EDUDOC SERVICES

CURRENT CONTENTS

NOVEMBER- 2018

LIBRARY AND DOCUMENTATION DIVISION

NATIONAL INSTITUTE OF EDUCATION,

National Council of Educational Research and Training

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Introduction

"**Current Contents**" prepared by Library and Documentation Division aims to identify the articles published in the learned journals received by the library in the month of November, 2018.

Current Contents are arranged alphabetically under the broad subject headings. It gives the details about the name of the Journal, volume, issue month and year of publication. It will be our endeavour to bring out this as a reference tool, which will make our readers aware about the current contents available in different learned journals of their subject of interest.

Current Contents will be useful to our faculty members in selecting/recommending relevant articles for their research.

Keeping in mind the integration of ICT and Digitisation, attempt has been made to provide the Web-link of the current issues, which will facilitate the readers to access the articles, except the '*' marked journal titles

We eagerly await to received your views and comments.

(Prof. Saroj Yadav)
Chairperson, LDD,
NCERT, New Delhi.

Sr. No.	Name of Journals	Vol.	Issue	Month	Year	Pages
	Biology					
1.	American Biology Teacher	80	7	Sep	2018	3
2.	Journal of Biological Education	52	4	Dec	2018	63
	Economics					
3.	Economist	429	9116 9117 9118 9119	3 Nov 10 Nov 17 Nov 24 Nov	2018	33-40
4.	Economic and Political weekly	53	43 44 45	27 Oct 03 Nov 17 Nov	2018	26-28
5.	Economics of Education Review	63 64 65 66		Apr Jun Aug Oct	2018	29-32
	Education					
6.	Bhartiya Adhunik Shiksha	38	1 2	Jul Oct	2017	8-11
7.	Educational Policy	32	6	Sep	2018	44
	Educational Psychology					
8.	Counseling and Values	63	2	Oct	2018	17
9.	Educational Psychology in Practice	34	4	Dec	2018	45
10	Journal of Educational Psychology	110	8	Nov	2018	68-69
	Educational Research					
11	Educational Action Research: an International Journal	26	4	Dec	2018	41
12	Educational Evaluation and Policy Analysis	40	3	Sep	2018	42
13	Educational Measurement: Issues and Practice	37	3	Fall	2018	43
14.	Indian Educational Review	54 55	2 1	Jul Jan	2016 2017	49-51
	Educational Technology					

15	British Journal of Educational Technology	49	5 6	Sep Nov	2018	Dec-18
16	Computers and Education	125		Oct	2018	15-16
17	Technology; Pedagogy and Education	27	3	Jun	2018	123
	Environmental Education					
18	Journal of Environmental Education	49	5		2018	70
	Geography					
19	The Geographical Journal	184	1	Mar	2018	46
20	The Geography Teacher	14	4	Oct-Dec	2017	47
21	National Geographic Magazine	6	4	Nov	2018	84-85
	Higher Education					
22	University News	56	44 45 46 47	29 Oct 5 Nov 12 Nov 19 Nov	2018	124-127
	Library Science					
23	IASLIC Bulletin	63	2	Jun	2018	48
	Linguistics					
24	समकालीन भारतीय साहित्य	39	199	Sep-Oct	2018	104-105
25	Indian Literature: Sahitya Akademi's Bi-Monthly Journal	62	5(307)	Sep-Oct	2018	54-56
26	Linguistics and Education	46		Aug	2018	75
27	Natural Language and Linguistic Theory	36	4	Nov	2018	86
28	अक्षर पर्व	23	5	Oct	2018	1-2
	Mathematics Education					
29	The Mathematical Intelligencer	40	3	Fall	2018	80
30	Mathematical Thinking and Learning	20	4	Oct-Dec	2018	81
31	Mathematics teaching in the Middle School *	24	2	Oct	2018	82-83
32	School Science and Mathematics	118	6	Oct	2018	108

33	Teaching Children Mathematics	25	2	Oct	2018	121-122
34	ZDM Mathematics Education	50	6	Nov	2018	128
	Physics					
35	American Journal of Physics	86	10	Oct	2018	4-5
36	Physics Education	53	6	Nov	2018	91-92
37	Physics Today	71	10	Oct	2018	93-94
38	Physics World	31	9 10	Sep Oct	2018	95-96
	Population Education					
39.	Daedalus	147	4	Fall	2018	24-25
	Psychology					
40	American Psychologist	73	7	Oct	2018	6-7
41	Journal of Applied Developmental Psychology	55 56 57 58		Mar-Apr May-Jun Jul-Aug Jul-Sep	2018	58-61
42	Journal of Applied Social Psychology	48	9	Sep	2018	62
43	Journal of Counseling Psychology	65	6	Nov	2018	64-65
44	Journal of Cross-Cultural Psychology	49	8	Sep	2018	66
45	Journal of Humanistic Psychology	58	5	Sep	2018	71
46	Journal of Vocational Behavior	108		Oct	2018	74
47	Psychological Bulletin	144	11	Nov	2018	101
48	Psychological Review	125	5	Oct	2018	102
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50	Current Science	115	8 9	25 Oct 10 Nov	2018	18-23
51	New Scientist	239	3194 3198 3199 3200	6 Sep 6 Oct 13 Oct 20 Oct	2018	87-90
52	Science	362	6411 6412 6413 6414	12 Oct 19 Oct 26 Oct 2 Nov	2018	109-116
53	Scientific American	319	5	Nov	2018	117-118

54	School Effectiveness and School Improvement	29	4	Dec	2018	106
55	School Science	52	2	Jun	2014	107
	Social Science					
56	Indian Journal of Gender Studies	25	3	Oct	2018	52-53
57	Journal of Democracy	29	4	Oct	2018	67
58	Man and Development *	40	3	Sep	2018	79
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63	Intellectual and Developmental Disabilities	56	5	Oct	2018	57
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	Teacher Education					
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66	Prathmik Shikshak	41 42	4 1	Oct Jan	2017 2018	97-100
67	Primary Teacher	41	1	Jan	2016	100A

अनुक्रम

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साहित्यिक-वैचारिक मासिक

अक्षर पर्व

संपादक

सर्वमित्रा सुरजन

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शब्द संयोजन
महावीर प्रसाद साहू
रूप सज्जा
किशोर सिंह

पत्रकार प्रकाशन प्रा.लि. के लिए प्रकाशक एवं मुद्रक शरद जैन द्वारा पत्रकार प्रकाशन प्रा.लि. रायपुर से मुद्रित एवं प्रकाशित

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रचनाकारों से निवेदन

1. सभी रचनाकारों से विनम्र अनुरोध है कि जहां तक संभव हो अपनी रचना ई-मेल से भेजने का कष्ट करें। यह आप और हम दोनों के लिए अधिक सुविधाजनक है।
2. कृपया रचना के अंत में अपना पूरा पता, मोबाइल नंबर और ई-मेल पता लिखने का कष्ट करें।
3. आपका फोटो और संक्षिप्त जीवन परिचय भी ई-मेल से भिजवा दें ताकि हम उसे सुरक्षित कर लें।
4. यदि आप साधारण डाक से प्रकाशनार्थ सामग्री भेज रहे हैं तो वह दिल्ली के पते पर भेजें।
5. अक्षर पर्व की अधिकतर प्रतियां डाक से भेजी जाती हैं यदि प्राप्ति में कोई व्यवधान हो या आपका पता बदल गया हो तो aksharparv@gmail.com इस पते पर ईमेल करें।
6. समीक्षा के लिए आपकी पुस्तकों का स्वागत है, किन्तु स्थान सीमित है। जिन पुस्तकों की समीक्षाएं स्वीकृत हैं, उनके प्रकाशन में भी समय लग सकता है, अतएव धैर्य रखें।

संपादक

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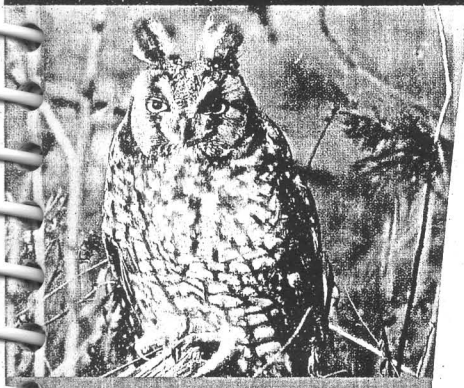
SEPTEMBER 2018

THE AMERICAN BIOLOGY TEACHER



About Our Cover

long-eared owl (*Asio otus*), also referred to as the northern long-eared owl, is an orange, brown, and white owl with bright, large yellow . This owl is not well-known and is a rarely seen and secretive owl that belongs to a group of known as typical owls. Long-eared owls are edium-sized owl about 30–40 cm in length with a wing span of 85–100 cm and a body mass 0–450 g, with the female being larger and er-colored than the male. These owls are known for their erect, tri-colored ear tufts of ers that presumably make them appear larger than they are.

