে সুস্পষ্ট লক্ষণীয়। এই 'শতকত্রয়ী' কাব্য একাধাৰে পাঠকহৃদয়ে রসের

সঞ্চার স্বরূপ রসাত্মককাব্য, সমাজেজোপযোগী নীতি-উপদেশমূলককাব্য, মনস্তত্ত্বমূলককাব্য, দর্শনচিন্তাভূত দার্শনিককাব্য এবং উপনিষদের মূলবানী অধ্যাত্মস্বরূপ আধ্যাত্মিককাব্য। বর্তমানের সামাজিক ও জাগতিক অবস্থান অনুসারে মানবসভ্যতার জীবন পথের পাথেয় স্বরূপ 'শতকএয়ী'-র অনবদ্য অবদান চিরগ্রাহ্য।

কবি ভর্তৃহরি 'বৈরাগ্যশতকে'র প্রারম্ভেই তথা মঙ্গলাচরণে বৈরাগ্যের অধিপতি (প্রতীক) আধ্যাত্মিক স্বরূপ দেবাদিদেব শিবের স্তুতি করেছেন। যেখানে শিবকে যোগীগণের চিত্তে সর্বদা বিরাজমান জ্ঞানস্বরূপ বলে কবি উল্লেখ করেছেন। ভারতীয় দর্শনের বিভিন্ন সম্প্রদায়ে এই জ্ঞানের স্বরূপ যথা বিস্তারিত আলোচিত হয়েছে। বৈরাগ্য সিদ্ধি হেতু পার্থিব ভোগবিলাস অর্থাৎ দৈহিক ও আত্মিক বিষয়াসক্তি দূরীকরণ প্রয়োজন - আর এই বিষয়াসক্তিরূপ দেষ বর্ণিত হয়েছে 'বৈরাগ্যশতকে'র দ্বিতীয় থেকে দশম শ্লোক পর্যন্ত। দশম শ্লোকে কবি ভর্তৃহরি সংসারসুখ - বিষয়ভোগের আশাকে ঘহানন্দীর সঙ্গে তুলনা করেছেন, যে নদীর পরপারে পৌঁছাতে গেলে বিষয়ভোগ পরিত্যাগ করে স্থিরচিত্ত যোগী হওয়ার কথা বলেছেন। জৈনদর্শনের মূল আলোচ্য বিষয় জিন বা তীর্থঙ্কর বা মুক্তপুরূষ - মোহমায়ায় আচ্ছন্ন সংসাররূপ নদী উত্তীর্ণ হয়ে মোক্ষ প্রাপ্ত হওয়া; তা কবি যথার্থই উপলক্ষ্মি করেছিলেন, তার প্রকৃষ্ট প্রমাণ 'বৈরাগ্যশতকে'র দশম শ্লোক। তাই কবি বলেছেন, বিষয়াসক্তি জগৎসংসারকে অতিক্রম করে ব্রহ্মানন্দ প্রাপ্ত হতে পারেন বিষয়াসক্তি রহিত নির্বিকার চিন্ত - বিশুদ্ধ চিন্ত যোগীগণ।

পরবর্তী ১০টি শ্লোকে কবি বিষয় বিরাগ কর্ম যে সহজ নয়, তা তিনি অতি সুন্দর রূপে উপস্থাপন করেছেন। যেমন মানব সমাজ যে কামনা বাসনা লিঙ্গ বিষয় ভোগ সহজে পরিত্যাগ করতে পারে না, কিন্তু ভাগ্যবান যোগীমানুষ বিষয়ভোগে বিরাগ উৎপন্ন করে সচিদানন্দ অনুভব করেন। ১৬ নং শ্লোকে কবি ভোগবিষয়ের প্রতি বিরাগ সৃষ্টি কারণ হেতু ভোগবিষয়ের দোষ প্রদর্শন করেছেন। তবে, ১৭ নং শ্লোকে কবি, এই জগৎ-এর মহামায়া এবং আধ্যাত্মিক দুটি সত্ত্বারই সুন্দর ব্যাখ্যা করেছেন। এই জগৎ-এর সৃষ্টিতত্ত্বের মোহমায়ায় আচ্ছন্ন পুরুষ(আত্মা) সত্ত্বার বিচরণ যেমন মিথ্যা নয়; তেমনি মোহমায়ার অসারত্ত্ব উপলক্ষ্মিকারী 'সোহম্ ব্রহ্ম'- সচিদানন্দের অস্তিত্বও মিথ্যা নয়। ১৭ নং শ্লোকটি তারই প্রকৃষ্ট প্রমাণ। 'বেদান্তসার'-এ যেমন বলা হয়েছে - "অযম্ অধিকারী জননমরণাদিসংসারানলসন্তাপঃ দীপ্তাশিরা জলরাশিমি঵ উপহারপাণি: প্রোত্রিয় ঋহ্নানিষ্ঠং গুরুম্ উপসৃত্য তম্ অনুসরতি"- অর্থাৎ যার মন্তক অগ্নি দ্বারা দহ্যমান, সেই ব্যক্তি যেমন জলরাশির দিকে একাগ্রাচিত্তে ধাবিত হয়, সেইরূপ সংসার অনলে দঞ্চ আত্মার মুক্তির জন্যও বদ্ধ আত্মার মোক্ষেচ্ছা হবে। এবং এই জগৎ-এর মোহাচ্ছন্ন ভোগবিলাসে রত আত্মা যে মরীচিকারূপ দুঃখময়, তা কবি যথার্থই উপলক্ষ্মি করেছেন; তাই তিনি বিষয়ভোগ পরিত্যাগ করে বৈরাগ্যভাবের মধ্য দিয়ে সেই অনন্ত-অবিনশ্বর-অমৃতত্ত্ব ব্রহ্মপ্রাপ্তির কথাই বলেছেন 'বৈরাগ্যশতকে'র শ্লোকগুলিতে। তাছাড়াও বৌদ্ধদর্শনে ভগবান বুদ্ধ উপলক্ষ্মি চতুর্যাস্ত্য-এর যে সারবস্ত কবি ভর্তৃহরি ও উপলক্ষ্মি করেছিলেন, তা যথার্থই ১১নং থেকে ২০নং শ্লোকগুলিতে সুস্পষ্ট লক্ষণীয়।

কবি ভর্তৃহরি নাস্তিক দর্শনসম্পদায় চার্বাক দর্শনের দৃষ্টিভঙ্গিকে যে, তীব্র নিন্দা করেছেন তার প্রমাণ পরবর্তী দশটি শ্ল�কে দৃশ্যমান। চার্বাকদর্শন খণ্ড করে হলেও ঘৃত খাওয়ার নির্দেশ দিয়েছে, দৈহিক-আত্মিক সুখভোগকে প্রাধান্য দিয়েছে; কিন্তু কবি ভর্তৃহরি আত্মসম্মানকে প্রাধান্য দিয়ে যাঞ্চাকর্মের তীব্র নিন্দা করেছেন।

পরবর্তী দশটি শ্লোকে অর্থাৎ ৩১নং থেকে ৪০নং শ্লোকে কবি ভর্তৃহরি সংসারের যাবতীয় বিষয়ভোগের যে অসারতা, অনিত্যতা তা ব্যাখ্যা করে সারসম্পন্ন সচিদানন্দ ব্রহ্মানন্দ সুখ প্রাপ্তির কথাই বলেছেন।

পরবর্তী দশটি শ্লোকে কবি কালের মাহাত্ম্য কীর্তন করেছেন। ভারতীয় দর্শনসম্পদায়ে এই অমোঘ কাল এক বিশেষ আলোচ্য বিষয়। ন্যায়-বৈশেষিক-সাংখ্য-বেদান্তাদি দর্শনে অনন্তকালের যে স্বরূপ ব্যাখ্যা পাওয়া যায়, তার ব্যতিক্রম কবির দৃষ্টিভঙ্গিতে ঘটেনি।

অতঃপর কবি বিষয় ভোগের অসারত ব্যাখ্যা এবং সদানন্দ সারময় অমৃতত্ত্ব প্রাপ্তির মাহাত্ম্য কীর্তন করার পর ৬১-৬০নং শ্লোকে মুমুক্ষুব্যক্তির মাহাত্ম্য কীর্তন করেছেন। বিষয়ভোগ পরিত্যাগকারী স্থিরচিত্ত বৈরাগ্যবানব্যক্তির নিকট ত্রেলোক্যরাজ্যভোগও তৃণবৎ তুচ্ছ জ্ঞান, তা যথার্থই উক্ত শ্লোকগুলিতে প্রকটিত।

কবি পরবর্তী দশটি শ্লোকে চিত্তবৃত্তি নিরোধের কথা বলেছেন। জগৎসংসারের যা কিছু ভোগ্যবিষয়, সেই সমস্ত ভোগ্যবিষয়বস্তু থেকে মনকে নিবারিত করার মাহাত্ম্য কীর্তন করেছেন। যোগদর্শনে চিত্তবৃত্তি নিরোধের উপায় স্বরূপ দার্শনিক পতঞ্জলি অষ্টাঙ্গযোগের যে তাত্ত্বিক ব্যাখ্যা করেছেন, তারই প্রতিচ্ছবি কবি সরস মনোরম সর্বসাধারণগ্রাহ্যরূপে এই শ্লোকগুলির মাধ্যমে প্রকাশ করেছেন। অনিত্য বস্তুর প্রতি চিত্তবিকার ঘটিয়ে নিত্যবস্তুতে চিত্তের স্থিরতাই কাম্য করেছেন।

পরবর্তী দশটি শ্লোকে কবির বৈদানিক ভাবনার প্রভাব লক্ষ্য করা যায়। উপনিষদিক ভাবনায় জগতের যে সারবস্তুর কথা লক্ষণীয়, তার স্বরূপ কথনে সদানন্দ যোগীন্দ্রের 'বেদান্তসার'-এ নিত্যবস্তু-অনিত্যবস্তুর সুবিস্তৃত ব্যাখ্যা পাওয়া যায়। সেই নিত্যবস্তু-অনিত্যবস্তুর যথার্থ বিচার করেছেন কবি উক্ত শ্লোকগুলিতে। কবি যথার্থই উপলক্ষি করেছিলেন যে, মুমুক্ষুব্যক্তি যদি নিত্য-অনিত্য বস্তুর স্বরূপ যথাযথ বিচার না করতে পারেন, তাহলে সেই মুমুক্ষু ব্যক্তির মোক্ষ প্রাপ্তি সম্ভব নয়। তাই তিনি অবিনশ্বর-অনন্ত-সর্বময়-সদানন্দ ব্রহ্মস্বরূপ নিত্যবস্তু এবং অজ্ঞানময়-জড়-সমগ্রজগৎপ্রপঞ্চস্বরূপ অনিত্য বস্তুর লৌকিক ব্যাখ্যা করেছেন। বিশেষতঃ সদানন্দ যোগীন্দ্রের 'বেদান্তসার'-এ সাধন চতুষ্টয়ের মধ্যে প্রথম সাধনটি হল - "নিত্যানিত্যবস্তুবি঵েকঃ"। কারণ একজন মুমুক্ষু ব্যক্তির প্রথম কর্তব্যকর্মই হল - নিত্য এবং অনিত্য বস্তুর ভেদজ্ঞান উপলক্ষি। আর কবি ভর্তৃহরি তাঁর জীবনদর্শনের গতিপথে তা যথার্থই উপলক্ষি করেছিলেন, তারই প্রকৃষ্ট প্রমাণ এই শ্লোকগুলি।

