

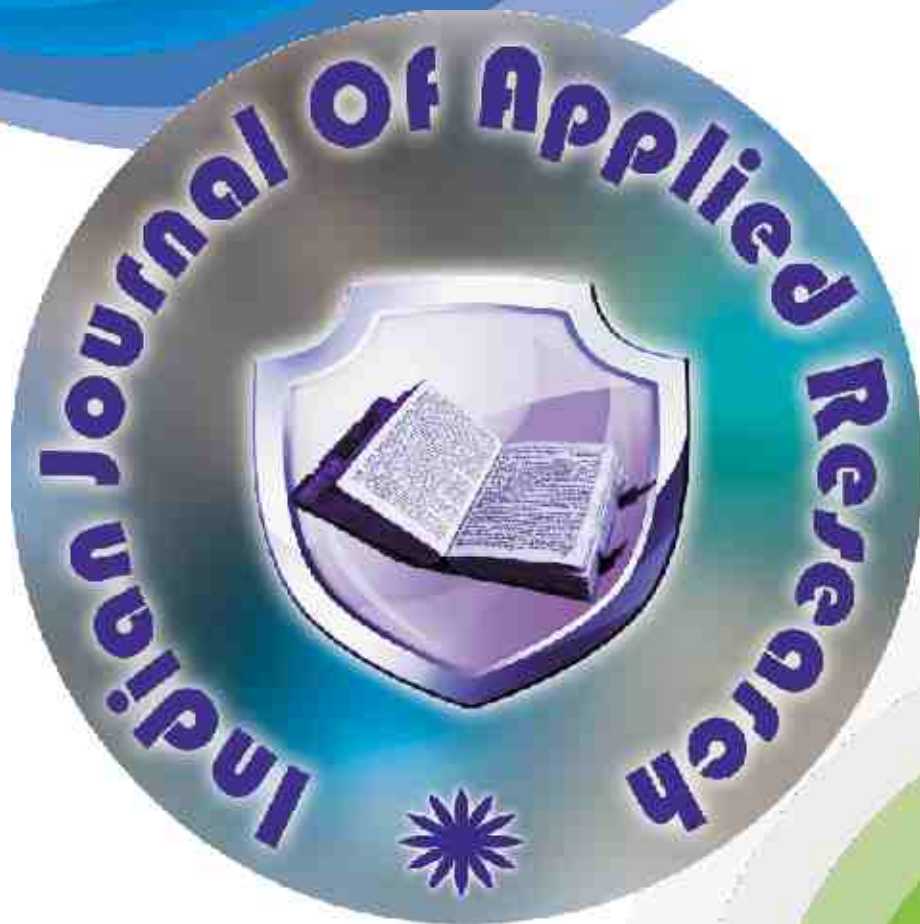
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# Index

