**ASSIGNMENT REPORT- 2**

Submitted by

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**Registration Number : 12102959**

**Course Name : Fundamentals of Research**

**Course Code : GEN530**

**Section Number : K21ML**

**Submitted to**

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**School of Computer Science and Engineering**



**Lovely Professional University**

**Academic Task 2:** To Identify the Quality Journals for Publication

**Course Code: GEN530 Course Name: Fundamentals of research**

**Section: K21ML Faculty Name: Dr.G.Akilarasu**

**Date of Allocation: 27-10-2021 Date of Submission: 7-11-2021**

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| **Objective** | **Task and weightage** |
| **To identify the Quality Journals for Publication** | The students are expected to list out top 10 Journals of the area as identified in the first academic task .For this the students have to search journals listed in Scopus/WOS only. (In exceptional cases such as Hindi and Punjabi, they can use UGC Care list).  The students are expected to analyse the journals in terms of aim, scope, citation indices and most of the cited papers as per following details:   1. Aims and Scope of the Journal (100 Words for each journal) -**10 Marks (Format 1.1)** 2. Details of citation indices (h-index, h5-index, JIF, SJR/Impact factor, Cite Score) of each Journal.   **10 Marks (Format 1.2)**   1. List of Most Cited Papers from the above Journals (at least 3) during last year along with Abstracts – **10 Marks (Format 1.3)** |
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***Note:***

1. ***Students must submit the report as per format and word limit***
2. ***Students are advised to follow the timeline of the submission. All Submissions have to be done on or before the last date of submission. No assignment will be accepted after the last date of submission.***

**Format -1.1** **Aims and Scope of the Journal**

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| **Sr. No.** | **Name of the Journal along with Indexing Agency** | **Aim and Scope of the Journal (100 Words )** |
| **1** | Annual Review of Psychology | **AIMS AND SCOPE OF JOURNAL:** The Annual Review of Psychology, in publication since 1950, covers the significant developments in the field of psychology, including: biological bases of behavior, sensation and perception, cognitive processes, animal learning and behavior, human development, psychopathology, clinical and counseling psychology, social psychology, personality, environmental psychology, community psychology, and more. |
| **2** | Frontiers in Neuroscience | Frontiers in Neuroscience is a leading journal in its field, publishing rigorously peer-reviewed research across a wide spectrum of specialties and disciplines. These are historical times for brain research - namely for the Brain itself. The convergence of novel molecular and optical techniques paves the way to the era of "causation neuroscience," whereby many thousands of cells composing the system studied can be recorded from and manipulated in a very specific manner and the behavioral and functional consequences of these manipulations explored in vivo. These approaches allow us to link structure of specific brain regions and local circuits to function more astutely. New research fields have recently emerged, e.g. "neuroeconomics" and "neuroenergetics." |
| **3** | PLOS One | *PLO* welcomes original research submissions from the natural sciences, medical research, engineering, as well as the related social sciences and humanities, including: Primary research that contributes to the base of scientific knowledge, including interdisciplinary, replication studies, and negative or null results. Systematic reviews whose methods ensure the comprehensive and unbiased sampling of existing literature. Submissions describing methods, software, databases, or other tools that meet the [journal’s criteria](https://journals.plos.org/plosone/s/submission-guidelines#loc-methods-software-databases-and-tools) for utility, validation and availability. Qualitative research that adheres to appropriate study design and reporting guidelines. Protocols, including Lab Protocols that describe verified methodologies and Study Protocols that describe detailed plans for research projects. |
| **4** | Journal of Advertising Research | The mission of the Journal of Advertising Research (JAR) is to act as the research and development vehicle for professionals in all areas of marketing including media, research, advertising and communications. Published by WARC for the ARF, the JAR provides a forum for sharing findings, applications, new technologies and methodologies, and avenues of solution. Its primary audience is academics, as well as the practitioner at all levels of practice. The Advertising Research Foundation began publishing the Journal of Advertising Research in 1960, and since its inception it has become one of the seminal journals in the industry. The JAR encourages dialogue between practitioners and academics to expand the scientific body of knowledge about all facets of marketing and advertising research, and to facilitate translation of that knowledge to support the ARF’s mission of ‘effective business through research and insights’. |
| **5** | Journal of Consumer Research | Founded in 1974, JCR publishes empirical, theoretical, and methodological papers of the highest quality on topics in consumer research. The overriding criterion for publication in JCR is that the paper should advance understanding of consumer behavior or the conduct of consumer research. Typically, a paper suitable for JCR should attempt to advance, deepen, or repudiate existing published research about consumption, and offer conceptual and empirical support for its claims. JCR is a multi-disciplinary journal. It encourages a variety of disciplinary perspectives, methods, theoretical approaches, and substantive problem areas. In general, JCR is interested in publishing articles derived from orientations and paradigms as diverse as those of the readership base. |
| **6** | *Journal of Experimental Psychology* | *General* publishes articles describing empirical work that is of broad interest or bridges the traditional interests of two or more communities of psychology. The work may touch on issues dealt with in *JEP: Learning, Memory, and Cognition*, *JEP: Human Perception and Performance*, *JEP: Animal Behavior Processes*, or *JEP: Applied*, but may also concern issues in other sub-disciplines of psychology, including social processes, developmental processes, psychopathology, neuroscience, or computational modeling. Articles in *JEP: General* may be longer than the usual journal publication if necessary. Brief reports will also be accepted. Brief reports will typically be rejected without review by editors at a higher rate than longer articles and the Journal will only accept the most innovative and significant empirical and theoretical contributions, with a preference for work that impacts more than one area of psychology and, for empirical contributions, demonstrates high reliability of the results. |
| **7** | Learning and Instruction | As an international, multi-disciplinary, peer-refereed journal, *Learning and Instruction* provides a platform for the publication of the most advanced scientific research in the areas of learning, development, instruction and teaching. The journal welcomes original empirical investigations. The papers may represent a variety of theoretical perspectives and different methodological approaches. They may refer to any age level, from infants to adults and to a diversity of learning and instructional settings, from laboratory experiments to field studies. The major criteria in the review and the selection process concern the significance of the contribution to the area of learning and instruction, and the rigor of the study. |
| **8** | Conference on Human Factors in Computing Systems | CHI 2017 is the premier international conference for the field of Human-Computer Interaction (HCI). This year it was held in Denver, bordering the beautiful Rocky Mountain region in the U.S., and reflected in our logo. The CHI 2017 conference began with two days of workshops and symposia, followed by four days of a technical program with 17 parallel sessions of provocative papers, panels, case studies, SIGs (Special Interest Groups), courses, and the popular student research, design, and game competitions. The growing alt.chi forum, now in its twelfth year, presented stimulating new ideas in HCI. The Interactivity forum showcased cutting-edge technology. For its second year, the CHI Art Exhibit merged art and technology in fascinating ways. |
| **9** | Perspectives on Psychological Science | Launched by the Association for Psychological Science in 2006, *Perspectives on Psychological Science* is a bimonthly journal publishing an eclectic mix of provocative reports and articles, including broad integrative reviews, overviews of research programs, meta-analyses, theoretical statements, and articles on topics such as the philosophy of science, opinion pieces about major issues in the field, autobiographical reflections of senior members of the field, and even occasional humorous essays and sketches. *Perspectives* contains both invited and submitted articles. Past special sections of *Perspectives* have investigated correlative analyses commonly used in neuroimaging studies, featured prominent researchers writing about what they consider to be “The Next Big Questions in Psychology,” and examined the causes of and solutions to the lack of replication in psychological science. The latest issue of *Perspectives* is dedicated to the singular topic of microaggressions: statements, policies, and environmental cues that carry racial and prejudicial overtones. |
| **10** | Research in Engineering Design | Research in Engineering Design is an international journal that publishes research papers on design theory and methodology in all fields of engineering, focussing on mechanical, civil, architectural, and manufacturing engineering. The journal is designed for professionals in academia, industry and government interested in research issues relevant to design practice. Papers emphasize underlying principles of engineering design and discipline-oriented research where results are of interest or extendible to other engineering domains. General areas of interest include theories of design, foundations of design environments, representations and languages, models of design processes, and integration of design and manufacturing. Representative topics include functional representation, feature-based design, shape grammars, process design, redesign, product data base models, and empirical studies. The journal also publishes state-of-the-art review articles. |