Long-eared owls inhabit mostly dense forests open grassland or meadow habitats and hunt small mammals such as voles, mice, rats, and gophers as well as birds, bats, lizards, and es, mostly at night. These owls swallow their prey whole and then regurgitate indigestible s in pellets (usually one per day), which can found under their roosts. Such owl pellets are often prized by biologists and biology hers because they are a non-invasive way determine the diet of the owl and are a great teaching tool for laboratory exercises.

e long-eared owl is a resident of North America, Europe, and Asia. Like many birds, the long-eared owl tends to move north to breeding nds in the summer, then south during winter. These birds nest mostly in trees, but may also nest in cacti or on cliffs and may use doned nests of other birds. The female lays 7–10 eggs that she incubates 26–28 days while is fed by the male. The young owls can begin ake short flights at about 5 weeks of age. The conservation status of the long-eared owl t well-known, but declining populations suspected as a result of habitat loss. The owl pictured here was unexpectedly found and ographed sunning on a broken tree stump on the edge of its breeding range near Quesnel, British Columbia, in late autumn. Roy Rea, a gy instructor at the University of Northern British Columbia, in Prince George, BC, Canada, captured this photo on November 3, 2016, with a n 5D Mark 3 and a Canon 300mm/2.8 lens and 2x extender.

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Errata

The ABT editorial office has been notified of two errors in the article entitled "Scientific Methods of Biology, Starting with Charles Darwin," *ABT*, 78(2) (2016): 109–17. The author has asked that the following corrections be made:

Under the heading "Testing Darwin's Concept…"

- The first paragraph, second sentence should read: *The concept of "universal common ancestry (UCA) is a central pillar of modern evolutionary theory" (Theobald, 2010, p. 219); however, both the status and the nature of UCA have been questioned by several authors (Yonezawa & Hasegawa, 2010).*
- The second paragraph, second sentence (also quoting Theobald) should read: *Using model selection theory to identify the hypothesis closest to reality, he found that UCA is the most accurate and parsimonious hypothesis—"at least $10^{2.860}$ times more probable" than the competing hypotheses of independent or parallel origins of different taxa in the three domains of life (Eukarya, Bacteria, and Archaea).*

We apologize for any confusion or inconvenience caused by the errors included in the original article.

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Volume 86, No. 10
October 2018

Cover figure: Inexpensive probe stations to be used by students to characterize metal oxide semiconductor capacitors (MOSCAPs). For details see the article on p. 787.

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RUNNING IN CIRCLES LOOKING FOR A GREAT TEACHING JOB OR HIRE?

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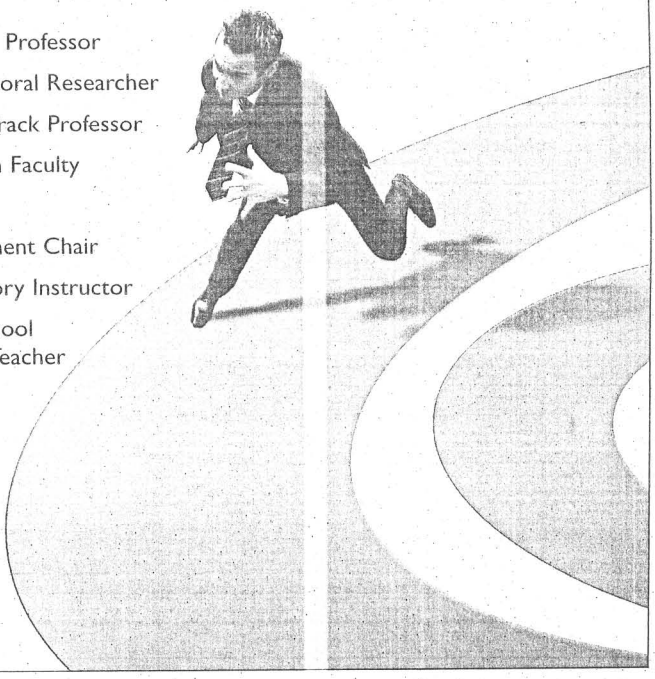
AAPT PHYSICS EDUCATION



AMERICAN PSYCHOLOGIST®

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On the cover: *Eleventh Avenue Walkers/Good Dogs, 2013, by Jacquie Green. Mixed media on panel, 18 inches by 18 inches and 18 inches by 24 inches. Courtesy of the artist, http://jacquiegreen.com.* *See p. 945 for more about Green and her art.*

Articles

843 Immigration Policy, Practices, and Procedures: The Impact on the Mental Health of Mexican and Central American Youth and Families
Stephanie A. Torres, Catherine DeCarlo Santiago, Katherine Kaufka Walts, and Maryse H. Richards

Mexican and Central American individuals bring a diversity of educational and professional skills to the United States, yet encounter the vicissitudes of a difficult sociopolitical climate that can create vulnerabilities, ranging from fear and mistrust to parent-child separations to poverty. Research has begun to investigate the impact of such policies on immigrants' mental health. The authors review this research and offer proposals for favorable policies and actions that may mitigate immigration-related stress.

855 Racial/Ethnic Discrimination and Well-Being During Adolescence: A Meta-Analytic Review
Aprile D. Benner, Yijie Wang, Yishan Shen, Alaina E. Boyle, Richelle Polk, and Yen-Pi Cheng

As a key period in which social–cognitive identity processes are worked through, adolescence is a time of keen perceptiveness to discrimination. The harmful nature of discrimination is well-established; however, most previous meta-analyses have involved adults and more global well-being measures. The current fine-grained meta-analysis examined the links between discrimination and specific indices of adolescent health, such as depression, academic motivation, and risky behaviors, across studies involving more than 90,000 adolescents.

884 Community-Based Participatory Research (CBPR): Towards Equitable Involvement of Community in Psychology Research
Susan E. Collins, Seema L. Clifasefi, Joey Stanton, The LEAP Advisory Board, Kee J. E. Straits, Eleanor Gil-Kashiwabara, Patricia Rodriguez Espinosa, Andel V. Nicasio, Michele P. Andrasik, Starlyn M. Hawes, Kimberly A. Miller, Lonnie A. Nelson, Victoria E. Orfaly, Bonnie M. Duran, and Nina Wallerstein

Community-based participatory research evolved in reaction to the positivist notion that people can be objectively studied in the laboratory. As individuals embedded in their communities, people belong to larger socially constructed identities. In CBPR, researchers and communities co-construct research questions and interventions in the dual pursuit of knowledge and action. This article introduces CBPR and presents a case study highlighting the capacity for more culturally appropriate research.

899 Big Data in Psychology: A Framework for Research Advancement
Idris Adjerid and Ken Kelley

Digital platforms have opened vast potential for research with big data, with the capacity to capture characteristics about thousands of individuals. As psychology scholars have begun to explore these resources, they have encountered both advantages and uncertainties. This article guides psychologists in judiciously working with large-scale data, through enhanced access to open-source data and digital platforms and by matching research goals to different kinds of data.

918 The Coelacanth Still Lives: Bringing Selection Back to the Fore in a Science of Behavior
W. David Stahlman and Kenneth J. Leising

Behavior is shaped by virtue of its past consequences in a manner analogous to Darwinian evolution by natural selection, an insight that has been underappreciated. The authors extend the principles of variation and selection to clarify the development of action. They highlight three levels of environmental selection – phylogenic, ontogenic, and cultural – and suggest that these provide a complete account of behavior.

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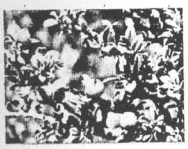

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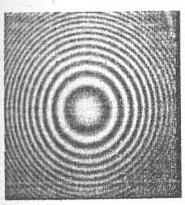

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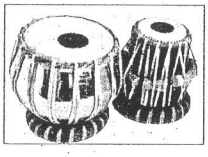

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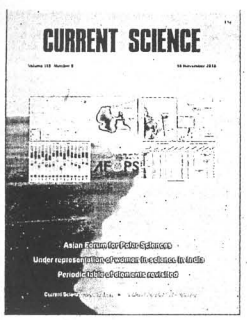

◀ COVER. Response of polar regions to climate change. See special section.

The Editor thanks Dr Rahul Mohan, National Centre for Polar and Ocean Research (formerly National Centre for Antarctic and Ocean Research), Headland Sada, Vasco-da-Gama 403 804, Goa, India and Dr Clemente Michael Wong Vui Ling, Biotechnology Research Institute, Universiti Malaysia Sabah, 88400 Kota Kinabalum, Sabah, Malaysia for agreeing to be Guest Editors for special section.

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Phyllis S. Bendell, Managing Editor and Director of Publications

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The front cover: When scientists appear in court today, they are not being persecuted for their scientific views, but what science tells them may be [illegible] or, worse, faulty analyses may prove more convincing than sound science. The challenge of getting courts to recognize and accept sound science is still with us. (Top) Joseph-Nicolas Robert-Fleury, *Galileo before the Holy Office*, 1847, Paris, Musée du Luxembourg. (Bottom) DNA sequencing gel © 2018 by Larry Mulvehill; witness testimony © 2018 by Hero Images Inc.