Sr. No	Title	Author	Subject	Page. No.
1.	Assay Of Triphenylmethane Reductase Enzyme And PCR-Based Identification Of TMR Gene In Enterobacter Asbriae Strain XJUHX-4TM	Tina Mukherjee, Mounita Bhandari, Manas Das	Biotechnology	1-2
2.	An Analysis Of Growth Of Credit Card Industry	Dr. A. Vinayagamoorthy, K. Senthikumar	Commerce	3-5
3.	Impact Of Pre-Merger And Post Merger On Financial Performance (With Reference To Private Sector Banks)	Dr. Shital Vekariya	Commerce	6-8
4.	Relativity On Climate And Competencies In Human Resource Development With Reference To Neyveli Lignite Corporation Ltd,	S. Jayakumar. Dr. R. Ramachandran	Commerce	9-11
5.	Human Resource Outsourcing: A Strategy For Gaining Competitive Advantage	Dr. Santosh M. Singh	Commerce	12-13
6.	Relationship Between EVA And ROI And MVA (A Case Study Of Ten Manufacturing Industries In India)	Dr. Shivani Gupta	Commerce	14-15
7.	Modeling The Traits Of An Effective Teacher At Higher Education	Dr. Haridayal Sharma	Commerce	16-17
8.	Mahatma Gandhi National Rural Employment Guarantee Act (Mgnrega): Issues And Challenges	Dr. Mohd. Ashraf Ali, Mushtaq Ahmad	Commerce	18-20
9.	Standardisation And Grading	Viram. J. Vala, Dr. Vijay Kumar Soni	Commerce	21-22
10.	Profitability Of Selected Information Technology Companies In India	Dr. M. Jegadeeshwaran, C. Udaya	Commerce	23-25
11.	Emerging Trends In The Indian Media And Entertainment Industry	Dr Mahalaxmi Krishnan	Commerce	26-27
12.	Inventory Management Strategies And Control Techniques: An Empirical Investigation Of Small Scale Industries	Vipul Chalotra, Neetu Andotra	Commerce	28-30
13.	A Study On Performance Indicators Of Commercial Banks	Dr. G. Ganesan, P. Parthasarathy	Commerce	31-33
14.	Improved Approaches To Coreference Resolution In Machine Learning	Kuldeep Singh Raghuwanshi, Ashwini Kumar Verma	Computer Science	34-37
15.	Security Issues & Controls In Cloud Computing	V. Naga Lakshmi	Computer Science	38-40
16.	Human Development Index Of De-Notified Nomadic Castes In Maharashtra Division: A Study Of Jalna And Aurangabad Districts	Dr. Ashok Pawar	Economics	41-43
17.	Public Private Partnership In Rural & Urban Projects In India	Dr. Ashok S. Pawar, Dr. Shankar B. Ambhore	Economics	44-45
18.	Populace Insight On Development In Public Health Sector Of India Subsequent To Functioning Of National Rural Health Mission	Krishnakant Sharma	Economics	46-49
19.	Problems Of Rural Women Entrepreneurs In India: A Conceptual Overview	C. Jeyasri Usha N Devi, Dr. A. Sankaran	Economics	50-52
20.	Poverty Of Banjara And Vanjari Communities In India	Tidke Atish S., Dr. Pawar Ashok S.	Economics	53-54
21.	India And China: Economic Reforms And WTO	Dr. Surinder Kumar Singla, Dr. Kulwinder Singh	Economics	55- 56
22.	Implementing Life Skill Education Strategies In Teaching – Learning Process	R. Kalaiselvi, Dr. A. Palanisamy, Dr. A R. Saravanakumar	Education	57-59

23.	Utilisation Of Modern Technology By The Teachers In Pupil Processing Organisation	Dr. P.Paul Devanesan, Dr A. Selvan	Education	60-61
24.	Impact Of Vocational Training On Students	K.Sudha Rani, G.Umapathi, Dr. T. Ananda,	Education	62-63
25.	A Study On Emotional Intelligence Of Secondary School Teachers	Dr. Umme Kulsum, Prathima H.P.	Education	64-66
26.	The Efficiency Of Feedback Strategy Of Homework On The Development Of 10th Grade EFL Writing Skill In Al-Karak Educational Directorate	Majid Al- Khataybeh, Areej Al-Shourafa`	noitacudE	67-74
27.	Perspectives Of Stress Management In Education System	M. Meenakshisundaram, G. P. Raja, Dr. A R. Saravanakumar	Education	75-76
28.	Attention Regulation Of Meditators And Non-Meditators Of Class IX	G. Madhavi Kanakadurga, Dr. D. Vasanta Kumari,	Education	77-78
29.	Role Of Psychoeducation In Teaching – Learning Process	Dr. A R. Saravanakumar, Dr. A. Balu, Dr. S. Subbiah	Education	79-80
30.	Microcontroller Driven RGB Led System For Tristimulus Surface Colorimetry	T. N. Ghorude, A. D. Shaligram	Electronics	81-83
31.	Pmgsy And Rural Roads Development In India: Economic, Financial And Maintenance Issues	K.C. Manjunath	Engineering	84-86
32.	Routing Packets On A Chip.	Naren V Tikare	Engineering	87-89
33.	Finding The Nearest Neighbors In Biological Databases	Er. Pankaj Bhambri, Dr. O.P. Gupta, Er. Franky Goyal	Engineering	90-92
34.	Factors Affecting The Sustainability Of The Asphalt Roads: A Case Study Of Irbid Inner Ring Road, Jordan	Eng. Nasr Ahmad Dr. Mihai Iliescu	Engineering	93-94
35.	Physical And Chemical Testing Of Compounded PVC	Sapna Dabade, Dr. Dheeraj Mandloi, Deepak Khare	Engineering	95-96
36.	Impact Of Organic Farming On Yield Of Some Common Crops- A Case Study.	Namrata D. Awandekar	Environmental Science	97
37.	Hydrogeologic Settings Of The North And South Brahmaputra Plains In Upper Assam: A Comparative Study	Dr. Uttam Goswami	Geology	98-100
38.	To Study Staffing Pattern In Rajasthan Public Healthcare Delivery System.	Dr. Ashwin G. Modi, Sushman Sharma	Healthcare	101-105
39.	Work And Health: A Situational Analysis Of Factory Workers	Dr. S. S. Vijayanchali, Dr. E. Arumuga Gandhi	Home Science	106-108
40.	Performance Of Camel Kid Hair: Acrylic Blended Yarn And Knitted Fabric	Suman Pant, Anjali Sharma	Home Science	109-110
41.	Impact Of Holistic Nutrition Education Package On Diabetes Mellitus Control In Middle Aged Women	Dr. Anjali Rajwade	Home Science	111-112
42.	Assessment Of Relationship Between Ida And Personal Hygiene, Nutritional Knowledge And Dietary Practices In Adolescent Girls	Dr. Anjali Rajwade	Home Science	113-114
43.	Employee Attrition And Retention In Private Insurance Sector– A HRM Challenge	Dr. J. Senthil Vel Murugan, S.Bala Murugan	Human Resource Management	115-117
44.	A Study On Impact Of Unionism On Industrial Relations In Manufacturing Sector	Jaya Ahuja	Industrial Relations	118-120

