UNIT 1 INTRODUCTION TO ENVIRONMENTAL PSYCHOLOGY: CONCEPTS AND DESCRIPTION AND RELATIONSHIP OF ENVIRONMENTAL PSYCHOLOGY TO OTHER DISCIPLINES

Structure

1.0 INTRODUCTION

In this unit you will be learning about the definition and concept of environmental psychology. In fact you will learn how the environment and humans interact with each other and how each influences the other in a big way. The unit presents the various ways in which the environmental degradation takes place and discusses the role of environmental psychologist to overcome the same. This is followed by the definition and application of environmental psychology. The unit presents the relationship between man and the environement highlighting the intricacies of relationship. The unit then discusses the relationship between environmental psychology and various fields of psychology.

1.1 OBJECTIVES

After reading this unit, you will be able to:

- Define environment;
- Explain how the environment is destroyed by humans;
- Describe the relationship between humans and the environment;
- Explain environmental psychology in terms of its application; and
- Analyse the relationship of environment to other fields of psychology.

1.2 CONCEPT OF ENVIRONMENTAL PSYCHOLOGY

During infancy the individual learns to enjoy the presence of others and learns to achieve his goals with the help and cooperation of significant others. These goals may be to gratify the biological needs such as need for survival, need to satiate hunger, thirst and related needs, including achieving of physical comforts, protection, etc.

In fact, an obvious but intense drive to belong to or associate oneself with others is fundamental in man and it motivates him to live together. And such living together in home is thus a critical socio physical setting in the life of an individual because it is the arena, that is childhood in which most early learning occurs. Different streams from the spectrum of knowledge, self-knowledge, knowledge from others and knowledge of the environment are all initiated and crystallised during this period of childhood.

In real life, our behaviour occurs in the context of an environment, one that is constantly changing and rich in information. Our environment provides us with basic needs for life, including food, water and air to breathe. It is also modified by our actions, and is altered whenever one of us changes it. Our environment includes all of our natural and built surroundings, and is a delicately balanced system that can easily be damaged.

Whenever we change some part of it, other parts also change. Concerns about what we are doing to our environment reached unprecedented prominence in the 1960's and continue to be an issue of serious concern even in the 21st century as consequences of years of neglect of the environment and the damaging consequences have become apparent. The depletion of the ozone layer of the atmosphere, global warming and increasingly destructive storms, massive oil spills in coastal waters, etc. and different types of urban ills and endangering of other species because of human exploitation of resources reflect these problems.

Actually, as man has caused considerable damage to the environment and its negative effects are affecting people globally, many preventive steps have been taken to prevent further new and fresh problems. But, the pollution of our air and water, crowding, noise and other environmental problems continue. In the process of suggesting possible solutions for environmental problems, psychologists are gaining considerable practical knowledge about relationships between behaviour and environment as well as gaining information about human behaviour.

1.2.1 Man and Environment Relationship

The relationship between humans and environment has varied from the early periods of human settlement on the earth to the present day and it also varies from place to place.

The environment affects humans in many ways. For instance, population on the earth varies due to variation in the environment and the main factors which affect the distribution of population and human settlement are (i) Relief of land (ii) Climate (iii) Soil (iv) Mineral deposits (v) Water supply.

i) **Relief of Land:** Generally the population is dense and high in those areas where the land is fertile, the rivers flow, and the area is plain and not mountainous. Population needs food, water and many other facilities to sustain itself and in high mountainous areas this may not be possible and thus the population is sparse in this area. Furthermore, to sustain a population in a place there should be fair amount of economic activity which again is higher in plain areas than in mountainous area.

ii) **Climate:** Most areas on earth having density less than two persons/sq. km. are not favorable for settlement because of their unfavorable climate. Areas of cold climate-North Siberia, North Canada, Alaska etc. have low density of population. Hot and arid regions of Sahara, Kalahari Desert in Africa, Great Australian Desert etc. are not suitable for human settlement.