পরবর্তী দশটি শ্লোকে কবির আরাধ্য দেবতা শিবের স্তুতিই পরিলক্ষিত হয়। কবির আরাধ্য দেবতা যে শিব, তার প্রকৃষ্ট প্রমাণ এই কাব্যের মঙ্গলাচরণ। কবি এই দশটি শ্লোকে বৈরাগী-আধ্যাত্মিক-অবিনশ্বর-ব্রহ্মস্বরূপ শিবের মাহাত্ম্য কীর্তন করে স্তুতি করেছেন।

অতঃপর 'বৈরাগ্যশতকে'র অস্তিম দশটি শ্ল�কে কবি সংসারত্যাগী সন্ন্যাসীর চর্চা অর্থাৎ অবধূত-এর চর্চা বা আচার বর্ণনা করেছেন। জগৎসংসারের অসারত্ব উপলক্ষিকারী নির্লিঙ্গ ব্ৰহ্মচারীর আচরণ কবি নিজের জীবনেও উপলক্ষ্মি করেছিলেন, তার যথাযথ প্রকাশ ঘটেছে শেষের এই দশটি শ্লোকে। তাইতো কবি অস্তিম তথ্য  
১০০নং

শ্লোকে

বলেছেন

"যুষ্মসংক্ষিপ্তজাতসুকৃতস্ফুরমির্মলজ্ঞানাপাস্তসমস্তমোহমহিমা লীয়ে  
পরম্ভূম্প্রতি ॥" অর্থাৎ কবি জগৎসংসারের মোহমায়ার বন্ধন থেকে নিরস্তর যোগাভ্যাসের দ্বারা বিমুক্ত হয়ে পরবর্ষে  
লাল হচ্ছেন। ভারতীয় দর্শনের উদ্দেশ্য যে মোক্ষ প্রাপ্তি, সেই মোক্ষ প্রাপ্তির স্বরূপ অনুভব কবির কাব্যিক ভাষায় এক  
অনবদ্য উপস্থাপন।

কবি ভৃত্যরির দৃষ্টিভঙ্গিতে শৃঙ্গার রস উপভোগের পূর্বে নৈতিক আচরণ প্রয়োজন; তাই কবি প্রথমেই  
আনুমানিক ১০৮ টি শ্লোকবিশিষ্ট 'নীতিশতক' রচনা করেন। জগৎসংসারের সৃষ্টিতত্ত্বের ধারা রক্ষা হেতু আদিরসাত্ত্বক  
শৃঙ্গার রসের যে প্রয়োজনীয়তা এই মানবসমাজে রয়েছে, তার রমনীয় কাব্যিক প্রকাশ এই 'শৃঙ্গারশতক'। অতঃপর  
কবি শৃঙ্গার রসের অসারতা উপলক্ষ্মি পূর্বক আনুমানিক ১০০টি শ্লোকবিশিষ্ট 'বৈরাগ্যশতক' রচনা করেন। 'নীতিশতক'র  
মঙ্গলাচরণেই কবির বৈদানিক ভাবনা প্রকাশ পায়। উপনিষদের দৃষ্টিভঙ্গিতে ব্ৰহ্মস্বরূপের যে ব্যাখ্যা পাওয়া যায়, তারই  
কিছুটা প্রকাশস্বরূপ কবি ভৃত্যরি সর্বময়, অবিনশ্বর, অজর, অমর, অবাঞ্ছনোসগোচর, অখণ্ড, পরমবৰ্ষের উদ্দেশ্যে প্রণাম  
নিবেদন করেছেন।

ভারতীয় নীতিশাস্ত্রের দার্শনিক দৃষ্টিভঙ্গির সুপ্রকৃত নির্দেশন 'নীতিশতক'। কবি ভৃত্যরির দৃষ্টিভঙ্গিতে যে  
ভারতীয় নীতিশাস্ত্রের সুগভীর প্রভাব লক্ষ্য করা যায় 'নীতিশতক'র প্রত্যেকটি শ্লোকই তার প্রকৃষ্ট প্রমাণ। ভারতীয়  
নীতিশাস্ত্রের তাত্ত্বিক এবং ব্যবহারিক এই দুটি দিকই 'নীতিশতক'র সামগ্ৰিক দৃষ্টিভঙ্গিতে লক্ষ্যনীয়। 'ন্যায়' কী? 'ভালো'  
কী? 'যথোচিত কৰ্ম' কী? 'নৈতিক পরম আদর্শের'- স্বরূপ কী? - এই সকল প্রশ্নের তাত্ত্বিক আলোচনাই হল ভারতীয়  
নীতিবিদ্যার মূল লক্ষ্য আৱ এই সমস্ত ন্যায়-অন্যায়, সৎ-অসৎ-কৰ্মস্বরূপাদি বিষয়ের যথাযথ প্রকাশ ভূমি হল  
'নীতিশতক'। ভারতীয় নীতিশাস্ত্রের আলোচ্য বিষয় যেমন -সৎকৰ্ম সম্পাদন ও সত্যের আৱাধনার জন্য  
ধৰ্মার্থকামমোক্ষ-চতুর্বর্গের যথাযথ প্রয়োগের নির্দেশ, ইষ্ট-অনিষ্টের চিন্তা না করে স্থিরচিত হয়ে কৰ্ম সম্পাদন, নৈতিক  
জীবনের লক্ষ্য ব্যবহারিক জীবনের বৈত্ব নয়, দৈহিক সুখ-সাচ্ছন্দ্য নয়, আত্মিক পূৰ্ণতা লাভ - মোক্ষপ্রাপ্তি। আৱ এই  
সমস্ত বিষয়ের পুঞ্জানুপুঞ্জ ব্যাখ্যা আমোড়া 'নীতিশতক'র প্রতিটি শ্লোকেই পাই। যেমন - ৩য় - ১৪শ শ্লোকে কবি অবিদ্যা-  
অজ্ঞনের নিন্দাপূর্বক মূৰ্খ ব্যক্তিদের চারিত্রিক বৈশিষ্ট্য তুলে ধরেছেন। কবি উপলক্ষ্মি করেছিলেন জগৎসংসারে দুঃখের  
অন্যতম কারণ অবিদ্যা-অজ্ঞন। আত্যন্তিক দুঃখ নিবৃত্তির জন্য অজ্ঞনের নাশ হেতু জ্ঞানের চর্চা আবশ্যিক। তাই কবি  
'নীতিশতক'র ২য় শ্লোকে বলেছেন, সৎ উপদেশ দাতা এবং গ্ৰহীতা অর্থাৎ হিতকর বাক্যের বক্তা ও শ্রেতা দুইই দুর্ভ  
এই সমাজে। ১৫শ-২১শ শ্লোক, ২৯-৩৯নং শ্লোকে কবি সমাজের বিদ্বান, জ্ঞানী পণ্ডিত ব্যক্তিদের আত্মজ্ঞানের মাহাত্ম্য  
কীৰ্তন করেছেন, বিদ্যা বা জ্ঞানের প্ৰশংসা করেছেন। এমনকি ২৪ নং শ্লোকে ত্ৰিকালজ্ঞ কবির শ্রেষ্ঠত্ব কীৰ্তন  
করেছেন। ২৬নং শ্লোকে সৎ ও সত্য আচরণের কথা বলেছেন কবি। অষ্টাঙ্গযোগের প্রথম অঙ্গ যমের যথাযথ আচরণের

কথা এই শ্লোকে পরিলক্ষিত হয়।মানবজীবন যথোপযুক্ত অতিবাহিত করার জন্য চতুর্বর্গের পারস্পরিক যথাযথ আচরণ কর্তব্য,এই বিষয়টি কবি যথার্থই উপলক্ষ্মি করেছিলেন তার প্রকৃষ্ট প্রমাণ 'নীতিশতক'র ৪০-৪৬ নং শ্লোকে। জীবনযাত্রা যথার্থ নির্বাহ করার জন্য অর্থের যেমন প্রয়োজন,তেমনি তার সৎ ব্যবহারও প্রয়োজন - তা উক্ত শ্লোকগুলিতে উল্লিখিত।যেমন- দানের প্রশংসা,দাতার প্রশংসা ইত্যাদি।৪৪,৫০,৫১ নং শ্লোকগুলিতে অর্থসম্পদের দানের প্রশংসা কীর্তন করা হয়েছে।কবি ৪৭ নং শ্লোকে রাজনীতির স্বরূপ উল্লেখ করে,৪৮ নং শ্লোকে রাজার সৎগুনের অভাবের নিন্দা করেছেন। অর্থাৎ চতুর্বর্গের যথাযথ আচরণ না করলে একজন অসৎ রাজনীতিজ্ঞ রাজাও নিন্দার পাত্র।

কবি অদৃষ্ট বা ভাগ্যকেও অস্বীকার করেননি,তার প্রকৃষ্ট প্রমাণ ৪৯,৮৫,৮৮,৯১,৯৩ নং শ্লোকাদিতে ভাগ্যলিখনের প্রশংসা কীর্তন।কবি ভাগ্যকে স্বীকার করলেও নিজ কর্তব্য কর্মে নিজেকে রত করার কথাও বলেছেন,৮৬,৮৯ নং শ্লোকই তার প্রকৃষ্ট প্রমাণ।৯০ নং শ্লোকে কবি ভাগ্যেরই প্রশংসা করেননি,দুর্ভাগ্যেরও প্রশংসা করেছেন। জীবনযাত্রা নির্বাহের জন্য কর্ম যে অবিচ্ছেদ্য অঙ্গ,তার কবি যথার্থই উপলক্ষ্মি করেছিলেন।কারণ,৯৪-১০২ নং শ্লোকে কর্মের স্তুতি,সৎকর্মের মাহাত্ম্য,প্রারক্ষ কর্ম,কর্মফল,জন্মান্তর ইত্যাদি বিষয়গুলি উল্লিখিত।৬৯ নং শ্লোকে কবি স্থিরচিত্ত হয়ে কর্তব্যকর্মে রত হওয়ার কথা বলেছেন।কবি কেবলমাত্র মুর্খ বা অজ্ঞানী ব্যক্তিদেরই নিন্দা করেননি,বিদ্যার দ্বারা অলঙ্কৃত হয়েও অসৎ-আচরণকারী ব্যক্তিদের নিন্দাপূর্বক সৎ-আচরণকারী ব্যক্তিই কাম্য বলে মনে করছেন কবি।কারণ দুঃখের যা কারণ তা কাম্য নয় কবির চিন্তায়।৫২-৫৯ নং শ্লোকই তার প্রকৃষ্ট প্রমাণ। সৎ-আচরণকারী সজ্জনব্যক্তিই লোকসমাজে কাম্য তা কবি উপলক্ষ্মি করেছিলেন বলেই ৬০-৬৮ নং শ্লোকে সজ্জনব্যক্তির সঙ্গ কামনাপূর্বক সজ্জনব্যক্তির প্রশংসা করেছেন।৭২-৭৬ নং শ্লোকে কবি মহাপুরুষের মাহাত্ম্য কীর্তন করেছেন।৭৯-৭১ নং শ্লোকে বিনয়ী ব্যক্তির প্রশংসা করেছেন।৭৯-৮৪,৮৭,১০৬-১০৮ নং শ্লোকে কবি দয়ালু ও সজ্জন পণ্ডিত ব্যক্তির প্রশংসা কীর্তন করেছেন।এই সজ্জন ও অসজ্জন ব্যক্তির স্বরূপ কথনের মূল হেতু যে সুখ ও দুঃখ - তার স্বরূপ কথন করেছেন কবি ১০৩ নং শ্লোকে।এবং কবি এটিও বলেছেন এই সমাজে সজ্জন ব্যক্তি দুর্বল শুধু তাই নয়,সজ্জন ব্যক্তির পরিণতিও কবি উল্লেখ করেছেন ১০৪ নং শ্লোকে।নীতিবিদ্যার যাবতীয় আলোচনার বিষয়গুলি কবি ভর্তৃহরি 'নীতিশতক'র প্রত্যেকটি রমনীয় শ্লোকেই বর্তমান অতএব সহজেই অনুমেয় ভর্তৃহরি ভারতীয় নীতিশাস্ত্র দ্বারা যথার্থই প্রতিবিত। বিশেষ দ্রষ্টব্য - কবির দার্শনিক চিন্তার সুগভীর প্রকাশ ঘটেছে 'নীতিশতক'র ৯২ নং শ্লোকেই। ভারতীয় দর্শনের যে জীবন জিজ্ঞাসা - তা এই শ্লোকেই উক্ত।কবি বলেছেন - মৃত্যুই যদি অনিবার্য হবে,তাহলে সৃষ্টিকর্তার সৃষ্টি কর্মের কী প্রয়োজন ছিল?