45.	Augmentation Of India's Foreign Exchange Reserve: An Analysis	Dr.S P.Mathiraj, Ar.Annadurai	International Business	121-123
46.	Films – A Techno Literary Art Form	Dr. Dipti Mehta	Literature	124-125
47.	Indirect Models Of Reading To Develop Descriptive Writing	Dr. K. Madhavi	Literature	126-128
48.	Ramkrishna Mishra Ke Upanaso Me Rajnetaik Chetavni	Dr. Sanjay Rathod, Dilip Jhadav	Literature	129
49.	Hindi Kavita Me Nari Jivan Ka Badla Swarup	Dr. Sanjay Rathod	Literature	130
50.	Impact Of IPL Sponsorship On Consumer Buying Behavior With Reference To Nagpur City	Chandrima Das	Management	131-135
51.	Crowd Sourcing –A New Management Mantra	Devi Premnath, Dr. C. Nateson	Management	136-137
52.	Small Scale Industries In India: An Evaluation Of Productivity In The Post-Liberalized Scenario	Dr. Gaurav Lodha,	Management	138-139
53.	Comparative Analysis Of Milk Products With Respect To Its Competitors With Special Reference To Karnataka Milk Federation (KMF) – At Dharwada City, Karnataka, India	Dr. N. Ramanjaneyalu	Management	140-143
54.	A Study On Work Stress In Women Employees In Coimbatore District	R. Maheswari, N. Brindha	Management	144-145
55.	Accounting For Carbon Credits	Dr. Gaurav Lodha	Management	146-148
56.	A Literature Review On The Relationship Between Training (As A Core Responsibility Of HRM) And Firm Performance.	Priya Sharma, Dr. S. L. Gupta	Management	149-152
57.	A Study On Agricultural Marketing Practices And Constraints With Special Reference To Paddy / Rice.	CM Maran, Dr Raja Pranmalai	Management	153-156
58.	Performance Of Share Price Of Indian Public Sector Banks And Private Sector Banks - Comparative Study	V. Prabakaran, D. Lakshmi Prabha	Management	157-158
59.	Intuitionistic Fuzzy Primary And Semiprimary Ideal	Dr. M.Palanivelrajan, S.Nandakumar	Mathematics	159-160
60.	Significance Of Umbilical Artery Velocimetry In Perinatal Outcome Of Fetuses With Intrauterine Growth Retardation.	Dr G S Shekhawat	Medical Science	161-163
61.	Large Adult Sacrococcygeal Teratoma: A Case Report And Review Of Literature.	Dr.Yavalkar Pa, Dr. Naik Am.	Medical Science	164-165
62.	Epidural Steroid In Low Back Ache	Dr. B. L. Khajotia, Dr. Neelam Meena	Medical Science	166-167
63.	A Comparative Study Of Second Trimester MTP With Use Of Vaginal Misoprostol And Extra Amniotic Instillation Of Ethacridine Lactate.	Dr. Ketaki Junnare, Dr. Sameer Darawade, Dr. Priyamvada Shah, Dr. Swati Mali.	Medical Science	168-169
64.	A Novel Surgical Approach For Treatment Of Sui –TVT Obturator Tape	Dr. Ketaki Junnare, Dr. Durga Karne, Dr Neelesh Risbud.	Medical Science	170-171
65.	Advantage Of Fallopian Tube Sperm Perfusion Over Intra-Uterine Insemination When Used In Combination With Ovarian Stimulation For The Treatment Of Unexplained Infertility.	Dr G S Shekhawat, Dr Pushpalata Naphade	Medical Science	172-175