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12 The Supreme Court's verdict allowing girls and women between the ages of 10 and 50 to enter Sabarimala temple is examined, along with an analysis of the majority ruling. — ***Deepa Das Acevedo***

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16 Gross negligence of the safety of fisherfolk at sea due to lack of adoption of safety measures can be countered through awareness generation, mandatory training and community support. — ***A Suresh, V K Sajesh, A K Mohanty, M V Baiju, C N Ravishankar, M P Mohanan & C D Joshy***

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20 Migration from Barpeta in Assam to Lucknow has been adopted as a strategy to escape from the problems of flood, poverty, and even identity crisis in the native state. However, this strategy is still not good enough to live a decent life without fear. — ***Roli Misra***

From Calcutta to Ieper: Two Buildings with a Shared History

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61 ***Deblina Dey*** unravels the gains and losses of artisanal labour in the film *Sui Dhaaga*; Namdeo Dhasal's challenges to Brahminical literature through his works have been articulated by ***Yogesh Maitreya***; ***Sayantani Dasgupta*** notes the conspicuous absence of female characters and role models in Satyajit Ray's works for children; and Last Lines by ***Ponnappa***.

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12 Illiquidity arising from the use of short-term funds to finance infrastructure has pushed the IL&FS towards bankruptcy. — ***T T Ram Mohan***

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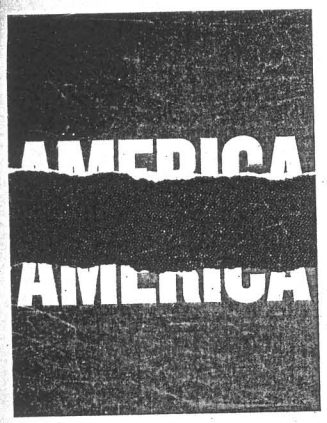

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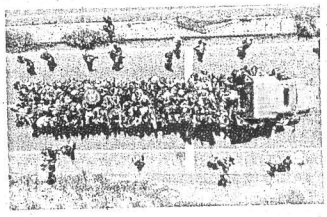

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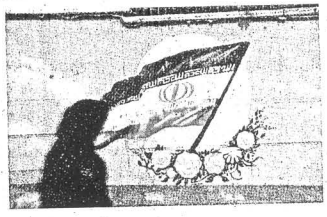

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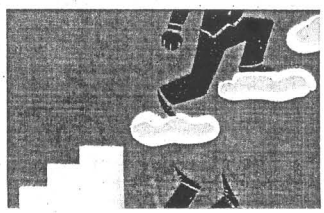

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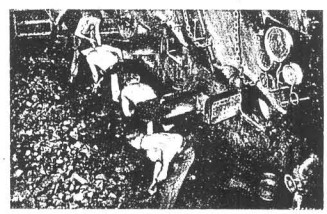

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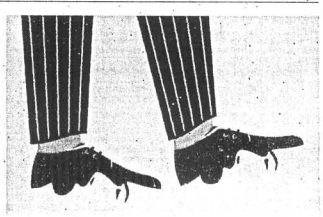

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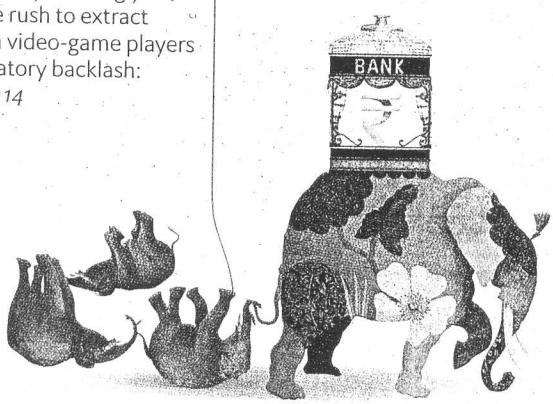

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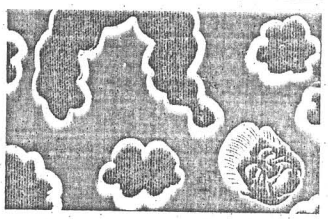

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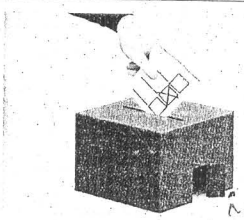

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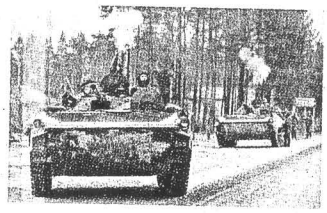

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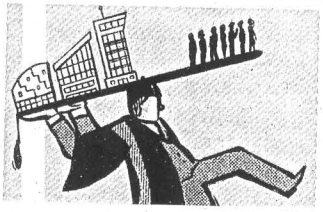

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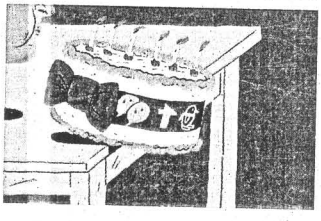

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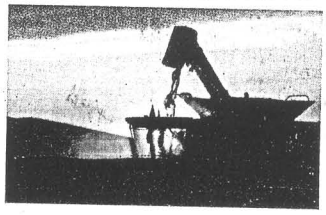

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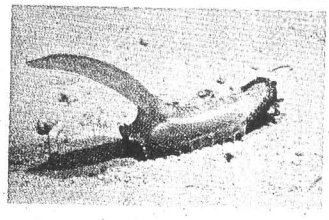

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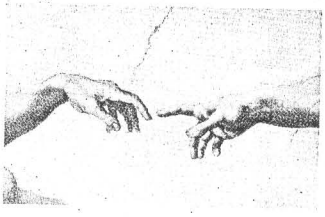

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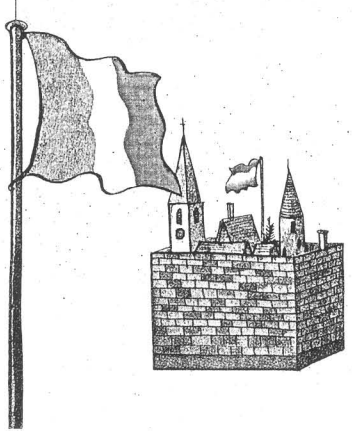

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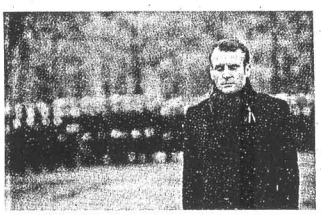

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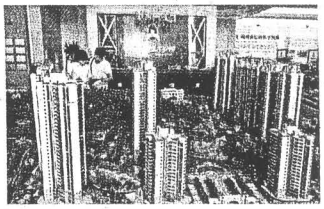

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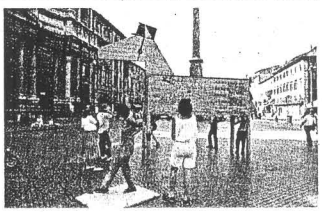

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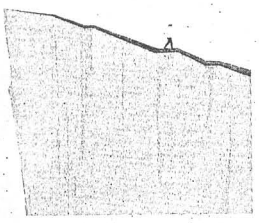

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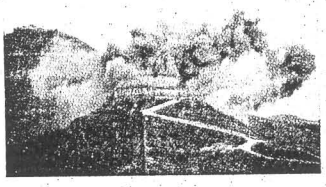

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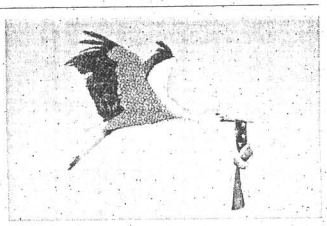

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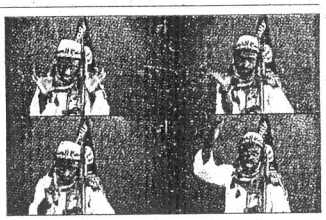

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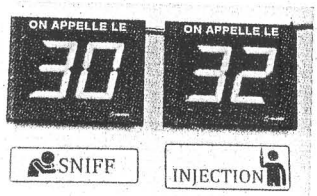

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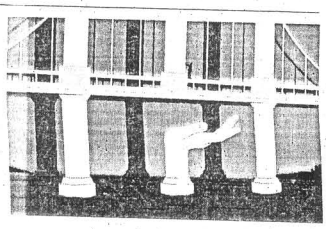

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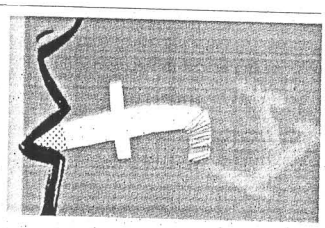

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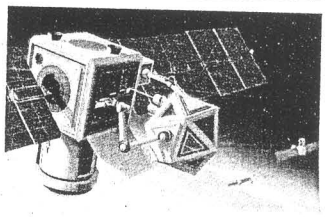

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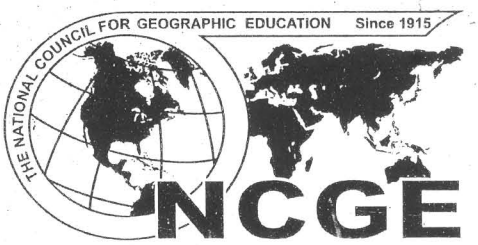

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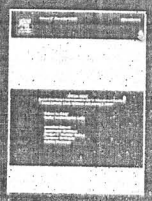

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669 Practice Recommendations for Addressing Racism: A Content Analysis of the Counseling Psychology Literature
Matthew J. Miller, Brian TaeHyuk Keum, Christina J. Thai, Yun Lu, Nancy N. Truong, Gloria A. Huh, Xu Li, Jeffrey G. Yeung, and Lydia HaRim Ahn

For people of color in the United States, racism is ubiquitous and insidious. Unfortunately, mental health professionals lack systematic guidance in addressing racism through practice. This study—the first of its kind—summarizes and evaluates practice recommendations for addressing racism in the peer reviewed counseling psychology literature and provides mental health professionals with strategies for addressing individual, group, and systemic racism.