কবি ভর্তৃহরি কৃত শতকব্রয় কাব্যের মধ্যে 'শৃঙ্গারশতক' হল অপর দুই শতক কাব্যের বিপরীত দৃষ্টিভঙ্গির।'নীতিশতক' এবং 'বৈরাগ্যশতক'- এ কবির জীবনদর্শনের যে দৃষ্টিভঙ্গির প্রতিফলন ঘটেছে,সেই দৃষ্টিভঙ্গির সম্পূর্ণ বিপরীত ভাবনার প্রতিফলন লক্ষ্য করা যায় 'নীতিশতক'-এ।'শৃঙ্গারশতক'-এ পরিস্ফুটিত হয়েছে মনুষ্যজীবনের প্রেম,আদিরস শৃঙ্গার -এর রমনীয় মাধুর্যের প্রশংসাই পরিলক্ষিত হয়।এই শতককাব্যের পরিপ্রেক্ষিতে কবির দার্শনিক দৃষ্টিভঙ্গির প্রকাশ না ঘটলেও কবির দার্শনিক চিন্তনের বিকাশে যথেষ্ট গুরুত্ব রয়েছে।তার প্রকৃষ্ট প্রমাণ 'নীতিশতক'র ২য় শ্লোক(মতান্তরে গৃহীত) - "যাঃ চিন্তয়ামি সততং ময়ি সা বিরক্তা...." ইত্যাদি শ্লোকের মধ্য দিয়েই বোঝা যায় যে,কবি বাস্তব জীবনের কঠিন অভিজ্ঞতাকে অবলম্বন করে ত্রুমাস্থে শৃঙ্গার -নীতি-বৈরাগ্যের পথ অতিক্রম করেছেন।

চার্বাক দর্শনের চিন্তা ভাবনা কবির এই কাব্যে উপেক্ষিত হয়নি। চার্বাক দর্শন তথা লোকায়ত দর্শনে সাধারণ মানুষের দৈহিক-মানসিক যথেচ্ছ সুখ ভোগের কথা বলা হয়েছে। এই দর্শনের দৃষ্টিভঙ্গিতে শম-দমাদি শারীরিক-মানসিক কৃচ্ছসাধন অপেক্ষা আরাম-আয়াশরূপ শারীরিক-মানসিক সুখই শ্রেয়। কবি চার্বাক দর্শনের ভাবনাকে উপেক্ষা না করে, সেটি গ্রহণপূর্বক মানবজীবনে যে তারও প্রয়োজনীয়তা আছে, তার কবি উপলক্ষ্মি করেছিলেন। তাই কবি 'শৃঙ্গারশতক'র মধ্যে দিয়ে চার্বাক দর্শনের ভাবনাকে শ্রদ্ধাঞ্জাপন করেছেন। তবে জগৎসংসারের সারবস্তুতে চার্বাক দর্শনের ভাবনার স্থায়িত্ব যে ক্ষুম্ভ, সেটিও কবি উপলক্ষ্মি করেছিলেন। আর তার ফলস্বরূপই হল 'নীতিশতক' এবং 'বৈরাগ্যশতক'। অতএব যথার্থই বলা যায়, কবি ভর্তৃহরি একজন বিশিষ্ট দার্শনিক চিন্তাভাবনা সম্পর্ক ব্যক্তি ছিলেন; 'শতকত্রয়ী' - ই তার যথার্থ প্রমাণ।

ভারতীয় দর্শনের মূল হেতু যে জীবন জিজ্ঞাসা, এই জগৎ-সংসারের জাগতিক দুঃখের কারণ উদ�াটন এবং সেই দুঃখের আত্মস্তিক নিরুত্তির ঘটিয়ে সচিদানন্দে উপনীত হওয়া অর্থাৎ মুক্তিলাভ-মোক্ষলাভ। এই একই বিষয় কবি ভর্তৃহরির কিংবদন্তী লক্ষ কঠিন বাস্তব জীবনকাহিনীর যে চিত্রপট কবি স্বয়ং স্বচিন্তে উপলক্ষ্মি করেছেন, জীবনের সেই চিত্রপট সংসাররূপ অনলে প্রতিনিয়ত দম্প্ত হয়ে চিত্রের সংক্ষার ঘটিয়ে চিত্রবৃত্তিনিরূত্পূর্বক পরমানন্দ ব্রক্ষতত্ত্ব লাভ করেছিলেন। তাই যথার্থই কবির দার্শনিক চিন্তার বিকাশ তাঁর রচনায় প্রকটিত। তিনি তাঁর দার্শনিক ভাবনা, এই জগৎসংসারের রহস্যে ঘেরা জটিল তত্ত্ব কোনো তাত্ত্বিক ভাষায় প্রকাশ করেননি; মানবসভ্যতার বিনোদনের এক অন্যতম মাধ্যম রমনীয় কাব্যরূপে কবি তাঁর অমূল্য দার্শনিক ভাবনা এই সমাজকে উপহার দিয়েছেন। তিনি যে একাধারে কবি, দার্শনিক পণ্ডিত ব্যক্তি রূপে প্রজ্ঞালিত, তা যথার্থই প্রশংশনীয়।

## নির্বাচিত গ্রন্থপঞ্জি

১. স্বামী, ধীরেশানন্দ; বৈরাগ্যশতক। কলকাতা: উদ্বোধন কার্যালয় ২০২২।

২. বন্দোপাধ্যায়, অধ্যাপক ড. উদয়চন্দ্র; বন্দোপাধ্যায়, ড. অনীতা; নীতিশতকম্। কলকাতা: সংস্কৃত বুক ডিপো ২০১৮।

৩. মহাবলোপাহৰকষণশাস্ত্রী; শৃঙ্গারশতকম্। মুম্বাই(বোম্বে) পাঞ্চুরঙ্গ জাবজী ১৯২৬।

৪. বাগচী, দীপক কুমার; ভারতীয় দর্শন। কলকাতা: প্রগতিশীল প্রকাশক ২০১০।

৫. বসু, ড. সুমিতা; ভারতীয় দর্শন সমীক্ষা। কলকাতা: সদেশ ২০১১।

৬. ভট্টাচার্য, সমরেন্দ্র; সাম্মানিক নীতিবিদ্যা। কলকাতা: বুক সিঙ্গিকেট প্রাইভেট লিমিটেড ২০১১।

৭. পাল, বিপদভজ্জন; বেদান্তসার। কলকাতা : সংস্কৃত পুস্তক ভাণ্ডার ১৪২০।

৮. স্বামী ভাবঘনানন্দ; সাংখ্যকারিকা। কলকাতা : উদ্বোধন কার্যালয় ২০১৬।

৯. বন্দোপাধ্যায়, ধীরেন্দ্রনাথ; সংস্কৃত সাহিত্যের ইতিহাস। কলকাতা : পশ্চিমবঙ্গ রাজ্য পুস্তক পর্যবেক্ষণ ২০১২।

১০. ত্রিপাঠী, অধ্যাপক যদুপতি; ভট্টাচার্য, জনেশ্বরঞ্জন; সাম্মানিক সংস্কৃত বর্তিকা। কলকাতা: বি.এন.পাবলিকেশন ২০১৮।

১১. সেন, অতুলচন্দ্র; তত্ত্বজ্ঞান, সীতানাথ; ঘোষ, মহেশচন্দ্র; উপনিষদ্। কলকাতা : হরফ প্রকাশনী ২০১৫।

১২. স্বামী রঞ্জনাথানন্দ; উপনিষদের সন্দেশ। কলকাতা : উদ্বোধন কার্যালয় ২০১৭।

১৩. গোস্বামী, শ্রী নারায়ণ চন্দ্র; সাংখ্যতত্ত্বকৌমুদী। কলকাতা : সংস্কৃত পুস্তক ভাণ্ডার ১৪১৮।

## Depicting Elephants in the Tapestry of Indian Sculptural History

Arijit Kundu

Panchthupi Haripada Gouribala College, Panchthupi, Murshidabad.

### **Abstract:**

Sculptures served not only to embellish representations of humans and deities but also incorporated depictions of diverse animals. Contemporary research on animals underscores their significance in human society. In light of this, the present article centers on the specific exploration of elephants in the context of Indian architecture and sculptures. Elephants functioned as formidable assets in battle, symbolizing both royal authority and prosperity. Mythologically, they played diverse roles, from celestial mounts to embodiments of wisdom and devotion. Through sculptures across historical sites of India, their cultural and religious significance is vividly portrayed. From the ancient Indus Valley Civilization to the medieval and modern eras, elephants have left an enduring imprint on Indian art and architecture. This exploration underscores the imperative to invest in animal history studies, recognizing the profound influence of animals in shaping the narrative of human civilization.

### **Introduction:**

Sculptures served not only to embellish representations of humans and deities but also incorporated depictions of diverse animals. Recent developments in interdisciplinary research have brought forth a notable shift towards the field of 'animal studies,' accentuating the significance of non-human entities in historical narratives. This paradigm seeks to broaden our understanding of history by acknowledging the integral role of animals. In this article, the focus is directed towards elucidating the importance of an animal species - elephants within the realms of Indian history, particularly exploring their influence in mythological narratives and architectural undertakings.