66.	"Bilateral Sertoli-Leydig Cell Tumor In Postmenopausal Female" A Case Report	Dr. Priyamvada Shah, Dr. Ketakijunnare, Dr. DurgaKarne	Medical Science	176-178
67.	Pretreatment With Ephedrine For Prevention Of Pain Associated With Propofol Injection.	Dr. Kavita U Adate, Dr. Jyoti A. Solanki	Medical Science	179-181
68.	Does The Structured Teaching Programme Influence The Knowledge About Physical Wellbeing Of School Children? A Quasi Experimental Study.	Dr. S. Valliammal, Dr. Ramachandra, Raja Sudhakar	Nursing	182-184
69.	An Approach For Information Retrieval For Bookstores Using Formal Ontology	Sumit Jain, C.S.Bhatia	Ontology	185-187
70.	Analgesic Activity Of Anacardium Occidentale	A. Devadoss, C. Aparna, K. Parimala, D. Sukumar	Organic Chemistry	188-190
71.	Behaviourism : Science Or Metaphysics	Dr. Jatinder Kumar Sharma	Philosophy	191-193
72.	Multi-Dimensional Perspectives Of Obesity And Its Management	S. Dhanaraj, Dr. A. Palanisamy	Physical Education	194-196
73.	Refractive Index, Density, Excess Molar Volume, Excess Molar Refraction For Liquid Mixtures (Ethyl Ethanoate + Benzene Derivatives) At Different Temperatures	Sheeraz Akbar, Mahendra Kumar	Physics	197-199
74.	Refractive Indices, Densities And Excess Properties For Liquid Mixtures (Cetane + Alkanols) At Different Temperatures	Sheeraz Akbar, Mahendra Kumar	Physics	200-202
75.	Capacity Building For Effective Local Governance: Indian Perspectives	Dr. Pralhad Chengte	Political Science	203-205
76.	Psychological Well-Being: A Study Of Non-Institutionalized Aged	Dr. Pankaj S. Suvera	Psychology	206-208
77.	Women Empowerment Through N R E G S (With Reference To State Of West Bengal)	Dilip Kumar Karak	Social Sciences	209-211
78.	Effect Of Selected Yogic, Aerobic And Laughter Exercises On Blood Pressure Of High School Boys	Dr.Manjappa.P, Dr.Shivarama Reddy. M	Sports	212-216
79.	Association Study Between Lead And Copper Accumulation At Different Physiological Systems Of Goat By Application Of Canonical Correlation And Canonical Correspondence Analyses	Partha Karmakar, Debasis Mazumdar, Seema Sarkar (Mondal), Sougata Karmakar	Statistics	217-219
80.	Development Of Silver -Silica Nanocomposite For Novel Humidity Sensing Application	Surender Duhan	Technology	220-221



## Behaviourism : Science or Metaphysics

\* Dr. Jatinder Kumar Sharma

\* Assistant Professor, Department of Philosophy, Punjabi University, Patiala

### ABSTRACT

*Behaviourism originated primarily as a methodological movement. It represents an attempt to apply the methods of natural sciences to human behaviour. Behaviourists insist that whatever human beings do is just a part of natural causal nexus, hence, human behaviour and conditions of which it is a function are describable in physicalist language. Any subject matter which cannot be put into naturalist language is rejected as traditional fiction, superstitious and metaphysical. Present paper seeks to examine whether behaviourist enterprise can be described as scientific, or else behaviourists are presenting their own metaphysical speculations as scientific findings.*