681 Within-Person Relationship Between Career Goal Feedback and Career-Related Stress: A Weekly Survey Study
Shi Hu, Michelle Hood, and Peter A. Creed

This study suggests that poor feedback regarding a young person's strategies to reach their career goals lowers the person's self-beliefs in achieving the goals, which, in turn, elicits anxiety and stress. In addition, optimistic young people are more resilient to negative feedback regarding the person's career goal progress.

690 Illustrating Novel Techniques for Analyzing Single-Case Experiments: Effects of Pre-Session Mindfulness Practice
Marianne Stone, Myrna L. Friedlander, and Mariola Moeyaert

This study describes and illustrates how to conduct single-case experiments to understand individual differences in clients' responses to therapists. Analyses of two cases in which the therapists practiced mindfulness before beginning randomly scheduled therapy sessions showed differential effects on clients' and therapists' reports of the quality of the therapeutic process.

703 Moderators of Congruent Alliance Between Therapists and Clients: A Realistic Accuracy Model
Roei Chen, Eshkol Rafaeli, Eran Bar-Kalifa, Eva Gilboa-Schechtman, Wolfgang Lutz, and Dana Atzil-Slonim

Therapists appear to be more congruent with their clients in their assessment of the bond component of alliance, as opposed to their assessment of the therapy's goals or tasks. These findings highlight the need for greater communication regarding goals and tasks. In addition, the finding that therapists' affiliative tendencies are related to their ability to be congruent with their clients' alliance perceptions points to the importance of attending to therapists' personalities and their influence on therapy processes.

715 Development of the Self-Forgiveness Dual-Process Scale
Brandon J. Griffin, Everett L. Worthington Jr., Don E. Davis, Joshua N. Hook, and Shira Maguen

This article suggests that forgiving oneself following perceived transgression requires two processes: reorientation toward positive values and restoration of personal esteem. Each process is necessary for self-forgiveness to occur and helps explain how self-forgiveness might contribute to better physical and mental health, more responsible behavior toward others, and possible repair of ruptured relationships.

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727 Client Feedback in China: A Randomized Clinical Trial in a College Counseling Center
Zhuang She, Barry L. Duncan, Robert J. Reese, Qiwu Sun, Yanwei Shi, Guangrong Jiang, Caizhi Wu, and Alyssa L. Clements

Previous studies about the effects of client feedback, an intervention designed to identify clients not responding to psychotherapy to enable psychotherapists to restore treatment to a positive trajectory, have only been conducted in the United States or Europe. This study is the first to demonstrate the effects of improved outcomes and efficiency associated with a client feedback intervention in a Chinese setting.

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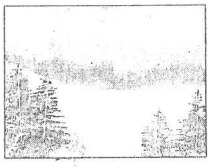

About the Artist: Andrew Dunn was diagnosed with dyslexia when he was nine years old, and he has attended the Luke Waites Center for Dyslexia at Texas Scottish Rite Hospital for Children for the last year and a half. Andrew is creative but would sometimes get frustrated when his art would not turn out the way he wanted it to. His dad and mom kept encouraging him to persevere, and one day, watching Bob Ross on Netflix, Andrew completed his first oil painting. He named it "Icebound Lands" because it reminded him of a land in a book he was reading at the time. For Andrew, reading and art both show that he can overcome difficulties. He is not afraid to try something new, because he has learned he may discover something new about himself!

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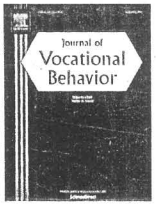

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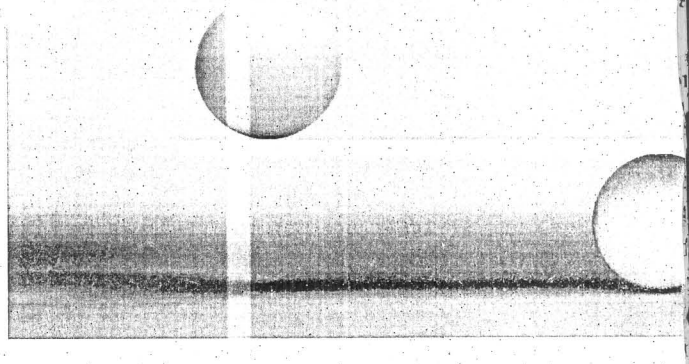

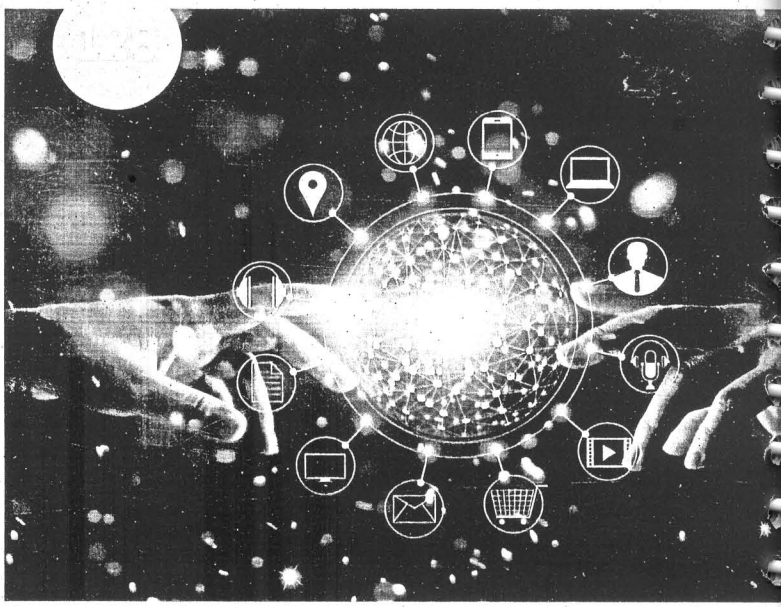

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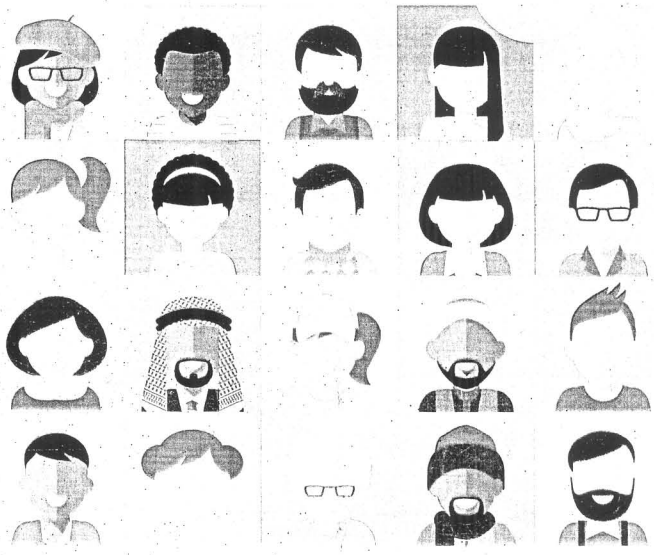

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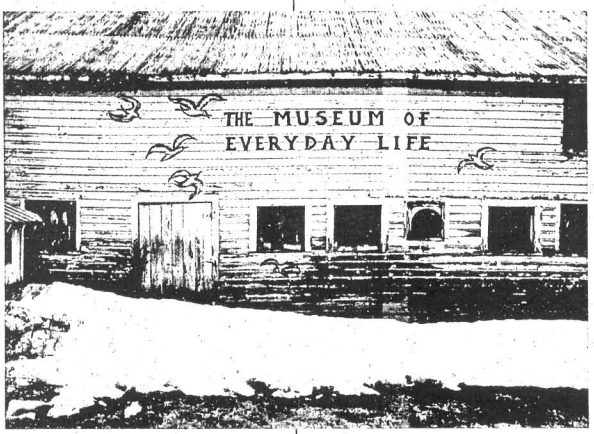

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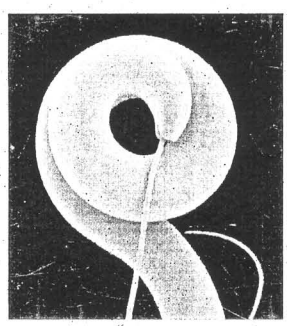

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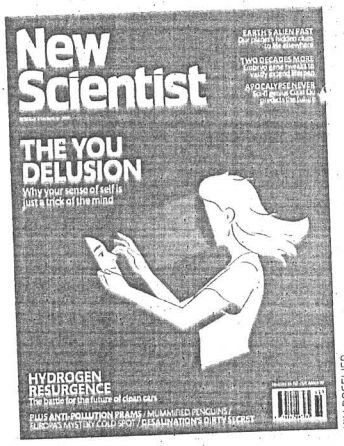