### **Role of Elephants:**

Throughout history, elephants have played multifaceted roles in human society, showcasing their versatility and significance across various domains. Emiliano Anguirre mentioned that "Elephants, which are among the most popular and decorative of animals, stand as a witness of prehistory."<sup>1</sup> In the context of warfare, elephants served as 'living tanks', which "able to crush anything below their feet."<sup>2</sup> Their sheer size and strength made them invaluable assets in times of conflict, carrying warriors and weaponry with imposing grandeur. Beyond the battlefield, elephants became symbols of royalty and power, often serving as mounts for chiefs and kings. Their presence elevated the status of rulers, emphasizing strength and authority. As working animals, elephants undertook crucial tasks, from transporting heavy tree logs to carrying guns in military operations and

contributing to the transportation system. The utility extended to the ivory of elephants, a valuable resource employed for various purposes. In the realm of hunting, elephants were companions, functioning as elevated shooting towers for maharajas, showcasing the intertwined relationship between humans and these majestic creatures. For their various roles in human society, from ancient period, in the realms of art and architecture, elephants became integral components, depicted in temples and various forms as symbolic gatekeepers. Rock-cut sculptures adorned with elephant motifs exemplify the cultural and religious significance attributed to these magnificent animals. The profound interconnection between elephants and human civilization has left an indelible mark on history, highlighting their

enduring role in shaping diverse facets of human life.

### **Elephant in Mythology:**

In the tapestry of Indian mythology, elephants emerge as revered and multifaceted beings, embodying profound symbolism and cosmic significance. At the forefront is Airavata, the white elephant born from the ocean.<sup>3</sup> Indra, the king of gods, finds a celestial companion in Airavata, whose purity and strength make him the ideal mount for the ruler of the heavens. For this reason historian Alexandra claimed that "the elephant was a symbol of rain."<sup>4</sup> Beyond the celestial realm, the elephant takes on a transformative role in the story of

Before his enlightened human existence, Buddha is said to have been born as an elephant, symbolizing the inherent wisdom and compassion that would later define his teachings. In the Saddanta Jataka story, an elephant assumes the role of a Bodhisatta, embodying the pursuit of enlightenment. This narrative beautifully intertwines moral lessons with the natural world, emphasizing the interconnectedness of all living beings. The elephant's devotion is also evident in tales where they serve as dedicated followers of Vishnu, a prominent deity within the Hindu pantheon. Their presence symbolizes loyalty and service in the divine realm. Ganesha, the beloved remover of obstacles, stands as a unique fusion of human and elephant attributes. With an elephant head, Ganesha symbolizes intelligence, strength, and the ability to overcome challenges, making him a widely revered deity. Matangi, a mother goddess, is often depicted riding gracefully on the back of an elephant. This representation highlights the harmonious connection between the divine and these majestic creatures. Gaja-Lakshmi, the goddess of wealth, undergoes a ritualistic bathing by two or four elephants in certain depictions. This act symbolizes abundance and prosperity, reinforcing the elephant's association with positive attributes. In the grandeur of Indian cosmology, colossal elephants guard each of the eight

cardinal directions, contributing to the cosmic order and balance envisioned in the mythology.

### **Elephants in Sculptures:**

The Mohenjodaro seal, dating back to the ancient Indus Valley Civilization, features an intricately carved elephant motif. Scholars suggest that this motif may represent the cultural and religious significance attached to elephants in that era. The meticulous craftsmanship of the seal raises questions about the role of elephants in the daily life and belief systems of the people of Mohenjodaro.

Moving forward in time, we encounter the Dream of Queen Maya, a pivotal moment in the life of Siddhartha Gautama, who later became the Buddha. Sculptures related to this dream, found in various regions such as Bharut in Madhya Pradesh, Greater Gandhara (specifically Sikri in Pakistan), Amaravati and Nagarjunakonda in Andhra Pradesh, and Sarnath in Madhya Pradesh, depict elephants with distinct characteristics. The Bharut medallion portrays a large adult elephant with intricately detailed features, including a curled inward trunk.<sup>5</sup> This symbolism suggests a nuanced representation, possibly signifying the protective and nurturing nature associated with elephants in Indian culture. Similarly, the smaller elephant sculptures in Greater Gandhara may indicate a diverse range of symbolic meanings attributed to elephants, such as strength, loyalty, and auspiciousness.

In Sanchi Stupa, elephants playfully interact with lotus ponds, with one elephant curling its trunk around a large lotus, showcasing a harmonious connection between the majestic animals and serene nature.<sup>6</sup> Rani Gumpha in Bhubaneswar, Orissa, continues this theme, portraying elephants within lotus pond settings, symbolizing a peaceful coexistence and balance between their power and the purity of lotus flowers. At Mamallapuram in Tamil Nadu, sculptures depict elephants standing by the riverbank, connecting them with the water element, creating a contemplative

scene that highlights the intelligence and serenity of these revered creatures in a natural setting. These sculptures collectively celebrate the beauty of nature and the cultural significance of elephants in Indian art.

Gaja-Lakshmi, the goddess of fortune, is elegantly depicted in various sculptures being bathed by two elephants, symbolizing prosperity and abundance. One of the earliest representation of Gaja-Lakshmi in Indian art was found from a torana architecture of Kausambi, where elephant "bathing the goddess with water from long-necked jar held in its trunk."<sup>7</sup> Other notable examples include the intricate sculptures at Pitalkhora in Maharashtra, the four gates of Sanchi Stupa in Madhya Pradesh, Bharut in Madhya Pradesh, the railing pillar 91 of Mahabodhi Temple, the Vishnu Temple in Deoghar, Madhya Pradesh, and Badami in Aihole, Karnataka. These artworks collectively portray the divine imagery of Gaja Lakshmi, surrounded by elephants in acts of adoration, embodying the auspicious attributes associated with wealth and divine blessings.

War elephants make powerful appearances in sculptures, such as in Mara's Army disrupting the Buddha's meditation, as depicted in the Great Stupa of Sanchi, Madhya Pradesh.<sup>8</sup> Another vivid representation is found at the Sun Temple in Konark and the Chandela Temple of Khajuraho, Madhya Pradesh, where war elephants are portrayed squeezing enemies with their trunks or crushing them under a leg. These sculptures not only showcase the artistic prowess of the time but also capture the symbolic significance of war elephants as formidable forces in ancient battles, embodying strength and authority.

The inclusion of elephants in royal gates became a prominent style from the 13th century onward, reflecting power and grandeur.<sup>9</sup> Notable examples include the Delhi Gate of the Red Fort in Old Delhi, the Rashtrapati Bhavan (formerly Viceroy's House), the Orchha Fort, Jaipur

Fort in Rajasthan, and static elephant statues outside Konark in Orissa. In Ochhra, "the doorway-gurdians stand in slender pavilion on either side. One of the Elephant carries a lotus, and the other, a bell."<sup>10</sup> This stylistic choice symbolizes strength, majesty, and royal authority, contributing to the architectural and artistic legacy of these historical structures in India.

The sculptural depictions of elephants as a means of transport are evident in historical examples such as Kankali Tila in Mathura, Madhya Pradesh, dating back to the 1st to 3rd century. Another notable instance is found in Luna Vasali, Mount Abu, Gujarat, in the year 1232. These sculptures not only showcase the artistic craftsmanship of their respective periods but also capture the practical and regal use of elephants as a mode of transportation in ancient India.

The elephant-headed deity Ganesha finds numerous depictions in sculptures dating back to the 4th century.<sup>11</sup> Among the earliest examples are found in Sankisha, Fatehgarh, Uttar Pradesh. Additionally, Ganesha is portrayed in the Dasharata Temple at Deoghar, Madhya Pradesh, showcasing the enduring popularity and significance of this beloved Hindu deity across various historical and artistic contexts.

The captivating theme of Gajasimha, depicting a fierce battle between an elephant and a lion, is vividly showcased in sculptures at notable sites. One such example is found at the Kailashnath Temple in Ellora, where intricate carvings depict the intense struggle between these powerful creatures. Additionally, the theme is echoed in sculptures at Konark, Orissa, adding to the rich artistic heritage of these historical sites and illustrating the symbolic significance of such confrontations in Indian art.

**Conclusion:** The exploration of elephants in Indian sculpture unveils a rich tapestry of cultural and artistic significance. From symbolic constructs to

---

revered guardians, these majestic creatures transcend mere representation, embodying intricate narratives within the country's sculptural heritage. This comprehensive examination illuminates the profound role of elephants in shaping India's sculptural narrative. Thus this article underscores the necessity of investing in the study of animal history, recognizing animals as consequential actors in the historical tapestry.

**Brief Introduction of Author:** The author is Assistant Professor of History at Panchthupi Haripada Gouribala College, Panchthupi, Murshidabad. He is currently engaged in a PhD programme at Visva Bharati, with a keen focus on the realms of animal history, environmental history and the history of medicine.

#### **Endnote:**

---

<sup>1</sup> Anguiree, Emiliano, 'Evolutionary History of the Elephant', in *Science*, Jun, 20, 1969, New Series, Vol. 164, No. 3886, p. 1336.

<sup>2</sup> Geer, Alexander van der, *Animals in Stone: Indian Mammals Sculptured Through Times*, Brilliant, Leiden, 2008, p. 192.

<sup>3</sup> Gupta, S. K, *Elephant in Indian Art and Mythology*, Abhinav Publication, 1983, p. 3.

<sup>4</sup> Geer, op. cit., p. 195.

<sup>5</sup> Geer, op. cit., p. 198.

<sup>6</sup> Geer, op. cit., p. 200.

<sup>7</sup> Bangdel, Lain Singh, *An Early Sculptured of Gaja-Laksmi frpm Patan*. In  
[https://himalaya.socanth.cam.ac.uk/collections/journals/ancientnepal/pdf/ancient\\_nepal\\_59-60\\_05.pdf](https://himalaya.socanth.cam.ac.uk/collections/journals/ancientnepal/pdf/ancient_nepal_59-60_05.pdf) accessed on 11/02/2024.

<sup>8</sup> Geer, op. cit., p. 210.

<sup>9</sup> Geer, op. cit., p. 212.

<sup>10</sup> Ram Vikramjit, *Elephant Kingdom: Sculpture from Indian Architecture*, Mapin Publishing Pvt. Ltd., 2007, p. 93.

<sup>11</sup> Geer, op. cit., p. 218.

## Naguib Mahfouz: The Father of Arabic Literature

Sher Shah  
SACT (State Aided College Teacher)  
Dept. Of Arabic  
Nagar College  
Nagar, Murshidabad  
Gmail: shershah.pcc@gmail.com

### **Abstract:**

This research paper explores the life, literary career, themes, and legacy of Naguib Mahfouz, widely recognized as the "Father of Arabic Literature." Born in Cairo, Egypt, in 1911, Mahfouz's upbringing in a culturally rich environment laid the foundation for his deep understanding of Egyptian society, which he portrayed in his works with profound insight and empathy. His literary career, spanning over seven decades, produced a prolific body of work, including novels, short stories, essays, and screenplays. Mahfouz's most acclaimed work, the Cairo Trilogy, exemplifies his exploration of themes such as family dynamics, tradition, and societal change. His unique style, characterized by richly developed characters and intricate plots, transcends cultural boundaries, resonating with readers worldwide. Mahfouz's contributions to literature were recognized with numerous awards, including the Nobel Prize in Literature in 1988, solidifying his legacy as one of the most influential writers of the 20th century. His profound insights and unwavering commitment to truth continue to inspire generations of writers and readers globally.