**Keywords : Conditioning; falsifiability; pseudo-science; metaphysical.**

Humans have a unique and ambiguous relation with the natural world. The relationship is unique in the sense that human beings are not only a part of the nature, rather through creative interaction, have humanized the world also. In a sense they have constituted a world of their own - which is and is not part of the natural world at the same time. Attempts have been made from divergent perspectives to understand the nature of human reality as well natural world. The problem of relationship between the natural world and human reality has also been evoking keen interest which has found expression in different formulations with some thinkers trying to see nature in the image of humans and others visualising humans in the image of nature. Behaviourism is an instance of naturalist approach to human reality. It seeks to reduce human reality to physical processes and states.

Behaviourism originated primarily as a methodological movement. Its genesis lie in general intellectual atmosphere of the times. After renaissance, with the rise and success of natural sciences, the upholders of methodological monism and unified science called for a scientific methodology which can be used in any 'respectable' enquiry. A powerful protest was launched against metaphysical enquiries under the influence of positivism. These enquiries with their speculative method were considered no better than earlier superstitions. Speculation was considered to be a futile attempt of reason to deal with matters of fact which could never result in knowledge but only in conjectures and guess work indicating a thinkers personal opinions, preferences and choices. As a result only those enquiries were considered respectable which followed scientific method as against speculative method of metaphysics. Though there were differences of opinion regarding exact steps, procedures and criteria of scientific method, but in anti-speculative atmosphere of the times, when anything that was not based on observation was considered suspect, the method of science as conceived by the observationalists had a strong appeal. Observationalists (also referred to as empiricists and inductivists) view the aim science as the quest for explanation of events and processes through the method of observation and experimentation, primarily to predict and control them. According to these exponents of scientific method, an event or process is considered to be explained if and only if it has been subsumed

under some causal law. The knowledge of these general laws helps in prediction and control of various events or processes pertaining to that phenomenon. This view of scientific method was accepted as the paradigm method for any 'positive' enquiry. Attempts were being made to reduce the domain of significant issues to those issues only which could be embraced by this method. The subject matter and boundaries of academic disciplines were being redefined to meet the requirements of 'the scientific method'.

All these concerns are reflected in the tenets of behaviourism systematized by J.B. Watson, but elaborated, strengthened, revised and defended most strongly by B.F. Skinner. The present paper seeks to consider their proposals in detail. Section I proposes to analyse the nature of their assumptions in order to consider their claims of being crusaders against metaphysical speculations; and section II endeavours to examine the self-proclaimed scientific status of behaviourist enterpriser.

I

As pointed, behaviourism represents an attempt to apply the methods of natural science, as conceived by empiricists, to the human reality. Behaviourists hold that all the entities in the universe are physical entities, hence, they all follow physical laws and all meaningful statements cannot be anything but statements about physical objects, events and processes. Any subject-matter which cannot be put into physicalist language and which cannot be dealt by the methods of science is rejected as 'traditional fiction', 'superstitious' and 'metaphysical'. Since only physicalist explanations are valid, to resort to explanations in terms of non-physical events' is to offer a 'fictional explanation' (Science and Human Behaviour hereinafter SHB, 278). They invoke the authority of science in support of their views and insist that they are not interested in metaphysics. Though many of their claims are presented in such a manner that they appear to be empirical and factual, but more often than not they are based on assumptions about the aims and objectives of scientific analysis of human behaviour. They concede that at present science of behaviour is not able to explain all phenomena related to human behaviour, but they contend that it is a science in progress.

They further insist that it is in the nature of scientific analysis to strip away all the functions assigned to thinking man in mentalistic explanations and transfer them to the controlling environment. In applying the methods of physical sciences to human affairs, behaviourists tend to undermine the differences between the natural and human reality. For them, science of behaviour must assume that human behaviour, like physical phenomena, is lawful and determined. In Skinner's own words "if we are to use methods of science in human affairs, we must assume that behaviour is lawful and determined" (SHB,6). Since behaviourism undertakes to predict and control human behaviour, they argue, it cannot be assumed that behaviour has any peculiar property which requires special method and unique kind of knowledge. They do not consider statements containing mentalistic categories\* to be of any different nature and contend that all meaningful mentalistic statements are reducible to physicalist statements.