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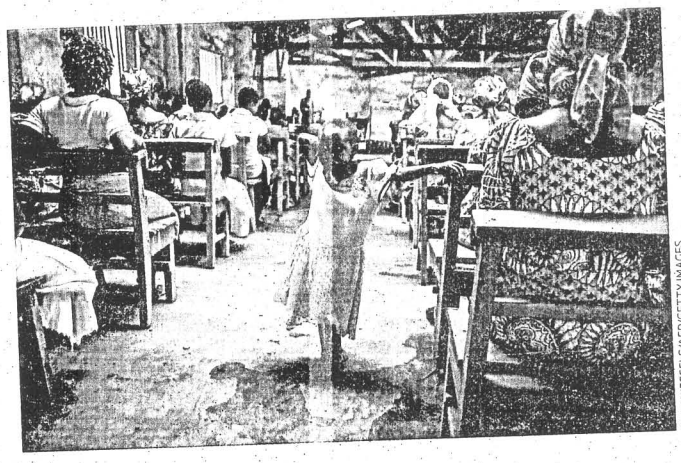

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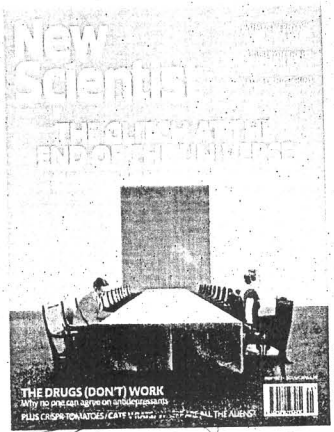

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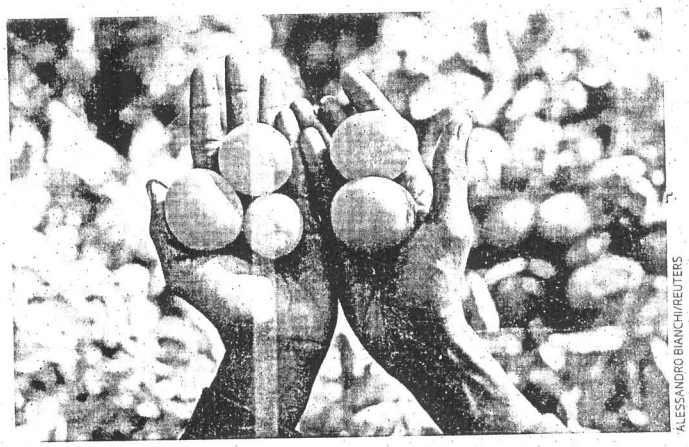

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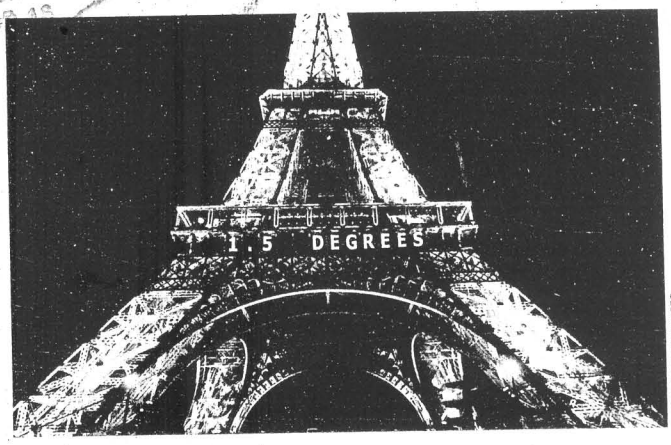

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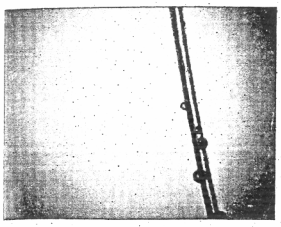

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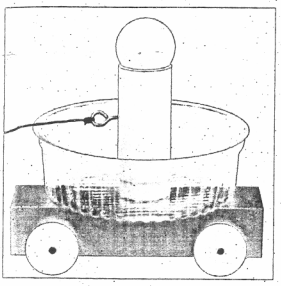

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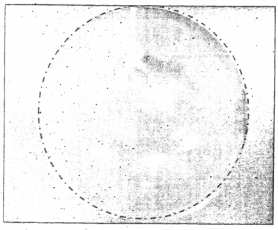

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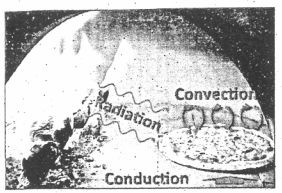

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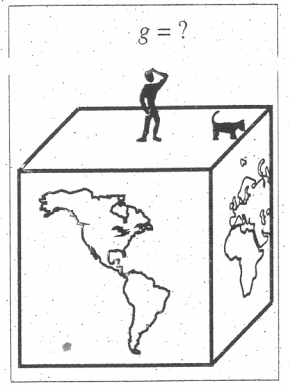

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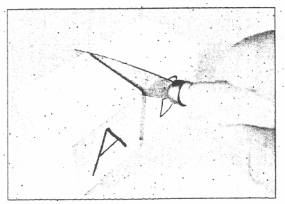
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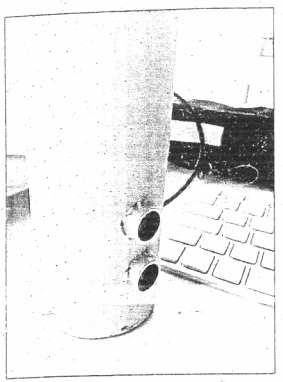
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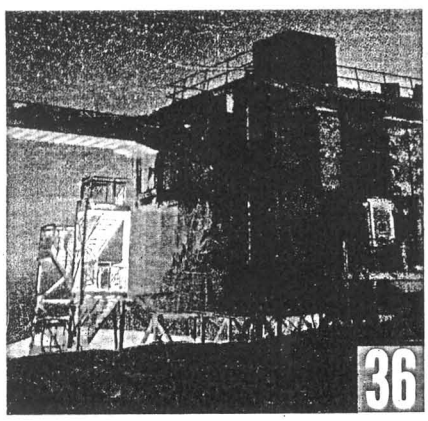

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What's behind a writer's rare choice to make a physicist a main character?

ON THE COVER: Harlem Renaissance painter Aaron Douglas (1899–1979) was a professor of art at Fisk University, a historically black university in Nashville, Tennessee. This painting, *Science*, is one panel in a mural that Douglas painted in Fisk's Cravath Hall. On **page 28**, Ronald Mickens writes about the life and career of another Fisk professor: physicist Elmer Samuel Imes (1883–1941), the second black man to receive a physics PhD in the US. Imes made major contributions to spectroscopy and was intimately involved with the intellectual circles of the Harlem Renaissance. (Photograph by Sydnei Patton.)

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Visit physicstoday.org to learn about the new Nobel laureates in the physical sciences; the physics prize will be awarded on 2 October. You can also explore physics Nobel history, including a database of nominees from 1901 to 1966 and a map charting where each laureate has lived and worked.

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Tom Lehrer

Before gaining fame as a satirical singer-songwriter, Tom Lehrer was a math graduate student at Harvard. In 1951 he stitched together songs he had written about science, math, and college life to create a musical, *The Physical Revue*. Lehrer spoke to PHYSICS TODAY about writing and performing the musical.

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Teenage scientists

The documentary *Inventing Tomorrow* follows science-fair competitors trying to save their communities from environmental damage. PHYSICS TODAY's Melinda Baldwin reviewed the film and interviewed director Laura Nix, who has set up a global educational campaign for mentoring young scientists.

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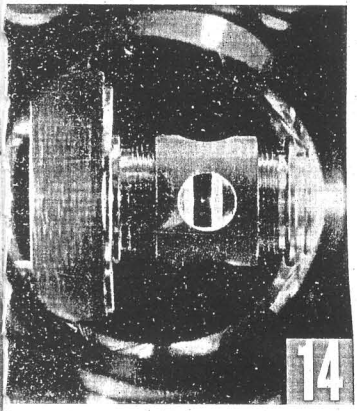

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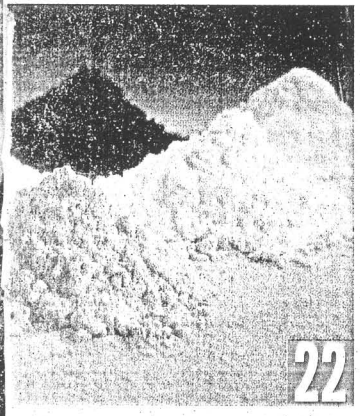

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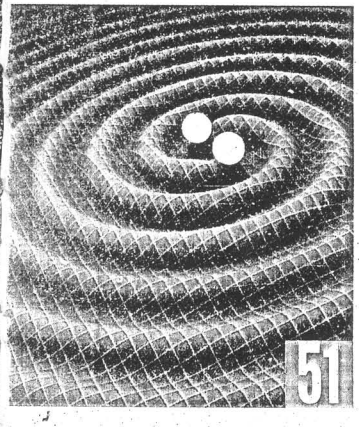