**Keywords:** Naguib Mahfouz, Arabic literature, Cairo Trilogy, Nobel Prize in Literature, literary legacy

### **Introduction:**

Naguib Mahfouz is widely regarded as the preeminent figure in Arabic literature, his contributions to the literary world spanning over seven decades. Born on December 11, 1911, in Cairo, Egypt, Mahfouz's literary works have left an indelible mark on the cultural landscape of the Arab world and beyond. This research paper delves into Mahfouz's early life, education, literary career, thematic exploration, and enduring legacy, shedding light on his profound impact on literature and society.

### **Early life and Education:**

Naguib Mahfouz, an iconic figure in Arab literature, achieved the remarkable feat of winning the Nobel Prize for Literature in 1988, a testament to his profound impact on the literary landscape. As the sole Arab recipient of this esteemed award, Mahfouz solidified his status as one of the most influential figures in Arabic literature, transcending borders to earn recognition as one of the world's foremost literary minds.

Born on December 11, 1911, in Cairo, Egypt's Al-Jamaliyya district, Mahfouz embarked on his literary journey in his homeland. Despite his family's relocation to the Al-Abbasiya district when he was 13, Mahfouz's deep connection to Cairo persisted, eventually leading him back to the historic neighborhood of Al-Azhar.

From a young age, Mahfouz displayed a fervent passion for philosophy and literature, which blossomed during his years at Cairo University, where he graduated with a Bachelor's degree in 1934. Alongside his academic pursuits, Mahfouz immersed himself in the works of English and French literature, which profoundly influenced his writing style. Even as a university student, Mahfouz began crafting historical short stories, laying the groundwork for his illustrious literary career.

Mahfouz's literary journey officially commenced with the publication of his debut novel in 1939. Although initially overlooked, his talent soon garnered widespread acclaim, capturing the attention of critics and readers alike. Reflecting on the beginnings of his writing career in a rare interview with Paris Review, Mahfouz fondly recalled the unexpected publication of his story "Aba al-Aqdar" in 1939 as a defining moment in his life.

By the time of the organized uprising in Egypt in July 1952, Mahfouz had already published nearly ten books, with his writing playing a pivotal role during the revolution, earning him a prominent place in Egyptian literature. Despite temporarily halting his literary output after 1952, Mahfouz's magnum opus, the Cairo Trilogy, published in 1957,

catapulted him to international acclaim. With a literary repertoire boasting 34 novels, over 350 short stories, and numerous plays, many of which have been adapted into films, Mahfouz's enduring legacy continues to captivate audiences in Egypt and beyond.

### **Naguib Mahfouz: A Literary Luminary in the Arab World:**

Naguib Mahfouz, the eminent Arab novelist, was a prolific writer who penned several dozen short stories in the first decade of his literary journey, many of which delved into the various dark corners of urban life, drawing directly from his own experiences. Consequently, he swiftly carved a niche in readers' hearts. The novels he published between 1945 and 1957 are generally considered realist in nature. Notable among these novels are "Midaq Alley," "Miramar," "Beginning and End," and the "Cairo Trilogy." His 1959 novel, "Children of Gebelawi," marked a significant shift in his writing, exploring socio-political themes in a more symbolic and allegorical manner. During this period, Mahfouz began to address philosophical and intricate psychological subjects in his writing. "Children of Gebelawi" remains both celebrated and controversial, yet it has not been published in his native Egypt to this day.

#### **Famous Novel and short stories Name list:**

##### **(Novel): روايات**

- (روايات) (1939 – 1944):  
"عثت الأقدار" (1939) - "The Trilogy of Fate"  
"رادوبيس" (1943) - "Rhadopis"  
"كفاح طيبة" (1944) - "The Struggle of Thebes"  
"(القاهرة الجديدة)" (1945) - "The New Cairo"  
"(خان الخليبي)" (1946) - "Khan al-Khalili"  
"(السراب)" (1948) - "The Mirage"  
"(بداية ونهاية)" (1949) - "The Beginning and The End"  
"(ثلاثية القاهرة)" (1956 – 1957):  
"بين القصرين" (1956) - "Palace Walk"  
"قصر الشوق" (1957) - "Palace of Desire"  
"(السكنية)" (1957) - "Sugar Street"  
"(اللص والكلاب)" (1961) - "The Thief and the Dogs"  
"(السمان والخريف)" (1962) - "The Sparrow and Autumn"  
"(الطريق)" (1964) - "The Journey of Ibn Fattouma"  
"(الشحاذ)" (1965) - "Respected Sir"  
"(تراث فوق النيل)" (1966) - "Echoes of an Autobiography"  
"(مير امار)" (1967) - "Miramar"  
"(أولاد حارتنا)" (1968) - "Children of Gebelawi"  
"(المرايا)" (1972) - "The Mirror"  
"(حب تحت المطر)" (1973) - "Love in the Rain"  
"(عصر الحب)" (1980) - "The Age of Love"  
"(أغراح القبة)" (1981) - "Wedding Song"  
"(ليالي ألف ليلة)" (1982) - "Arabian Nights and Days"  
"(الباقي من الزمن ساعة)" (1982) - "The Remaining Time is an Hour"  
"(أمام العرش)" (1983) - "Before the Throne"  
"(فشتمن)" (1988) - "Khan al-Khalili"

##### **(short stories): قصبة القصيرة**

- (همس النجوم) (Whisper of the Stars)\* (1938)  
(دنيا الله) (Allah's World)\* (1962)  
(بيت سيسي: السمعة) (House of Notoriety)\* (1965)  
(خمارة القط الأسود) (The Kiosk of the Black Cat)\* (1969)  
(تحت المظلة) (Under the Umbrella)\* (1969)  
(حكاية بلا بداية وبلا نهاية) (A Tale with No Beginning and No End)\* (1971)  
(شهر العسل) (The Honeymoon)\* (1971)  
(الجريمة) (The Crime)\* (1973)  
(الحب فوق هضبة الهرم) (Love on the Pyramids Plateau)\* (1979)  
(الشيطان يعظ) (The Devil Preaches)\* (1979)

(رأيت فيما يرى النائم) (I Saw What the Sleeper Saw)\* (1982)  
صباح الورد (Morning of the Rose)\* (1987)  
النهر الكاذب (False Dawn)\* (1988)  
صدى النسيان (Echo of Oblivion)\* (1999)  
فتوة العطوف (The Tender Spot)\* (2001)  
أحلام فترة النقاذه (Dreams of Rest Period)\* (2004)

In 1967, his first novel to be published in book form was released, having initially appeared in serialized form in Lebanon. In 1981, Philip Stewart translated the novel from Arabic to English. Other notable novels published during this time include "The Thief and the Dogs," "Zodiac," "The Beggar," and "Miramar."

Mahfouz gained widespread acclaim in both Egypt and internationally for his monumental work, the "Cairo Trilogy." This sprawling epic consists of three separate volumes: "Palace Walk," "Palace of Desire," and "Sugar Street," each named after streets in Mahfouz's childhood neighborhood of Al-Jamaliyya. Some have dubbed this trilogy the "War and Peace" of Arabic literature. For his monumental work, Mahfouz received Egypt's highest literary honor, the State Prize for Literature, in 1957.

Before Mahfouz, no other Arab author had achieved such popularity with novels in the Arabic language. Kabbir Chowdhury, in his book "World Literature: Nine Gems," writes extensively on Mahfouz's writing and distinctive style, noting that the narrative forms prevalent before Mahfouz in Arabic literature differ significantly from the modern novel form. Edward Said's analysis identifies these forms as qissa, sura, hadith, khurafa, khabar, nadira, and maqama. None of these forms corresponds directly to the modern novel form. Mahfouz, influenced by Western literature, particularly the works of Flaubert, Balzac, Zola, Camus, Tolstoy, and Dostoevsky, owed a great debt to these writers. He had read all of them extensively in French. Apart from these, the one Western writer who had an immense influence on him was Marcel Proust. Mahfouz was profoundly affected by Proust's monumental literary work, "Remembrance of Things Past." This novel had a profound impact on Mahfouz's understanding of the passage of time, which, in turn, influenced several of his works. In almost all his novels, Mahfouz assigns a significant role to time. His characters are always preoccupied with time. We find ample evidence of this preoccupation in the following lines:

"Time is a terrifying companion."  
"What has time done to my friend? It has veiled his face with a terrifying mask!"

In "The Beggar," we witness how time metamorphoses in a terrifying manner. Love is transformed into hatred, beauty turns into ugliness, trust and loyalty give way to betrayal. Even in the household where Abbas grows up, we see signs of this transformation.

"The Beggar" mirrors the themes prevalent in Mahfouz's other novels, serving as a mirror to the times and the characters of that era. His intent was not to describe his characters in a straightforward manner. He focused more on their internal struggles—their despair, frustration, and torment. To achieve this purpose, he employed stream-of-consciousness narration, the technique of interior monologue, and interior monologue. Each main character in this novel speaks for themselves, provides their own interpretation of events, and thus constructs their own drama from the raw material of life.

Naguib Mahfouz remained unmarried until the age of 43. He harbored concerns that marriage and family responsibilities would interfere with his writing. However, in 1954, he married Atiyyatallah Ibrahim, and they had two daughters. Nevertheless, he remained intensely private and preferred solitude. In an interview with Paris Review, he stated: "I never want to attend dinner parties or receptions. I don't even like to visit my friends' homes. I prefer to see them at the casino, Ksar El Nil, or at a coffeehouse."

Until 1972, Naguib Mahfouz held government positions. He initially worked in the Ministry of Endowments, followed by positions at the Bureau of Arts' censorship and the Foundation for the Support of Cinema. Lastly, he served as an advisor in the Cultural Affairs Department of the Ministry of Culture. After retiring, he

devoted himself entirely to writing. In 1972, he moved to an apartment in Agouza. Here he lived for the rest of his life, surrounded by books, family photographs, and his awards.

Naguib Mahfouz's life was marked by both triumphs and tribulations. In 1994, he won the Nobel Prize in Literature, becoming the first Arabic-language writer to receive the prestigious accolade. Despite his monumental literary achievements, Mahfouz's later years were marred by tragedy. In 1994, he was the target of an assassination attempt by Islamic extremists who objected to his novel "Children of Gebelawi." Although he survived the attack, he was left partially paralyzed, confining him to a wheelchair. Despite his physical limitations, Mahfouz continued to write until his death in 2006 at the age of 94.

Naguib Mahfouz's legacy endures as a testament to his unparalleled literary talent and unwavering commitment to exploring the human condition through his writing. His works continue to resonate with readers around the world, offering profound insights into the complexities of life, society, and the human psyche.

### **Themes and Style:**

Naguib Mahfouz's stories are like big, beautiful quilts made up of many different pieces. Each piece is a character or a plotline, and when you put them all together, you get a vivid picture of life in Cairo, Egypt. Cairo is a busy city with lots of things happening, and Mahfouz captures all the details—the sounds, the smells, the sights in his stories. One thing that makes Mahfouz's writing special is how well he understands people. He can get inside their heads and hearts to show us what they're feeling and thinking. This makes his stories really interesting because we can relate to the characters, no matter where we're from. Whether it's a young boy navigating the streets of Cairo or an old woman reminiscing about the past, Mahfouz's characters feel real and alive.