These claims are presented in a language that invokes the authority of science. But in expressing a preference for monism or dualism one is expressing not a scientific preference, but is giving expression to a metaphysical consideration. Therefore it needs to be stressed that in rejecting explanations involving the use of mentalistic terminology and in reducing the mentalistic vocabulary to the physicalist language, behaviourists are expressing their own metaphysical preference. Similar is the case with their a-priori assumptions about the nature of scientific discoveries. Their central claim that man is not free and human behaviour is determined is not based on study of facts. Rather it is an assumption without which science of behaviour cannot proceed. They present speculations based on questionable assumptions pertaining to their own metaphysical considerations as if they are scientific findings.

## II

Let us examine how behaviourists tend to proceed in their endeavour and analyse the basic concepts used by them. Skinner insists that behaviourists use categories which are operationally defined\*\* and have observational basis. They define their concepts in such a way as to make them useful for the control of behaviour. While answering 'What' questions, the science of behaviour looks for important dependent variables and in answering 'why' questions, an attempt is made to look for independent variables which control these variables (Cumulative Record, 49). For Skinner, the independent variables, or the causes of behaviour, lie ultimately in the environment -either in the immediate environment or in environmental history. The conditions in the immediate environment which cause the behaviour, i.e. the independent variables, are termed as 'stimuli' and the Units of behaviour under their control, i.e. the dependent variables, are termed 'responses'. The bits of environment and behaviour are differentiated as specific or distinct 'stimulus' and 'response' in such a way as to get causal laws and smooth functional curves between them. By controlling the independent variables the dependent variables are sought to be controlled through classical conditioning. The principle of classical conditioning was introduced in behavioural analysis by J.B. Watson and was propounded by Pavlov in the context of animal studies. According to the principle, certain response gets associated with certain stimulus, which originally does not call out the eliciting of that response, through its association with the stimulus which originally called out that response. Skinner calls it respondent conditioning as it explains the behaviour which is preceded by a particular stimulus and is a response to it, i.e. the respondent behaviour. This behaviour, Skinner says, is termed involuntary in everyday discourse.

There are large segments of human behaviour, generally termed as voluntary behaviour, where behaviour does not always seem to be preceded by any particular stimulus and which instead of being an effect of the immediate changes in the environment, effects the environment itself. Skinner tried to explain voluntary or purposive behaviour by the principle of operant conditioning. He observes that there are bits of behaviour which have some effect on the surrounding world.

The consequences of such a behaviour may 'feed back' into the 'organism'. Some consequences may have the effects identified by the common man as reward, which in Skinner's technical terminology are 'reinforcing'. He operationally defined the reinforcing event as the "event which strengthened behaviour" (SHB,65). Some reinforcer may be used in laboratory situations to increase the frequency i.e. the probability of a particular type of behaviour. He discusses the example of a pigeon which is given a food pellet on every occasion it raises its head to a particular height. The food becomes a consequence of raising the head to a particular height. Since, in the past, this behaviour has produced food so it is also likely to be repeated in future. In this way, according to Skinner, an event may become contingent upon particular type of behaviour without getting associated with any particular prior stimulus. The environment of pigeon is not being changed in order to make it 'emit' the upward movement. Skinner observes that since we cannot predict and control the response which has already occurred, we can do so only with similar responses in future. Thus, the important unit is not a response but a class of responses. He uses the term 'operant' to designate this class. "The term emphasises the fact that behaviour operates upon the environment to generate consequences... . A single instance in which pigeon raises head is a response ...[and] the behaviour called raising the head regardless of when specific instance occurs is an operant" (SHB. 65). In the above experiment food is the reinforcer and presenting food when a response is emitted, is the reinforcement. The change in the frequency with which the head is lifted to the height is the process of operant conditioning. Skinner insists that operant (voluntary) behaviour, like respondent (involuntary) behaviour can also be controlled. Whereas respondent behaviour can be controlled by controlling the antecedent conditions, operant behaviour can be controlled by controlling the consequences.