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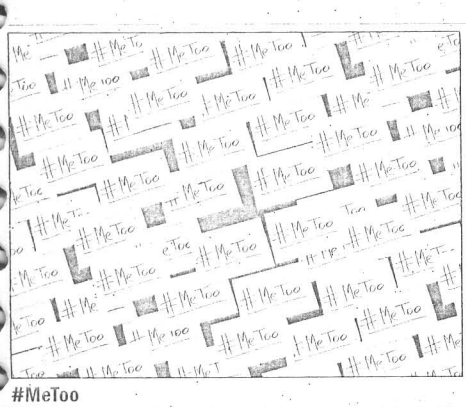

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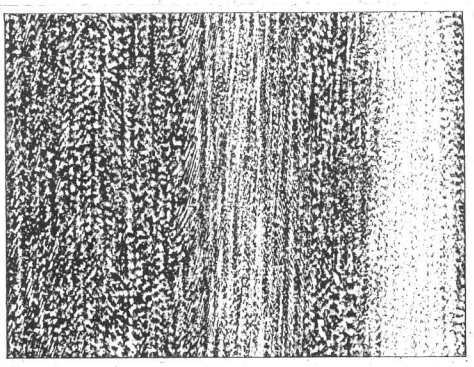

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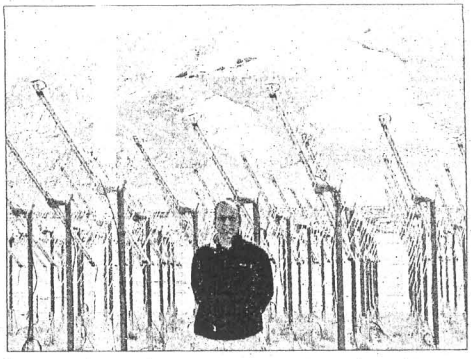

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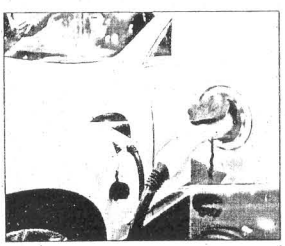

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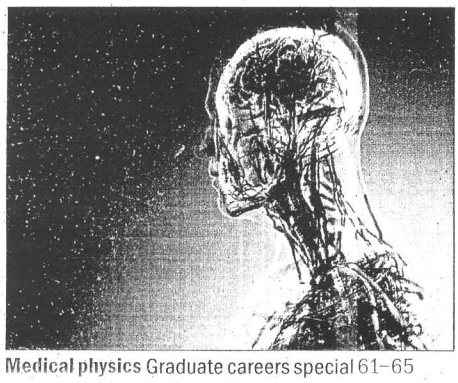

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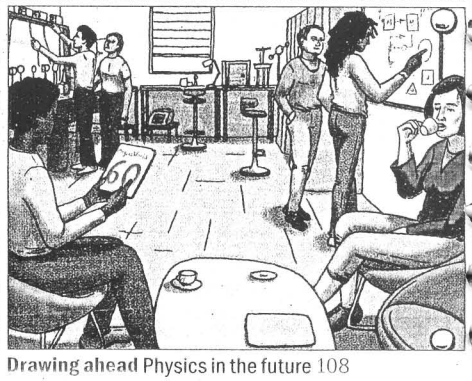

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विद्या से अमरत्व प्राप्त होता है।

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उपर्युक्त आदर्श वाक्य *ईशावास्य उपनिषद्* से लिया गया है जिसका अर्थ है–
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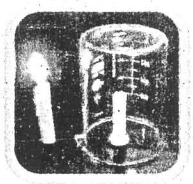

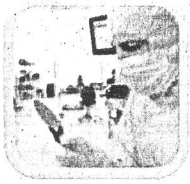

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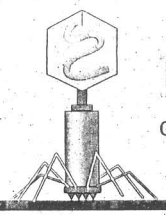

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Neurons of the brain find their places during development guided by internal programs and external interactions. This confocal microscopy image from a *Drosophila* larva shows the characteristic placement of neurons in the optic lobe. The neurons are organized in layers according to their birth order, with the color of each layer corresponding to its neurons' unique expression of transcription factors, as detected by immunofluorescence. This special issue highlights the behind-the-scenes forces and constraints that guide brain development. See page 170. *Image: Isabel Holguera, Claude Desplan laboratory*

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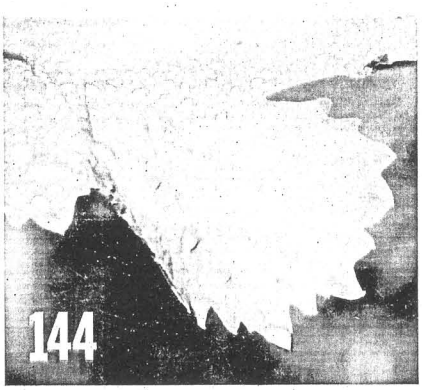

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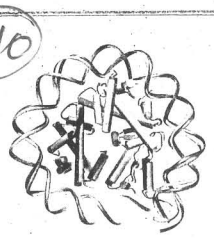

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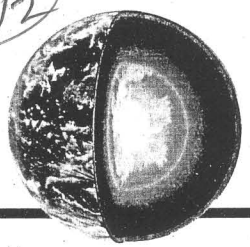

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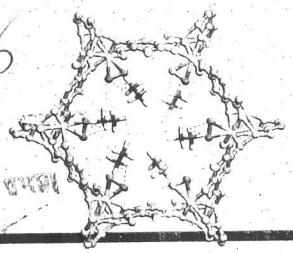

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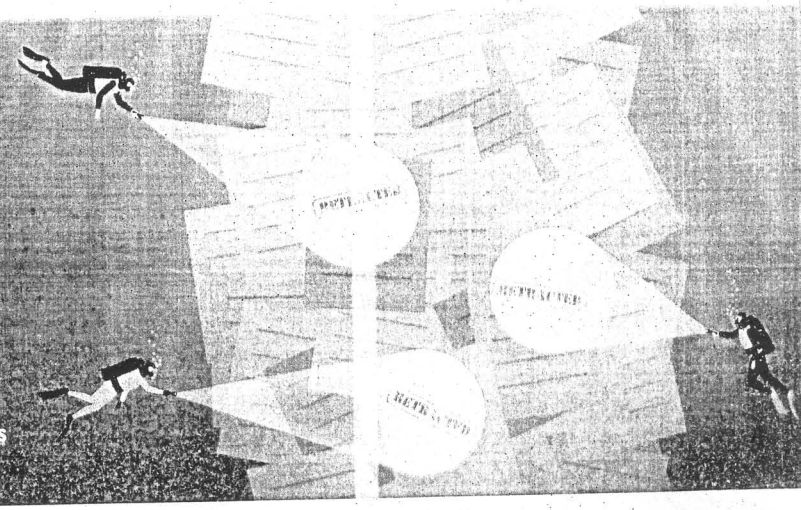

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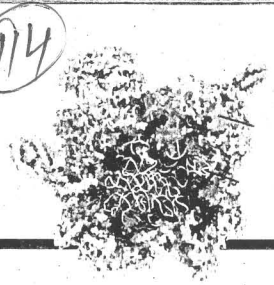

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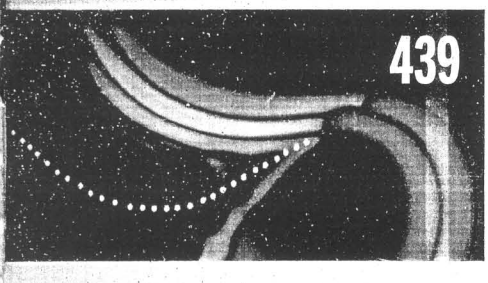

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Artist's rendering of chromatin (coiled structures) and DNA regulatory elements (yellow clusters) inside a cell's nucleus. The Cancer Genome Atlas (TCGA) Analysis Network profiled the complex accessible chromatin landscape in 410 cancer samples from 23 cancer types, substantially expanding the catalog of known DNA regulatory elements in cancer genomes and shedding light on how genetic mutations and epigenetic regulators work together to promote tumor development. See pages 401 and 420. *Image: V. Altounian*/Science

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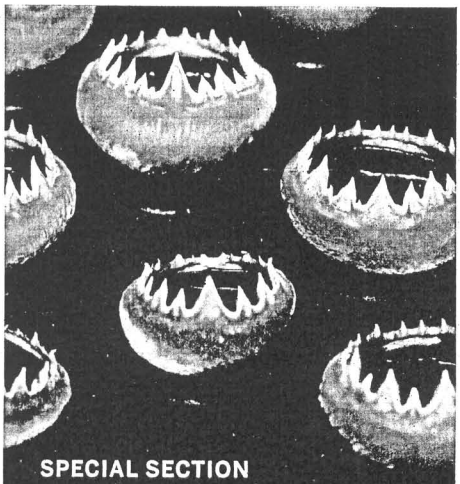

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This whimsical photo of a coconut turned into a car represents the increasing use of natural materials in commercial composites, particularly in the automotive sector. Coconut fibers (coir) and powdered coconut shells can be combined with a variety of polymers to make car parts, including door cladding, structural guards, and internal components. For more on the investigation and application of biological, hybrid, and carbon-based composite materials, see page 534. *Photo: Cary and Babs Wolinsky*