### **Recognition and Legacy:**

Naguib Mahfouz was really good at writing, and he got a bunch of awards for it. One of the biggest ones was the Nobel Prize in Literature, which he won in 1988. This was a huge deal because he was the first writer from the Arab world to ever win it. Even though he's not around anymore, people still love his stories. They've been translated into lots of different languages, and you can even study them in universities all over the world. That's how important his writing is!

### **Conclusion:**

Naguib Mahfouz is known as the "Father of Arabic Literature" because of how important his writing is. His stories show us that no matter where we're from, we all share similar experiences and feelings. His writing is so good that it will keep inspiring writers and readers for a long time.

### **References:**

- Allen, Roger. "The Arabic Novel: An Historical and Critical Introduction." Syracuse University Press, 1982.
- Mahfouz, Naguib. "Palace Walk." Anchor, 1990.
- Mahfouz, Naguib. "Palace of Desire." Anchor, 1991.
- Mahfouz, Naguib. "Sugar Street." Anchor, 1992.
- Mahfouz, Naguib. "Whispers of the Stars." Dar Al Maaref, 1939.
- Nobel Prize. "Naguib Mahfouz - Biographical." NobelPrize.org, Nobel Prize Outreach AB, 2022, Ahmad Hasan Az Zayyat "Tarikhul Adabul Arabi"  
[www.nobelprize.org/prizes/literature/1988/mahfouz/biographical/](http://www.nobelprize.org/prizes/literature/1988/mahfouz/biographical/).
- [https://ar.m.wikipedia.org/wiki/%D9%86%D8%AC%D9%8A%D8%A8\\_%D9%85%D8%AD%D9%81%D9%88%D8%B8](https://ar.m.wikipedia.org/wiki/%D9%86%D8%AC%D9%8A%D8%A8_%D9%85%D8%AD%D9%81%D9%88%D8%B8)
- <https://roar.media/bangla/main/biography/naguib-mahfuz-nobel-laureate-is-the-first-arab-novelist>

## **The Rise and Evolution of the World of Islam: A Historical Analysis**

Sher Shah  
SACT (State Aided College  
Teacher) Dept. Of Arabic  
Nagar College  
Nagar,  
Murshidabad  
Gmail: shershah.pcc@gmail.com

### **Abstract:**

This research paper delves into the inception and development of the World of Islam, tracing its roots to the early 7th century. The emergence of the World of Islam is intricately connected to the divine guidance imparted by messengers and prophets such as Hazrat Ibrahim (AS), Hazrat Moosa (AS), Hazrat Dawood (AS), and Hazrat Isa (AS). These revered figures played a pivotal role in propagating the fundamental tenets of Islam, emphasizing the oneness of Allah and discouraging the attribution of equality or superiority to any entity other than Him. Notably, the final messenger chosen to disseminate the message of Islam was Prophet Muhammad (PBUH).

**Keywords:** The Rise and Evolution, The Rise and Evolution of the World of Islam, The Beginning of Islam, The Tenets and Perspective of Islam, The Five Pillars of Islam Explained, The Spread of Islam, The Rise and Fall of the Ottoman Empire, The Splendors and Legacy of the Safavid Empire,

### **Introduction:**

The World of Islam, as a socio-religious entity, found its genesis in the early 7th century through divine revelations and the teachings of various messengers and prophets. This paper aims to provide a comprehensive historical analysis of the rise and evolution of the World of Islam, shedding light on the crucial role played by divine messengers in its establishment.

### **The Beginning of Islam:**

Long ago, in the hot and dry lands of Arabia, Islam started. In those days, people in Arabia were living in darkness, not knowing much. The rich and powerful were unfair to the poor, taking away their basic rights. Bad things like cheating, lying, being cruel, stealing, bribery, and doing crimes were common.

At that difficult time, a special person named Muhammad (PBUH) was born to a middle-class family in the powerful Quresh tribe. His dad passed away before he was born, and his mom died when he was very young. His grandpa took care of him but also passed away early. His dear uncle, Hazrat Abu Talib, then raised him.

One day, while meditating in a cave, Allah sent Jibreel (AS) with the first message to Muhammad (PBUH). This was a big moment, and Muhammad (PBUH) went home

feeling feverish. His wife, Hazrat Khadija (RA), comforted him. This event marked the start of receiving messages from Allah.

At first, the teachings of Islam were kept a secret. People from far places would visit Makkah, where there was a special building called the Kabah full of idols. They had to pay money to visit it. Starting a new religion would mean less money for the rich people in Makkah. So, Muhammad (PBUH) taught Islam secretly to his followers. When there were many followers, Allah told him to tell everyone openly. But followers faced a lot of problems in the new world of Islam. Allah then told them to move to Madinah, where the first Islamic State was formed.

Islam grew stronger in Madinah as more people followed Muhammad (PBUH). Ten years later, Muhammad (PBUH) and his followers went back to Makkah. He destroyed all the idols in Makkah, getting rid of false beliefs.

The most important moment in Islam was when Makkah was conquered. It was a huge achievement for the Muslims, going against the powerful Quresh tribe and winning Makkah.

### **The Tenets and Perspective of Islam:**

Islam, a religion rooted in principles of peace and compassion, imparts invaluable teachings that have transformed societal norms. In the pre-Islamic era, humanity was marred by cruelty, particularly towards women who were deemed inferior, with newborn girls facing the horrendous fate of being buried alive. Additionally, the powerful would exploit orphans, seizing their rightful inheritance. Islam emerged as a beacon of enlightenment, urging people to embrace kindness and respect for each other's rights.

Within the Islamic framework, the status of women is exalted, emphasizing that paradise lies at a mother's feet. The birth of daughters is celebrated as a promise of heavenly rewards, emphasizing the importance of nurturing familial bonds. Husbands are enjoined to display mercy and affection towards their wives, recognizing this as a primary duty in Islam.

Zakat, a fundamental pillar, underscores the significance of social welfare in the Islamic ethos. Mandating the annual contribution of a portion of one's wealth to the needy, Islam advocates for the equitable distribution of resources. This commitment to wealth circulation fosters economic equality, a hallmark of a progressive society.

The teachings of Islam resonate with values of peace, patience, humility, and brotherhood. Islam promotes tolerance irrespective of caste, creed, faith, or gender, extending mercy even towards the realm of plants and animals.

### **The Teachings and Worldview of Islam encapsulate six core beliefs:**

1. Monotheism – the belief in one God, Allah.
2. Recognition of angels as divine entities.
3. Faith in the Quran and other holy books.
4. Acknowledgment of special messengers (prophets) like Musa, Isa, and Muhammad.
5. Belief in the day of judgment, where every individual is judged based on their earthly deeds.

6. Acceptance that God's will prevails, with destiny predetermined.

Beyond these core beliefs, Islam guides adherents to navigate the world through a Muslim worldview. Sufism, a facet of Islam, advocates for a personal connection with God, fostering divine love and knowledge-seeking as integral elements of a devout Muslim's journey.

### **The Five Pillars of Islam Explained:**

#### **1. Belief in the Oneness of Allah:**

The journey of faith starts by acknowledging and saying out loud that there is only one God, and His name is Allah.

#### **2. Five Obligatory Prayers:**

Muslims have a special routine of praying five times a day. These prayers are a crucial part of being a Muslim and help to stay connected with Allah.

#### **3. Zakat - Charity to the Needy:**

If someone has a certain amount of wealth (known as Nisaab), they are required to give a portion of it to help those who are in need or are poor. This act of giving is called Zakat.

#### **4. Fasting in the Month of Ramadan:**

During the month of Ramadan, Muslims observe a fast. This means they don't eat, drink, or engage in certain activities from sunrise to sunset. It's a time for self-discipline, reflection, and empathy for those who are less fortunate.

#### **5. Hajj - Pilgrimage to Makkah:**

Hajj is a special journey that Muslims make to the holy city of Makkah. It happens once a year during the month of Dhul Hijjah. Unlike Umrah, which can be done at any time, Hajj has specific dates. People often use a travel agency to help plan and book their journey for Umrah or Hajj.

### **The Islamic Worldview:**

Islam teaches that our time on Earth is temporary. Allah sends people here to follow the teachings of Islam. After we pass away, we will be held accountable for our actions. Allah will then reward or punish us based on how we lived our lives according to Islamic principles. It's a belief that guides Muslims to lead a righteous life and be mindful of their deeds.

### **The Spread of Islam: A Journey Across Continent**

After the passing of Muhammad, Islam rapidly expanded, reaching Asia, Africa, and Europe within a few decades. The simplicity of its core belief in one God played a significant role in this widespread journey.

The initial phase of expansion, occurring between 610 to 750 AD, was led by early caliphs and the Umayyad Dynasty. During this time, Islam took root in the Arab Peninsula and gradually reached all territories conquered by Arabs. The voluntary conversion to Islam was facilitated by the establishment of madrasas and the development of the religious doctrines of Islam.

As the Umayyad rule came to an end, Islam had already spread to parts of Africa, areas beyond Saudi Arabia in the Middle East, and even made its way into Europe. Arab traders passing through the Indian sub-continent played a crucial role in introducing Islam to the region on their way to Southeast Asia.

The second wave of expansion, spearheaded by the Abbasids (750-1258), witnessed substantial conversions in regions south of the Sahara, Turkey, and Central Asia. The clarity in defining Islam and the distinction between Muslims and non-Muslims, coupled with the perceived superiority of Islam, led to mass conversions during this period. The final wave of conversion occurred during the Ottoman Empire (13th century to 1918). Sufi missionaries, trade, and migrations were instrumental in spreading Islam. Southeast Asia saw the influence of Islam through trade and further expansion by Sufi missionaries. The territories of converted rulers and their subjects also played a crucial role in solidifying the spread of Islam during this era.

### **The Evolution of the Caliphate: A Journey Through Islamic Governance**

The Caliphate system stands as the Islamic approach to governance, unifying Muslims under the rule of the Caliph, transcending geographical boundaries.

The Rashidun Caliphate, comprising the first four caliphs, laid the foundation for the Caliphate system. These esteemed figures were:

1. First Caliph Hazrat Abu Bakr (RA)
2. Second Caliph Hazrat Omer (RA)
3. Third Caliph Hazrat Usman (RA)
4. Fourth Caliph Hazrat Ali (RA)

Under the reign of the Rashidun Caliphate, Islam extended its influence throughout the Arabian Peninsula. Hazrat Omer's leadership witnessed the incorporation of Mesopotamia, Syria, and Palestine into the Islamic world. Subsequently, Egypt and the Sassanian Empire also became part of this growing realm. Hazrat Omer's era was marked by rapid military expansion, but after his passing, internal conflicts and political struggles slowed the pace of conquests.

Following the Rashidun, the Umayyads took the mantle of the caliphate from 661 to 750 AD. Their rule witnessed the expansion of Islam into regions like Bukhara, Samarkand, the Indian subcontinent, Khwarizm, Fergana, and Tashkent.