It can be seen that Skinner is seeking to explain human behaviour through notions and concepts developed in laboratory experimentations so as to bring it under experimental control. Let us see how much he succeeds in this effort. Take for example his basic concepts of stimulus and response. As we have seen, a part of environment and a part of behaviour is termed as a stimulus and a response only if they are causally related, i.e. if particular part of behaviour (response) is under the control of a particular environmental variable (stimulus). For example, if on seeing a red apple someone says 'red' then according to Skinner the response is under the control of stimulus 'redness', and if one says 'apple' then it is under the control of 'appleness'. But in this way we identify the stimulus only after hearing the response. Though in this way we can account for a large number of responses by identifying the controlling stimulus, but the term stimulus loses all the objectivity. Thus when we extrapolate notions and concepts developed in animal laboratories to the real life-situations, they become mere substitutes for terms used in everyday life discourse and cannot fulfill the aim of prediction and control.

It becomes evident that when used in real life situations, the laboratory terms lose their contrived precision and become mere homonyms of the laboratory terms. Mere use of technical terms cannot give scientific status to what behaviourists are saying about real-life situations. The establishment of causal relations presupposes the possibility of independent identification of the cause and effect. In case of causal analysis of human behaviour provided by the behaviourists, stimuli and responses -which are supposed to be the basis of entire analysis- cannot be identified and individuated independent of one another. We cannot know what current stimuli are, unless the individual responds and we cannot identify them independent of the responses. Moreover, in identifying and individuating the stimuli and responses, we are constrained to take into account the organism's perspective.



The environment is full of many features which may or may not be operating as stimuli for the 'organism'. Similarly, where one response ends and the other begins can not be determined independent of human organism's needs, perceptions and plans. The behaviourists can call any environmental feature a stimulus if it is possible for them to show some plausible connection between that feature and some behavioural response. Since stimuli and responses mutual imply each other reinforcement becomes a process internal to the 'organism'. This is a quiet return to a new form of condemned introspectionism which behaviourists had forcefully proposed to reject as 'traditional fiction'.

The intractable difficulties involved in the identification of stimuli and responses independent of one another rule out the possibility of evidence against the behaviourists' claims. For, in accordance with the response, the behaviourists, will always correlate it with some stimulating property of some object. Thus, behaviourists deny the admissibility of any evidence which can refute their central doctrine that response is caused by stimulus -which implies that behaviourism can never be falsified. But as suggested by Karl Popper (1959), a theory cannot be called scientific unless it in principle admits the possibility of evidence counting against it. Thus, it can be seen that behaviourism is not a scientific theory as it carries within itself the means of explaining away any evidence counting against it.

On the basis of above arguments, it seems plausible to question not only the scientific status at behaviourist enterprise, but also its claim of being crusader against

metaphysical speculations. Mere use of technical terms and methods of natural sciences cannot give scientific status to behaviourism. Wittgenstein's famous quote about psychology, that "it has experimental methods and conceptual confusions" (1972, 230), is even more appropriate for behaviourism. Rather than pursuing science, behaviourists end up doing pseudo-science and present their speculations based on questionable assumptions as if they are scientific findings.

#### Notes

\* For example 'jealousy' according to Watson refers to behaviour of "stiffening of whole body, clenching of hands, reddening and then blackening of face pronounced breathing, fighting, verbal recrimination etc." (1959, 194).

\*\* Bridgman introduced the term operationism in 1927. He asserted that concepts can best be understood in terms of manipulations and operations performed by the experimenter. He insists that "in general, we mean by a concept nothing more than a set of operations; the concept is synonymous with the corresponding set of operations" (1958, 5).

#### REFERENCES

Bridgman (1958) *Logic of Modern Physics*, New York: Mac Millan. | Popper, K. (1959) *The Logic of Scientific Discovery*, London : Hutchinson. | Skinner, B.F. (1953) *Science and Human Behaviour*, New York: Mac Millan. | (1959) *Cummulative Record*, New York : Appleton Century Crofts. | Watson, J.B. (1959) *Behaviourism*, Chicago : University of Chicago Press. | Wittgenstein, L. (1972) *Philosophical Investigations*, Oxford : Basil Black well.



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