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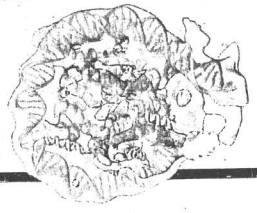

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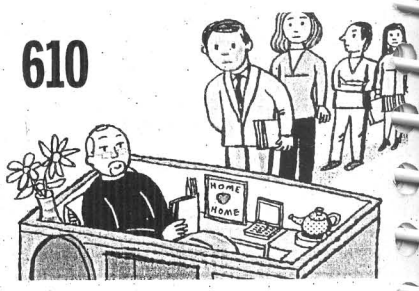

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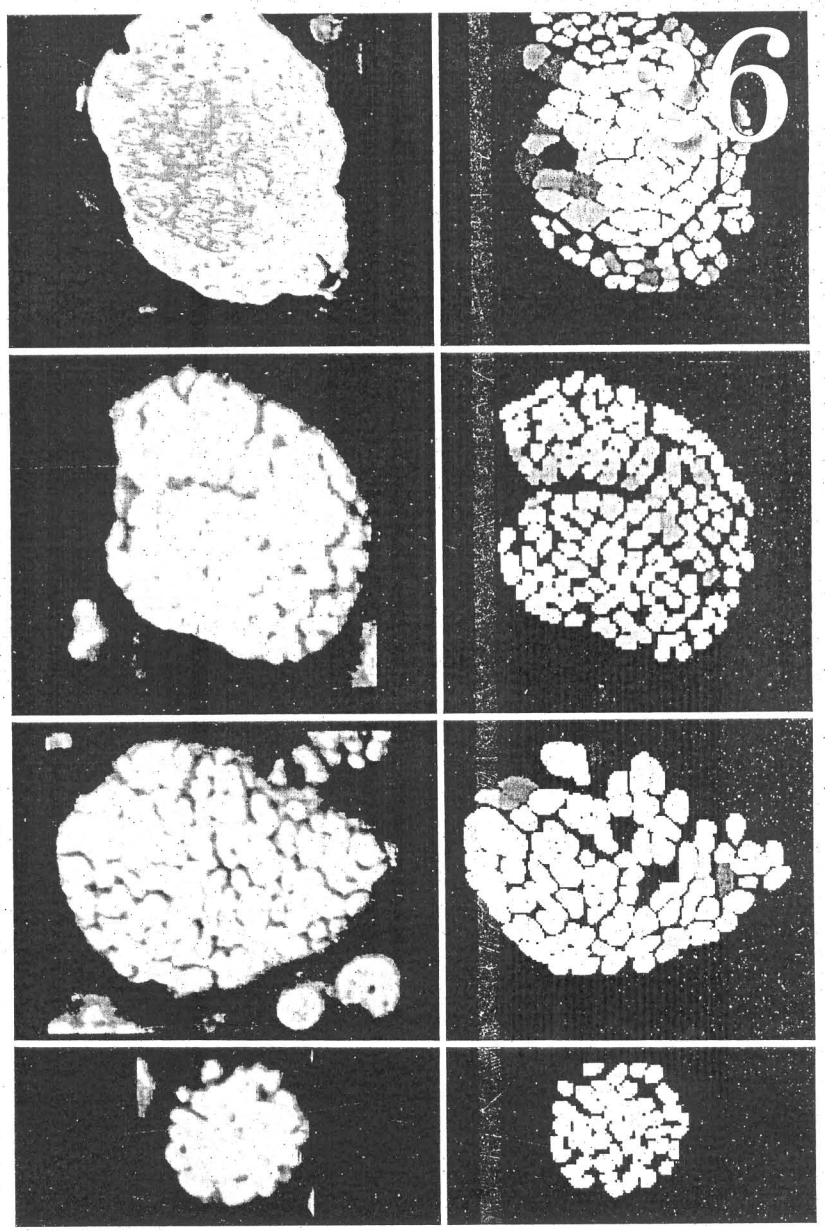
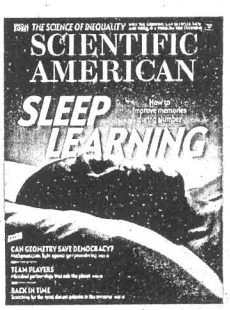


ON THE COVER

Learning while asleep turns up as a trope in novels and in popular culture. Now one form of sleep learning is getting a serious hearing in reputable neuroscience labs. The sleeping brain spontaneously reactivates existing memories. Researchers want to understand how these periods of off-line recall serve as de facto study sessions that help us remember what we learned during the day. Photograph by Hannah Whitaker.



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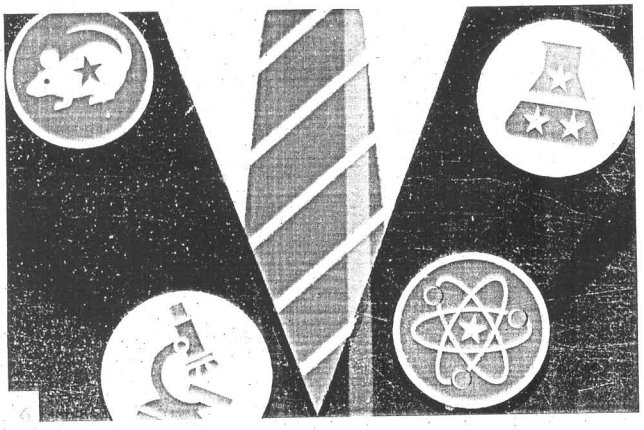

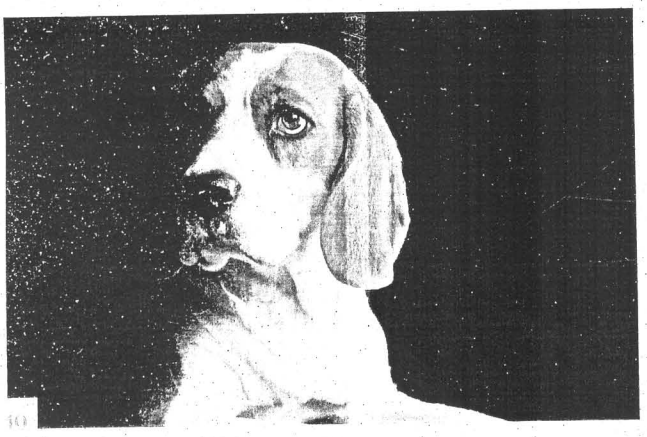

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a symposium on

whether the solution

is the problem

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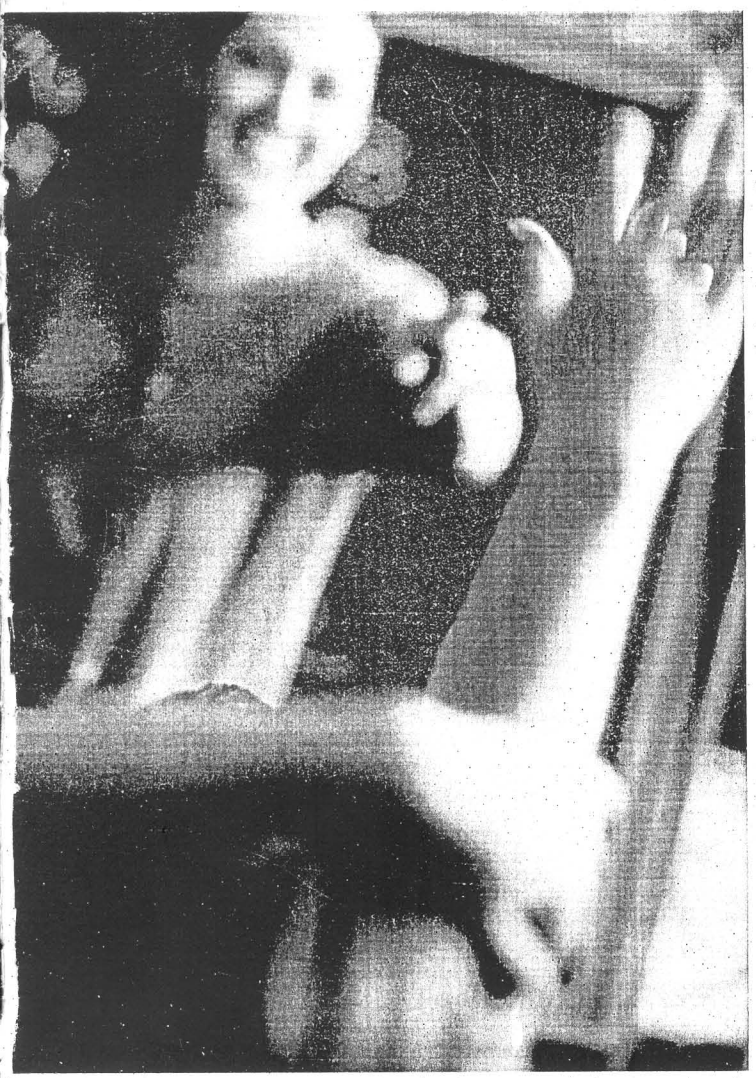

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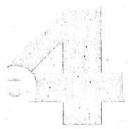
+ Understanding the concept of arrays was not one of their goals when Debra Rawlins, Natasha Hernandez, and William Miller thought about using cans to design a worthwhile second-grade math task. They wanted students to progress from counting objects by ones toward arranging and structuring equal groups of objects and counting them as sets. To the teachers' great surprise, students not only placed the cans into equal groups but also began creating arrays to solve an open problem. Read about students' various solutions in "Cooking Up Arrays" in the November/December issue.