The Abbasids succeeded the Umayyads, reigning from 750 to 1258. Their focus shifted towards the eastern territories, with Baghdad as the capital. The Abbasid Caliphate is often hailed as the Golden Era of Islam, a period marked by significant advancements in science, astrology, mathematics, poetry, Sufism, and various other disciplines. Baghdad emerged as a renowned center of learning, hosting the illustrious House of Wisdom, a vast central library.

However, the glory of the Abbasids faced a devastating end when the Mongols ruthlessly plundered Baghdad, leaving nothing but destruction in their wake. This marked the tragic conclusion of the Abbasid dynasty.

Despite the unfortunate demise, the Caliphate system played a crucial role in shaping the

course of Islamic history. From the dynamic expansion under the Rashidun to the cultural and intellectual blossoming during the Abbasids, the Caliphate served as a unifying force for Muslims worldwide. Though the physical structures may have crumbled, the legacy of the Caliphate endures, echoing through the annals of Islamic governance and contributing to the rich tapestry of Islamic civilization.

### **The Rise and Fall of the Ottoman Empire: A Tale of Triumph and Decline**

The Ottoman Empire began in Turkey with leaders like Osman I, Orkhan, Murad I, and Beyazid I expanding it. They took over parts of the Byzantine Empire, especially in the Balkans. They were successful in wars and eventually took Constantinople in 1453 because their enemies weren't united.

Over time, the empire grew to include places like Persia and Crete. But in the 18th century, it started declining, especially during wars with Russia and Napoleon. They lost territories like Egypt, Greece, Moldavia, and Walachia.

In 1908, the Young Turk Movement, mostly made up of army members, removed the sultan and put Muhammad V in charge. They lost more European territories to Bulgaria, Serbia, Greece, and Albania in subsequent wars.

World War I brought more trouble. Arabian forces beat the Turkish army, and the British took over Baghdad and Jerusalem. By 1918, the empire collapsed in Asia and Europe. A few months later, it officially ended.

The Ottoman Empire's story is one of ups and downs, growth and shrinkage. It faced problems inside and out, and eventually faded away, leaving a mark on history.

### **The Splendors and Legacy of the Safavid Empire**

The Safavid Dynasty was a big deal in Iran from 1501 to 1722. They did a lot to make Iran strong after the Muslims took over. The Safavid rulers set up schools to teach people about Islam and made sure their empire was smart and enlightened. They were different from other Muslim groups because they followed Shia Islam.

At its biggest, the Safavid empire covered Iran, Azerbaijan, Armenia, parts of Iraq, Georgia, Afghanistan, and bits of Pakistan, Turkmenistan, and Turkey. They were one of the big three empires at the time, alongside the Ottomans and the Mughals.

Even though the Safavid Empire fell in 1736, its impact stuck around. They made Persia rich and set up a good government that lasted. They were also into art and buildings, making Iran's culture awesome.

The Safavids also helped make Iran's identity strong and their religion, Shia Islam, became a big deal in the region.

Overall, the Safavid Dynasty changed Iran a lot. Their focus on education, government, and art still matter today, making Iran what it is. Their story shows how powerful they were and how they shaped Iran's history.

### **Conclusion:**

In conclusion, the journey of Islam from its beginnings to its spread across the world, and the rise and fall of empires like the Ottoman and Safavid, reveals a rich tapestry of history. Islam's foundation, based on its core beliefs and practices known as the Five Pillars, has shaped societies and cultures for centuries. The Ottoman Empire's rise to power and eventual decline, alongside the splendor and legacy of the Safavid Empire, demonstrate the ebb and flow of empires throughout time. Despite the challenges and changes, Islam's influence remains significant, leaving behind a lasting legacy that continues to impact the world today. As we reflect on this historical analysis, we gain a deeper understanding of the complexities and dynamics that have shaped the world of Islam, highlighting its enduring importance in global history.

### **References:**

- [1] Ibn Kathir, Ismail. (2000). "Ibn Kathir's Stories of the Prophets." Dar-us-Salam.
- [2] Armstrong, Karen. (1992). "Islam: A Short History." Modern Library.
- [3] Watt, W. Montgomery. (1974). "Muhammad: Prophet and Statesman." Oxford University Press.
- [4] Ahmed, Ibn. "The Rise and Fall of Islamic Empires."
- [6] Khaldun, Ibn. "Muqaddimah: An Introduction to History."
- [7] Esposito, John L. (2000). "Islam: The Straight Path." Oxford University Press.
- [8] Hourani, Albert. (2002). "A History of the Arab Peoples." Harvard University Press.
- [9] Kennedy, Hugh. (2016). "The Prophet and the Age of the Caliphates." Pearson.
- [10] Nasr, Seyyed Hossein. (1964). "Islamic Science: An Illustrated Study." World Wisdom.
- [11] Lewis, Bernard. (1993). "The Arabs in History." Oxford University Press.
- [12] Ahmed, Akbar S. (2010). "Islam Under Siege: Living Dangerously in a Post-Honor World." Polity.
- [13] Ansary, Tamim. (2010). "Destiny Disrupted: A History of the World Through Islamic Eyes." Public Affairs.
- [14] Hourani, Albert. (1991). "A History of the Arab Peoples." Faber and Faber.
- [15] Karpat, Kemal H. (2002). "The Ottoman State and Its Place in World History." Brill.
- [16] Lewis, Bernard. (2002). "What Went Wrong? Western Impact and Middle Eastern Response." Oxford University Press

## Data Structure and Data Analysis in Geographical Information System

Sujoy Kumar Tarafder

State Aided College Teacher  
Nagar College, Nagar, Murshidabad, 742159

### Abstract

A geodatabase is a database that is in some way referenced to locations on the earth. Coupled with this data is usually data known as attribute data. Attribute data generally defined as additional information, which can then be tied to spatial data. GIS data can be separated into two categories: spatially referenced data which is represented by vector and raster forms (including imagery) and attribute tables which is represented in tabular format. Within the spatial referenced data group, the GIS data can be further classified into two different types: **raster and vector**. Raster data represents geographic data as a matrix of cells that each contains an attribute value. While the area of different polygon shapes in a data set can differ, each cell in a raster data set is the same cell. The size of the area in the real world that each cell represents is known as the spatial resolution. Raster cells are often used to map out surfaces such as topography and can be used to quantify changes across a landscape. Another common use of raster data is as a background layer. Aerials, satellite images, and shaded relief rasters are frequently used as the base layer when making maps. This data category also includes aerial photographs and satellite imagery raster types can be in geoTIFF, TIFF, JPG, PNG, GIF, BMP, and other imagery file formats. These file formats often have a second file called a world file that contains the projection information for the raster imagery. Vector data is the most common type of GIS data. Most data loaded into a GIS software program tends to be in vector data. Vector data represents geographic data symbolized as points, lines, or polygons.

Keywords: Geodatabase, Raster, Vector, Landscape, Projection.

### Introduction:

A **geographic information system (GIS)** consists of integrated computer hardware and software that store, manage, analyze, edit, output, and visualize geographic data. Much of this often happens within a spatial database, however, this is not essential to meet the definition of a GIS. In a broader sense, one may consider such a system also to include human users and support staff, procedures and workflows, the body of knowledge of relevant concepts and methods, and institutional organizations.

### GIS Data Types:

GIS technology utilizes two basic types of data. These are:

**1) Spatial data:** describes the absolute and relative location of geographic features.

**2) Attribute data:** describes characteristics of the spatial features. These characteristics can be quantitative and/or qualitative in nature. Attribute data is often referred to as tabular data.

### Spatial Data Models :

Spatial data can be referred to as geographic data or geospatial data. Spatial data provides the information that identifies the location of features and boundaries on Earth. Spatial data can be processed and analysed using Geographical Information System (GIS) or Image Processing Packages.

1) Raster 2) Vector 3) Image

**RASTER :** Raster data models incorporate the use of a grid-cell data structure where the geographic area is divided into cells identified by row and column. This data structure is commonly called raster.

**VECTOR :** All spatial data models are approaches for storing the spatial location of geographic features in a database. Vector storage implies the use of vectors (directional lines) to represent a geographic feature.

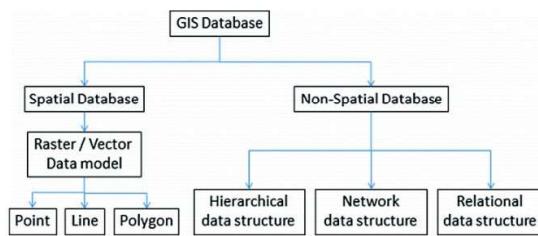
**IMAGE :** Image data is most often used to represent graphic or pictorial data. The term image inherently reflects a graphic representation, and in the GIS world, differs significantly from raster data.

### Non Spatial Data Models :

1. **Categorical/Numerical:** Non-spatial data can be categorical or numerical. Categorical data includes descriptions like colors, types, names, labels, etc., and is often divided into nominal data (with no order or priority) and ordinal data (with a clear order or rank). Numerical data represents quantities or counts, and is often divided into interval data (with consistent scale but no true zero point, like temperature in Celsius or Fahrenheit) and ratio data (with a consistent scale and a true zero point, like weight or height).

2. **Discrete/Continuous:** Non-spatial data can be **discrete or continuous**. Discrete data takes specific, separate values (like the number of children in a family), while continuous data can take any value within a certain range (like the temperature of a room).

3. **Univariate/Bivariate/Multivariate:** Non-spatial data can involve one variable (univariate), two variables (bivariate), or more than two variables (multivariate). For example, a dataset of students' heights is univariate, a dataset of students' heights and weights is bivariate, and a dataset of students' heights, weights, and grades is multivariate.
4. **Scalability:** Non-spatial data can vary in size, from a few data points to millions or billions. This can impact the storage, processing, and analysis of the data.
5. **Quality:** This includes several aspects, such as accuracy (how closely the data matches reality), precision (the level of detail), completeness (whether any data is missing), consistency (whether the data is the same across different sources or times), and reliability (whether the data is trustworthy).
6. **Temporal Dimension:** Non-spatial data can also have a time component, showing how data changes over time. For example, a company's sales data might include a record of how many of each product was sold each day.
7. **Structure:** Non-spatial data can be structured (with a clear, predictable format, like a database table or CSV file), semi-structured (with some level of organization, like a **JSON** or XML file), or unstructured (with no specific format, like a text document or email).



### Types of Spatial Data:

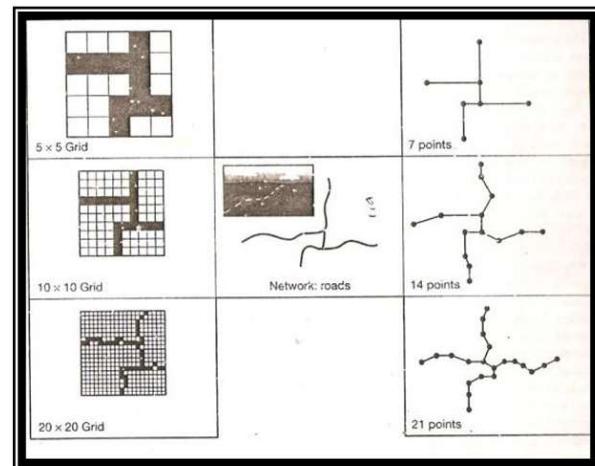
Spatial Data is mainly classified into two types, i.e. Raster data and Vector data.