In tropical regions due to heavy rain and temperature, the density of population is very low. For example in the Amazon basin, population density is less than two persons/sq. km. But places with favorable climate and favorable terrain, have dense population and hence have compact settlement.

iii) **Soils:** Fertile alluvial soil attract population because it gives rise to agricultural activities. Java Islands of Indonesia has fertile soil of young volcanic material and agriculture is an important activity, hence dense and compact settlements are found here. Whereas in Sumatra, due to infertile soil, the population density is very low.

iv) **Mineral Deposits:** Mineral wealth is yet another factor responsible for population distribution and density. The presence of coal and iron ore in different parts of the world has attracted huge population. Coal mining regions have become regions of dense population for example, Jharkhand in India and gold mines in Australian desert.

v) **Water:** Population distribution is very much affected by water supply. As is well known humans and animals require water and settlements or civilizations develop on the banks of major rivers, example The Ganga, the Nile, the Indus, etc. Adequate water supply provides irrigation facilities to farmers and hence population increases due to increase in primary activities. In dry regions, population is concentrated in those areas where there is water, hence nucleated circular settlements are found.

Thus it can be said that the environment plays an important role in deciding population distribution, density, settlement type and pattern.

1.2.2 Degradation of the Environment

The Industrial Revolution which provided mechanical power, invention of steam engine and other machinery, greater use of metals etc gave them opportunities to modify the environment. At the same time agriculture provided abundant food so that they could settle down permanently. The family grew in size and people migrated to different parts, via rail, road and sea, because of improvement in transport system, example the new lands in America and Australia were settled by people from Europe.

Another development which enabled humans to survive was the use of preventive and cumulative steps taken to protect them from epidemics and diseases which in turn has increased the span of human life and reduced death rate.

With increase in the knowledge and skill and development of human economy there was a gradual increase in carbon dioxide content. It is estimated that carbon dioxide content has increased by 25% in the last 100 yrs and the global temperatures have risen between 0.3 degree Celsius to 0.7 degree Celsius.

Increase in carbon dioxide is attributed to large scale deforestation and will lead to increase in sea level causing submergence of coastal regions. Burning of coal, oil and petroleum adds sulphur dioxide to the atmosphere. Lead, carbon monoxide and nitrogen dioxide are added to the atmosphere from automobile exhaust.

These gases result in acid rain which affects aquatic life, example acid rain in industrial regions of Europe and North America.

Even now substances which were not present previously, are introduced into the air, water and soils. The most dangerous one is radioactive substance spewed into the atmosphere by nuclear explosions. They have adverse effects on organisms including man and cause death, impairment of limbs, diseases and psychological disorders.

The catastrophe of nuclear disaster at Chernobyl in Ukraine (1988) is an important example of adverse environmental effects of use of minerals like uranium, thorium etc.

The environment has already been degraded to such an extent in certain areas that people are forced to migrate. They are facing scarcity of resources like food and energy.

Man's impact on environment has resulted in pollution of environment which not only affects air, water and land but also organisms of biosphere. The main points summing up the impact of man on environment are:

Air pollution: Burning of fossil fuels in large quantities from jet aircraft, CFCs used in aerosol spray cans, refrigerators and farm blowing have been stated to be responsible for depletion of ozone to 3-4% in the last 100 years.

Water pollution: Leakage of petroleum from huge ships and oil tankers into the sea, causes oil slicks which spread rapidly over water and spell disaster to marine life and to human depending on marine resources.

To give an example, the leakage of 100000 tons of crude oil near Spanish coast in 1976, leakage of crude oil off Alaskan coast in 1989. Indicate clearly

the many such incidents which tell the impact of negligence and failure of technology on environment.

The most widespread source of water pollution is disposal of sewage of urban centers into rivers. The Ganga and Yamuna are polluted in this way and the same rivers provide domestic water supply as well. Ocean waters are polluted by discharge of sewage from cities located along the coast.

Land degradation: Dumping of solid waste from urban centers and waste materials from mining centers render the land unsuitable for any use. Saline encrustation of irrigated lands is another example of land degradation. In the semi arid region, wind action causes deposition of sand on a large scale over cultivated land rendering them unfit for cultivation. This marks the beginning of the process of desertification.