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Dr Sistla Rama Devi Pani

Why Course Work is Mandatory for M Phil and PhD Programmes

S Srikanta Swamy*

Quality is the global concern where in every Higher Educational Institution has its role to play. In the educational scenario, quality is related to total quality management in which emphasis is on teaching, learning, extension/community activities and research. It is the quality of teaching that leads to the quality of research. Indepth knowledge and clarity in the area of research helps the researcher to design the research in a better way. Quality of research cannot emerge from higher educational institutions all of a sudden, unless there is a Research Culture. Developing the research culture involves many factors such as curriculum transaction, freedom for learners, exposing the learners to research during their graduation level, encouraging good library work and exposing them to the research journals, staff members capability to give the research inputs during their curricular transaction, research based assignments, seminars and project work, incentives for research based articles, making the research work visible to the outsiders through websites and so on. This should be done with all commitment and vigour, constantly and consistently so that developing the research culture can be initiated.

Many academicians who have visited foreign universities, compare the Indian researches and conclude that, they are substandard. This remark may be true to some extent with respect to researches in social science and humanities due to the nature of these disciplines. As for as researches in science are considered, in most of the cases they are very close to the standard of researches abroad. This may be due to the universal nature of science and also the publication of articles in refereed journals.

Poor quality of researches may be attributed to many factors like, selecting the less competent students, conducting the course work very casually, resistance from the M Phil and PhD scholars towards making course work mandatory, poor rapport between the scholar and the research supervisor, not adhering to the time line of the research process, liberal attitude of the research advisory council/ doctoral committee and violation of the UGC norms. The scholars quarterly or half yearly reports submitted for the review committee, the contact sessions between the research scholars and the research supervisors, intensive library work done by the scholars, number of articles published will also count to check the quality and consistent research progress.

The University Grants Commission has given clear guidelines under minimum standards and procedure for award of M Phil and PhD degree, and also freedom for higher educational institutions to use their discretion with respect to admission procedures and the conduct of Course Work without compromising the quality.

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Education: Key to Master the 4th Industrial Revolution

Bhagwati Prakash* and Jaya Sharma**

The Fourth Industrial Revolution (4IR), characterized by the fusion of technologies blurring lines inter se the physical, digital, and biological spheres and collectively referred to as cyber-physical system[1] has been fast embracing the world. This new industrial revolution can offer an opportunity to leapfrog rapid development and growth in the ensuing decades, if our education system would endeavor to master the capabilities needed to adapt this technology shift in the offing. It may also pose an equally formidable challenge, if our education system would fail to tide over this massive, irreversible and long-term disruption cycle of the 4IR. Indeed, this new industrial revolution is unfolding multiple challenges of breakthroughs in technology including robotics, artificial intelligence, data science, business informatics, nano-technology, quantum computing, biotechnology, the Internet of Things (IOT), the Industrial Internet of Things (IIoT), fifth-generation wireless technologies (5G), precision drones, additive manufacturing/ 3D printing and fully autonomous vehicles to necessitate a complete overhaul of our education. According to Klaus Schwab, the Executive Chairman of the World Economic Forum, these emergent technologies are likely to disrupt almost every industry in every country. The breadth and depth of these changes herald the transformation of entire system of production, management, and governance[2]. Moreover, recently "an Oxford study has estimated that 47% of the jobs in the US, 69% of the jobs in India and 77% of the jobs in China will not exist in 25 years. This is not mere conjecture. China's factories are adding robots faster than they are hiring people. India's information technology sector is already witnessing jobless growth and total employment may have already peaked."[3]

We are already on the threshold of this all pervasive revolution comprising huge advances in genomics, artificial intelligence, materials and manufacturing technologies, wherein machines are closing in on human ability, robots are replacing humans in industries and in homes too, reusable rockets can make space travel and colonies in space a reality and gene editing can facilitate to create favourable traits and new life forms. All of these are bound to outdate our curricula, research and skilling programmes. Only those countries would thrive with prosperity in the 20s, whose education and research systems would cope up and master this paradigm shift.

Our current education system in India has yet to gear up to cope with all such disruptive changes. India has earlier as well, suffered in industrialization in the post-globalization era in the past quarter cent

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A Small Step for a Giant Leap

Hema Raghavan*

Four years and four months ago a new government was elected, promising mandate in the form of jobs for the unemployed youth, of crediting to the account of every citizen a sum of 15 lakhs of rupees by confiscating black money and achche din(good days) for the entire nation under an honest corruption free government with a slogan "minimum government, maximum governance", offering absolute safety and security from internal and external foes (especially from our Western neighbours). There was also considerable mockery and criticism of the way the previous government handled farmers' problems, unclean environment, fuel price rise and rupee depreciation against dollar with the tag line that we will reverse all these and many more of their wrong doings as well as their non- doings, aptly described as "policy paralysis". The party's promises also included better educational standards and quality healthcare. Only fools with walls in their minds would have blocked the rise of the Bhartiya Janata Party (BJP) to high offices with such wholesome promises of greener pastures. India proved she had fewer fools by voting BJP to power almost en bloc with added support from its alliance partners.

With just a few months to go before the party in power seeks once again a fresh mandate, it has already planned for the final sprint with a renewal of promises on educational and health projects as a carryover from the partially fulfilled agenda of 2014. I am not interested in fault finding for promises not fulfilled or waxing eloquent over achievements that are more in the form of doing the same things as done in the past, maybe in a different and possibly better way (such as the extension of Aadhar towards social welfare projects and implementation of GST, to name a few). That is how political parties when they come to power work since they have the power to do what they want to do and the power not to do what they cannot do in a short span of five years.

Having been only in the academic profession all through my working years, my concern centres round the Prime Minister's (PM's) promise of greater funding for higher education which is perceptibly on the decline affecting a large number of young men and women whose future is dependent on what they receive in schools, colleges and universities. This is of cardinal importance to the future of any nation, for what tomorrow's leaders receive today, is what they will give in the years to come. The Prime Minister has promised during his centenary address at Patna university a bonanza of Rs.10,000 crores for five years(it is not clear if it is 10,000 crores each year or cumulatively for five years) and autonomy to 10 private and public universities if they show the potential to become world class institutions. Implied in this promise is the hidden truth that our universities have till now been denied adequate funding and autonomy which are essential to reach excellence. The PM's announcement is a small and a significant step towards reforming higher education.

**Former Dean, Students' Welfare, University of Delhi, Resi :No. 12 C, Saket, New Delhi- 110 017*

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Ten Reasons Why Journal Editors Reject Research Papers

A Joseph Dorairaj*

As a researcher and academician you would have received rejection slips from editors of various journals. And there is no hiding the fact that these rejection slips would have caused you considerable heartburn. While the number of rejection slips would have been quite high when you were a novice, both as a researcher and academician, the number would have come down drastically as you scaled the academic ladder. But still there is no guarantee that you will not receive any rejection slip at all, especially from journals with a enviable track record in terms of impact factor.

Why do journal editors reject research papers? Do they derive crude and vicarious pleasure in rejecting papers submitted by their academic peers? Do they follow established norms and guidelines while rejecting papers written and submitted with a lot of hard work and expectations or do they go by their whims while returning papers? Put differently, on what scientific basis do editors scrutinize submissions and subsequently reject most of them?

As the founder-editor of Gandhigram Literary Review, a peer reviewed journal, and as the member of different editorial boards, both national and international, I would like to discuss ten reasons why editors reject papers in Humanities and Social Sciences and these reasons would apply, mutatis mutandis, to pure sciences as well. From another point of view, it could be argued that if researchers and academicians were to pay attention to these ten issues, the chances of their papers being accepted by editors are quite bright.

The key issue in any research is originality. Unfortunately, quite a few researchers and academicians, either knowingly or unknowingly, try to re-invent the wheel. What editors look for in any submission is originality. In other words, they want to ascertain if the paper that has been submitted makes any contribution, however modest it may be, to that particular domain of knowledge. If it does not, they are not inclined to give it a second look. Editors are saddled with a heavy backlog and therefore, if a paper does not catch their attention immediately because of its sheer originality, it is most likely consigned to the recycle bin.

Many researchers do not undertake a proper literature survey and as a result are not aware of the quantum of research that has been already carried out in their field, and ultimately end up repeating or rehashing what has already been done. This can be addressed by undertaking a proper and extensive literature survey which will help you locate or identify the gaps in that field of research that need to be addressed. No editor will risk publishing either in toto or in part what has already been published and circulated. It has to be borne in mind that "familiarity with the literature

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Research frameworks for the study of language in mathematics education

Guest Editors: Núria Planas · Marcus Schütte

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