#### 1. Raster Data

In the raster data model, each location is represented as a cell. The matrix of cells, organized into rows and columns, is called a grid. Each row contains a group of cells with values representing a geographic phenomenon. Cell values are numbers, which represent nominal data such as land-use classes, measures of light intensity or relative measures. The cells in each line of the image are mirrored by an equivalent row of numbers in the file structure.

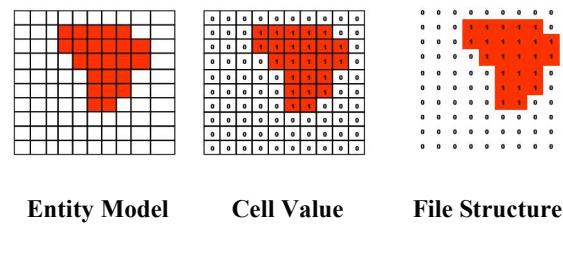
Raster Data is all about multilayered map images from satellites, drones and various other camera sensors. The data stored is in cell-based and colour pixel format. These are pixels that are arranged in columns and rows format.

The data is in .jpg, .png, bit map, .tif and .bmp. The Raster Data in GIS is very much efficient for visualization and analysis that is barely possible in Vector Based data. Unlike Vector Data, the Raster form of GIS data is large and complex to manage due to richer qualities.



**Fig: Effects of chaining resolution in the vector and raster data model**

In a simple raster data structure, such as different spatial features must be stored as a separate data layers. However, if the entities do not occupy the same geographical location then it is possible to store them all in a single layer, with an entity code given to each cell.



#### Raster Data Model:

Several methods exist for encoding raster data from scratch. Three of these models are as follows:

- Cell-by-cell raster encoding. This minimally intensive method encodes a raster by creating records for each cell value by row and column. This method could be thought of as a large spreadsheet wherein each cell of the spreadsheet represents a pixel in the raster image. This method is also referred to as "exhaustive enumeration."
- Run-length raster encoding. This method encodes cell values in runs of similarly valued pixels and can result in a highly compressed

image file. The run-length encoding method is useful in situations where large groups of neighbouring pixels have similar values (e.g., discrete datasets such as land use/land cover or habitat suitability) and is less useful where neighbouring pixel values vary widely (e.g., continuous datasets such as elevation or sea-surface temperatures).

- Quad-tree raster encoding. This method divides a raster into a hierarchy of quadrants that are subdivided based on similarly valued pixels. The division of the raster stops when a quadrant is made entirely from cells of the same value. A quadrant that cannot be subdivided is called a “leaf node.”

### **Component of Raster Data Structure:**

There are many components to form raster data structure.

- a) Cell Value, b) Cell Size, c) Raster Band, d) Special Reference.

### **Create a Raster Data Structure:**

- 1) Entering cell values using a word processor, database or spreadsheet program for each layer cell by cell—tedious and time consuming
- 2) Digitize existing maps using a digitizing table in vector formats and then convert the softcopy into raster formats
- 3) Scanning the hardcopy map—Using a scanner, hardcopy maps are converted into softcopy maps
- 4) Some data (e.g. Remote Sensing data) are directly captured and stored in raster formats—requires additional image pre-processing before usage.

### **Vector Data:**

The simplest vector data structure that can be used to produce a graphical image in the computer is a file containing (x,y) coordinate pairs that represent the location of individual point features. The limitation of simple vector data structures start to emerge when more complex spatial entities are considered. In the vector data all points in the data structure must be numbered sequentially and contain an explicit reference which record which points are associated with which polygon. This is known as Point Dictionary- Borrough 1986.

Vector Data is the data portrayed in points, lines and It can be represented in two dimensional and two-dimensional models depending on the coordinates used. Vector Data in GIS is used to feed in information with the help of coordinates and to visualize the address points & places of interest, lines for the rivers, roads, railways, ferry routes and even major pipeline flows, polygons, on the other hand, are used to showcase inland water bodies like lakes, buildings, etc.

- **Points:** A single dot on the layer depicts them. It can be either x or y or z coordinate.
- **Lines:** This form of vector data is depicted using two coordinates, i.e. either x coordinate – y coordinate or inverse of this. This feature has a defined length, and also, it doesn't have the width because of the two-dimensional model.
- **Polygon:** The feature is depicted using 3 or more than 3 coordinates. This form of vector data is generally used when any area is defined.

### **Vector Data Structure:**

#### **a) Spaghetti File:**

Among many of the commonly used vector based data structure, the spaghetti data has the most simple data structure (Aronoff 1989). In the spaghetti data model each entity on a map becomes one logical record in the digital file, and is defined as a string x, y coordinates. Although all entities are spatially defined, no spatial relationships are encoded. This represents a significant deficiency since, to perform any type of spatial analysis, the spaghetti relationship between such entities must be derived through computation. But the spaghetti data model can efficiently reproduce maps digitally because information extraneous to the plotting is not stored (Peuquet 1984).

#### **Properties of Spaghetti Data Model :**

- ❖ Point is enclosed as single XY co-ordinate pair
- ❖ Line is encoded as a string of XY co-ordinate pairs
- ❖ Polygon is encoded as a closed loop of XY co-ordinates that define its boundary. The common boundary between adjacent polygons must be recorded twice, once for each polygon.
- ❖ The Spaghetti model is a file of spatial data constructed in this manner is essentially a collection of co-ordinate strings with **no inherent structure**—hence the term **spaghetti model**.
- ❖ Although all the spatial features are recorded the spatial relationships between these features are not encoded.

#### **b) Topological Model:**

The topological model is the most widely used method of encoding spatial relationships in a vector based GIS (Peuquet 1984). Topology is that branch of mathematics used to define spatial relationships between entities (ESRI 1992). For example, an area or polygon is defined by a set of lines which makes up its boundaries. In this case the line is the border between two polygons. Each line can represent part of a path connecting such other paths. For example, lines can be used to represent streets and the routes which pass along them. The connectivity or contiguity of these features is referred to as their topology structure (ESRI 1992). By sorting

information about the location of a feature relative to other features, topology provides the basis for many kinds of geographic analysis without having access to the absolute locations held in the coordinate files (ESRI 1992).

Topology is the mathematical method used to define spatial relationships. The model is termed **Arc-Node** data model.

- ❖ **Arc** the basic logical entity, a series of point that starts and end at a node.
- ❖ **Node** is an intersection point where two or more arcs meet. A node can also occur at the end of a dangling arc i.e. and arc that is not connected to another arc such as the end of a dead-end street.
- ❖ **Polygon** is comprised of a closed chain of arcs that represents the boundary of the area.
- ❖ **Point** is encoded as a single XY co-ordinate pair. Point is considered as the polygon with no area.

#### c) TIN Data Model :

The Triangulated Irregular Network (TIN) data model is an alternative to the raster and vector data models for representing continuous surfaces. It allows surface models to be generated efficiently to analyse and display terrain and other types of surfaces. The TIN model creates a network of triangles by storing the topological relationships of the triangles. The fundamental building block of the TIN data is the node. Nodes are connected to their nearest neighbours by edges, according to a set of rules. Left-right topology is associated with the edges to identify adjacent triangles. The TIN creates triangles from a set of points called mass points, which always become nodes. The user is not responsible for selecting; all the nodes are added according to a set of rules. Mass points can be located anywhere, the more carefully selected, the more accurate the model of the surface will be. Well-placed mass points occur when there is a major change in the shape of the surface, for example, at the peak of a mountain, the floor of a valley, or at the edge (top and bottom) of cliffs. By connecting points on a valley floor or along the edge of a cliff, a linear break in the surface can be defined. These are called break lines. Break lines can control the shape of the surface model. They always form edges of triangles and, generally, cannot be moved. A triangle always has three and only three straight sides, making their representation rather simple. A triangle is assigned a unique identifier that defines by its three nodes and its two or three neighbouring triangles.

TIN is a vector-based topological data model that is used to represent terrain data. A TIN represents the terrain surface as a set of interconnected triangular facets. For each of the three vertices, the XY (geographic location) and the (elevation) Z values are encoded.

#### References:

- **Spatial Databases** by Philippe Rigaux, Michel Scholl, Agnès Voisard Released May 2001.
- **REMOTE SENSING AND GIS 3E** by Basudeb Bhattacharya.
- **Data Structures and Algorithms for Geographic Information Systems** by T. Ohler & P. Widmayer.
- **Learning GIS with QGIS Software** by Sujoy Kumar Tarafder.

#### Author : Sujoy Kumar Tarafder

*M.Sc. , B.Ed. in Geography, Juthika Mitra Smriti Awarded.*

Experienced in QGIS, PCI Geomatica and Arc GIS Software in Geography.

Experienced in Photoshop CS6, Corel Draw, Page Maker, MS Publisher, HTML, GHTML, Flash, ASP Development Environment [ Registered under Govt. of India WB15D0004104]

Publication: International- 9, National- 15, State- 7

Ex Guest Lecturer Sripat Singh College, Jiaganj, Murshidabad.

# ABOUT EDITORS



**Dr. Anilesh Dey** was born in West Bengal, India, in 1977. He received a B.E in Electronics from Nagpur University and M. Tech. (Gold-Medallist) in Instrumentation and Control Engineering from Calcutta University and received PhD. from Jadavpur University. He is working as an Principal , Nagar College(A govt aided College). He has been the author and coauthor of more than 100 scientific papers in international/national journals and proceedings of the conferences with reviewing committee. He has conducted several research works in the domain of Biomedical Engineering.

**Dr. Sudipta Sau** was born in West Bengal in 1978. He received his PhD. Degree from Viswa-Bharati (Central university) in 2018. His area of Specialization are Marxist Theory, Tagore Studies and Comparative literature. Presently he is working as Asst. Professor in Bengali department Nagar College. He was also working as Teacher-in Charge in Nagar College. He is life member of Bangiya Sahitya Parisad



**Dr. Satarupa Dasgupta** is an Assistant Professor in the Department of Geography of Nagar College. Her field of interest are urban planning, urban studies, water issues, sustainability & environment. She has working experience of almost 20 years in the higher education industry. She had completed her Doctor of Philosophy focusing on urban poverty

**Sreeja Konar** is an Assistant Professor of English at Nagar College, Murshidabad, West Bengal. She had done her M.Phil on the "Representation of Kolkata through the Lens of Multimodality:A Reading of the Selected Non-Fictional English Book Covers (1971- 2017)" in 2019. She had participated and presented papers in variegated International and National Seminars and workshops. She has keen interest in Gender Studies, Green Studies and Folk Culture of Bengal. She has recently submitted her PhD thesis titled "A Bengali War Dance: A Historicised Ethnochoreological Study of 'Raibenshe' in the Light of Gurusaday Dutt's Theories and RuralBengali Praxis (1933-1954)" in the University of Burdwan. She has authored Nature's Narratives: Remapping Green Literature and Ecofeminism (2024) and Kaleidoscope (2024).