Depletion of resources: Population growth in the recent past has resulted in rapid depletion of all kinds of resources. The most striking example of such resource depletion is the food deficit faced by about 100 countries of the world.

Forest and soil resources are getting depleted at a fast rate owing to population pressure. Tropical forests are depleting at a rate of 2% per annum. It is estimated that the world is losing 7% of top soil per decade.

Depletion of resources is most significant in respect of non renewable mineral and power resources. The world is facing energy crisis as existing oil resources may last only for a few decades. Though coal reserves are adequate for a few centuries but it cannot replace oil, especially for transport.

Humans have come to realise that their economic activities are threatening their survival on earth. Their survival depends on their realisation that they have to live in harmony with the various elements of environment which are interconnected. An understanding of the components and processes which take place in environment, the relationship between biotic and abiotic components, and the assessment of resources with reference to need of people in a region is essential for their survival.

Self Assessment Questions

1) Discuss the concept of environment psychology.

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2) Describe environment and environment psychology bringing out their salient features.

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3) How would you define and describe man and environment relationship

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4) How does degradation of environment occur? What are the ways to prevent the same.

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1.3 ENVIRONMENTAL PSYCHOLOGY AND APPLICATIONS

1.3.1 Description of Environmental Psychology

Generally there are two primary descriptions of environmental psychology and other fields of psychology, viz.,

i) the perspective it takes in studying its subject matter; and

ii) the kinds of problems or settings that are selected for study.

The most important thing is an emphasis on studying environment and behaviour relationships as a unit, rather than separating them into supposedly distinct and self contained components. It is concerned with studying environmental issues by drawing on the knowledge and techniques of many areas within psychology, and as such it serves as meaningful focus for these areas.

We define environmental psychology as the study of the moral relationship between behaviour and experience and the built and natural environments. The distinguishing characteristics of environmental psychology include the following:

- Environment behaviour relationships are integral units.
- Environment behaviour relationships are reciprocal or two way process.
- The contents and theory of the field are derived primarily from applied research.
- The field is interdisciplinary.
- The relationship between humans and nature may be based on both bearing and biological predisposition.
- Much of the teamed component may be understood in terms of the affects and values that comprise attitudes.

There is evidence for a fairly direct effect of certain forms of nature on our physiological functions. There is also biological influence on landscape preferences. Biologically oriented theorists and cognitive theorists agree that

experiences in natural environments can restore the damaged environment as well as produce positive effect on the environment. The concept of environment (for example space / place) attempts to integrate the character of a setting with the personal, often powerful emotions and memories an individual associates with it.

Environmental psychology, as a science seeks to understand cause and effect relationships through prediction and uses publicly observable data to verify these predictions. Once enough predictions are verified, theories are constructed, which consists of a set of concepts and a set of statements relating the concepts to one another.

Usually theories infer that a more or less abstract variable mediates the relationship between one observable variable and another. The environment can not be studied separately from between and the environment, without loosing valuable information.

Another assumption underlying environmental psychology is that environment behaviour relationships are really inter relationships in the sense that the environment influences and constrains behaviour, but behaviour also contributes to change in the environment.

It can further be said that environmental psychology is less likely to draw sharp distinction between applied and basic research than are other areas in psychology.

Environmental psychology is mainly concerned with the environment as a determinant that influences the behaviour or mood of the individual. It is a study of the relationship between the physical environment and human behaviour. It may also be stated that Environmental psychology is the study of transaction between individuals and their psychological settings. At the same time, the human behaviour too has an impact on the environment, in the sense that the environment is depleted or damaged by the humans and in turn adversely affects the health of the individual.

Thus, we can say that there is a reciprocal relationship between the person and the environment.

Environmental psychology is concerned with the consequences of behaviour on the environment, with larger scale environmental problems such as pollution, recycling and ecosystem issues.

1.3.2 Application of Environmental Psychology to Built up and Natural Environment

Environmental psychology is the study of the molar relationships between behaviour and experience and the built and natural environment. Generally environment provides meaning and it affects behaviour just as do social settings or age or developmental stage.

Environmental psychology is not a theory of determinism. Man is not a passive product of his environment, but a goal directed being who acts upon his environment and who in turn is influenced by it. In the changing world, man changes himself always. There is a dynamic interchange between man and the milieu.

Environmental psychology studies some basic psychological processes. Each individual perceives or experiences the world about him in his own individual and unique way. The perceived as well as objective reality guides the individual and his actions and determines whether the satisfaction he seeks will be achieved. In this process the role of cognition is very important. For growth and development learning is another important factor.

For an understanding of all these processes, knowledge of values, attitudes, the social and cultural norms which man brings to his environment is crucial. When men build houses, they create not only a physical environment but a psychological environment of meaning, a symbolic world that reinforces particular tastes and values. Besides this, there is also the current concern with the problem of cities that is the built environment.

Population density, inner-city decay, pollution, alienation are among the environmental stress factors to which urban man is subjected. In regard to the man made pollution, we must add the depletion of natural resources, a vanishing wildlife and threat of ecological failure.

Again, if man is to live in harmony and inspire, as part of the natural order of things, a better balance must be found between the integrity of this environment and its destructive exploitation. We are concerned not only with the economic and cultural implications, but also the degree to which man has been psychologically abused and caricatured by the technology which is central to it. Simply to change our environment, therefore, does not necessarily improve our chances of survival. Change must be purposeful in terms of long-term human consequences. To control one's environment is, to a very great extent to shape one's future. Man's psychological environment is largely a product of his own creation, and it is because he is so greatly influenced by his own product that the study of this relationship is very important.

1.4 BEHAVIOUR OF MAN IN RESPONSE TO ENVIRONMENT

The behaviour and experience of the individual in response to the physical environment can be sketched in the following manner:

- In relation to any physical setting, human behaviour is enduring and consistent over time and situation. This is a way of saying that environments define their use.
- Patterns of behaviour in response to a setting persist regardless of the specific individual involved.
- This demand character, however, is general and within the setting a person varies his behaviour over time and space.
- The boundaries of a setting are defined not only by the setting's physical properties but through its interactive relationship with other physical and social system.
- The environment is an open system.
- The characteristic behaviour pattern of the setting as a whole will be affected by a change in any of its components.

When such changes preclude the characteristic behaviour pattern of the setting, this behaviour will be conserved and enacted at a new time or place.

Another more adequate setting will be sought out.

The environment is inclusive not only of the physical components that are present, but also of social and individual behaviour that occur within it. In this sense it is a process defined by its participants and the nature of their interaction.

The environment will be perceived at any one moment as unique. The vantage point and role will affect behaviour vis-à-vis the settings differently from others who perceive the same environment as unique to them.

Environments have a natural history of use, and we inherit this history when we participate in them. Such use need not be congruent with the physical character of a setting. For instance in a Church , the customary practice is to keep our voices lowered, whereas in a public meeting, we can raise our voice and shout.

Environments are typically neutral. We are most aware of their characteristics when change is introduced or when we encounter an unfamiliar setting.

Behaviour is influenced by the total environmental context in that it will always be affected by the physical opportunities that exists for expressing a desired behaviour.

Environmental psychology looks upon the stimulus and its perception as a unit that contains more than just a stimulus and a response. The stimulus response perceptual relationship depends on the patterning, complexity, novelty and movement of the contents of the landscape and on the past experience of the perceiver.

Actually in environmental psychology, all these things make up one holistic environmental perceptual behaviour unit. Consider a shopping mall which is not just separate episodes of people engaged in individual activities. Here so many people interact with each other and there exists both pleasant and unpleasant consequences. This environmental setting has an impact on human being and there is a close relationship between man environment relationships. Not only this, environmental psychology is less likely to draw sharp distinction between applied and basic research than are other areas in psychology. It can be said that majority of research in environmental psychology is problem oriented or intended to be relevant to the solution of some practical issue. Effects on pollution on behaviour, changing environmentally destructive behaviour and different design of environments for different human use are the research area mainly in environmental psychology.

Self Assessment Questions

5) Describe Environment psychology and bring out its features.

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6) Describe how environment psychology is applied to built up environment.

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7) Discuss critically man's behaviour in response to environment.

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8) Discuss environment as an open system.

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1.5 RELATIONSHIP OF ENVIRONMENTAL PSYCHOLOGY TO OTHER DISCIPLINES

1.5.1 Environmental Psychology and Architectural Psychology

There is relationship between environmental psychology and architectural psychology in many respects. The attempt by Ittelson and Proshansky's group in the United States studied the relationship between architectural design and the behaviour of the patients in psychiatry department. At the same time, other psychologists and psychiatrists were involved in similar research projects both in the United States and in other countries. Besides this, Sommer developed the concepts of human "territoriality" and "personal space" destined to find a remarkable following in psychology in general and environmental psychology in particular and in the sciences of architectural design.

1.5.2 Environmental Psychology and Biological Sciences

In 1956, the Research Commission of the American Institute of Architects (AIA) presented a proposal to the National Science Foundation (NSF) to hold a conference, which took place in 1959 at the University of Michigan, the main topic was the relationship between the physical, biological and social sciences with regard to the problems of creating optimal environments of human activities.

Prior to this, at the 1958 convention of the AIA in Cleveland, a preliminary seminar was held on the topic, in which the participants included architects, civil engineers, urban planners, psychologists and sociologists. Other disciplines outside of psychology, which contributed greatly towards the emergence of

environmental psychology, are represented by the sciences of the physical geographical environment and those of the ecological naturalistic one, by the end of the 1960's they showed a growing "human" or "anthropic" factor. Each man's perceptions are his own, unique and personal.

Perception is the process by which a particular person, from his particular behavioural centre, attributes significance to his immediate environmental situation. So, it can be said that there exists relationship between environmental psychology and other disciplines in many respects. One can easily observe it in one's daily life.

1.5.3 Environmental Psychology and General Psychology

Environmental Psychology emphasises on the studies of the effect of physical environment such as: the heat, noise, crowding, upon behavior, feeling and health of people.

General Psychology is the broad branch of psychology which seeks to discover the laws and principles that apply to persons in general, which is opposed to differential psychology which finds the way in which people differ.

1.5.4 Enviromental Psychology and Human Engineering

Human engineering is a multidisciplinary field incorporating contributions from various fields including psychology, engineering, industrial design and anthropometry. It deals with the properties of human capability. The human factor in human engineering is a physical property of the individual which is specific to the person and influences the human environment equilibriums. Human factors refer to all aspects of the ways in which humans relate to the world around them with the aim to improving operational performance , safety etc . In one way the human engineering contributes to making the environemtn for the humans better. Thus it contributes to the tasks of environmental psychology.

1.5.5 Environmental Psychology and Applied Psychology

Applied Environmental psychology aims at better management of the environment for better life and psychological growth. It studies effective ways of conserving the natural environment, better ways of designing towns and cities and means of promoting environmental awareness among people.

Psychology has a great deal of application in town planning. Studies on how the community works, the psychological needs of the people and their likes and dislikes should be considered while planning the growth of towns. Since the environment shapes and limits behaviour, proper planning to ensure maximum satisfaction, efficiency and growth is essential.

1.5.6 Environmental Psychology and Community Psychology

Community psychology focuses on the influence of the social environment, whereas environmental psychology focuses on the influence of the physical environment. The overlap of community and environmental psychology involves the study of social processes in physical settings the psychology of social settings like the home, the workplace, and the school. Bronfenbrenner's (1989) ecological approach to human development has added a fuller understanding

of how the characteristics of one type of setting, such as the family, are altered by other factors in participants lives, such as occupational and educational settings.

Self Assessment Questions

9) Discuss the similarities and differences between environment psychology and biological sciences, architectural sciences.

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10) How is environment psychology related to general psychology.

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11) Environmental psychology and human engineering have a lot in common-discuss.

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12) Discuss the relationship between environment psychology and applied psychology and community psychology.

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1.6 LET US SUM UP

The environment has many view points. How we perceive and experience the environment in the psychological sense, how we modify and use it to fulfill our needs, how we change our behaviour in different situations and also in the changing system – all these would be very clear to us if we know about environmental psychology. The phenomenal environment of an individual is modified partly as the phenomenal self. Survival of human species through adaptation with environment speaks of tremendous flexibility of the physiological and psychological system of man in accommodating environmental stress. The habit of living in a newly built-up environment prepares the internal environment

of human beings through reconditioning his homeostatic efficiency. Besides this, we have an experience which is a memory of days long gone by and therefore an aromatic feelings of nostalgia as well as emotional tinge and attachment to places or spaces which has been germinated since our childhood and which we persist throughout our life. With the changing environment we sometimes change our behaviour and attitude. Human being is moving rapidly to the realisation that the concept of the human environment must be based on the recognition that the world is a whole of which man is an integral part and must include not only the physical world around us but also our shelter, our communities and our total sense of well-being. In this unit we considered the definition and description of environmental psychology and put forward the characteristic features of the same. We then discussed the relationship of environmental psychology with many other related disciplines.

1.7 UNIT END QUESTIONS

1) What is environmental psychology?

2) Describe the characteristic features of environmental psychology.

3) Discuss the relationship between environment and human behavior.

4) In what ways the environment is negatively effected by humans? Critically analyse.

5) Discuss the relationship between environmental psychology and other disciplines.

6) Briefly discuss about the concept of environmental psychology.

7) Write in brief about the man-environment relationship.

1.8 GLOSSARY

Aesthetics : Features of an environment that leads to pleasurable responses.

Affect : Feeling or emotional status.

Barometric pressure : Atmospheric pressure as read by a barometer.

Climate : Average weather conditions or prevailing weather over a long period of time.

Cognitive map : The brain's representation of the spatial environment.

Congruence : The fit between user needs or preferences and the physical features of a setting.

Coping : Handling stressors, efforts to restore equilibrium after stressful events.

Crowding : Experimental state when the constraints of high density are salient to an individual

Determinism	:	A philosophical notion that circumstances have absolute casual relationship to events.
Distortion	:	Errors in cognitive maps based on inaccurate retrieval that leads us to put something too close together and some too far apart.
Ecological psychology	:	Barker's behaviour setting approach to studying the interaction between humans and their environment.
Environment	:	One's surroundings. It is used to refer to a specific part of one's surroundings, as in social environment, physical environment, natural or built environment.
Environmental assessment	:	Describing and evaluating environments, such as through EQI or PEQI methods or landscape preference methods.
Environmental cognition	:	The ability or propensity to imagine and think about the spatial world.
Environmental perception	:	How a person actually perceive the context in which he/she lives its rich interplay of social and physical elements.
Environmental psychology	:	The study of the interrelationship between behaviour and experience and the built and natural environment.
Environmental Quality Index (EQI)	:	Objective measures of environmental quality – the chemical and physical properties of water or air.
Health	:	A state of complete physical, mental and social well-being is a fundamental need and it is clearly related to physical environment.
High density	:	Situations characterised by high social or spatial density, a large no. of people in an area.
Inside density	:	Population density indices using "inside" measure, such as number of people per residence or per room.
Interpersonal distance	:	The distance between people.
Model	:	A relationship between concepts that is often based on analogies or metaphors.
Place	:	Place is a unit of environmental experience.
Place attachment	:	Psychological bonding to an environment.

Place-identity : It is that particular structure of the self-identity of the individual that consists of ideas, beliefs, memories, feelings and attitudes about spaces, places and their objects that define from moment and over time who and what the person is.

Perceived control : We belief that we can influence the things that are happening to us.

Perceived Environmental Quality Index : A subjective assessment of some characteristics of environmental quality as perceived by human behaviour.

Perception : The process by which one can extract meaning from the complex stimuli which we encounter in everyday life.

Personal space : A body buffer zone that people maintain between themselves and others.

Privacy : An interpersonal boundary processes by which people regulate interaction with others.

Psychological stress : The behavioural and emotional components to the stress model.

Social density : Manipulations that vary group size while keeping area constant.

Social support : The feeling that one is cared about and valued by other people.

Territoriality : A set of behaviour and cognitions an organism or a group exhibits which mainly based on perceived ownership of physical space or geographical area.

1.9 SUGGESTED READINGS

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