**Format -1.2** **Details of citation indices of the Journals**

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| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Name of the Journal** | **H-Index** | **H5-Index** | **JIF** | **Cite Score** | **SJR/IF** |
| **1** | Annual Review of Psychology | **243** | **75** | **24.137** | **38.2** | **10.358** |
| **2** | Frontiers in Neuroscience | **114** | **89** | **3.169** | **4.8** | **1.128** |
| **3** | PLOS One | **332** | **185** | **3.240** | **5.2** | **0.99** |
| **4** | Journal of Advertising Research | **86** | **43** | **3.154** | **3.9** | **0.831** |
| **5** | Journal of Consumer Research | **179** | **64** | **7.000** | **8.5** | **8.916** |
| **6** | *Journal of Experimental Psychology* | **161** | **57** | **4.913** | **3.5** | **2.521** |
| **7** | Learning and Instruction | **116** | **53** | **5.470** | **7.1** | **2.32** |
| **8** | Conference on Human Factors in Computing Systems | **189** | **101** | **4.440** | **6.3** | **0.326** |
| **9** | Perspectives on Psychological Science | **140** | **64** | **9.837** | **14.7** | **5.234** |
| **10** | Research in Engineering Design | **68** | **53** | **2.655** | **5.2** | **0.78** |

**Format -1.3** **Details of Most Cited Papers of the Journal**

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| --- | --- | --- | --- |
| **Sr. No.** | **Name of the Journal** | **Title of Most Cited Papers** | **Abstracts of Most Cited Papers** |
| 1 | Annual Review of Psychology | On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being | Well-being is a complex construct that concerns optimal experience and functioning. Current research on well-being has been derived from two general perspectives: the hedonic approach, which focuses on happiness and defines well-being in terms of pleasure attainment and pain avoidance; and the eudaimonic approach, which focuses on meaning and self-realization and defines well-being in terms of the degree to which a person is fully functioning. These two views have given rise to different research foci and a body of knowledge that is in some areas divergent and in others complementary. |
| Sources of Method Bias in Social Science Research and Recommendations on How to Control It | Despite the concern that has been expressed about potential method biases, and the pervasiveness of research settings with the potential to produce them, there is disagreement about whether they really are a problem for researchers in the behavioral sciences. Therefore, the purpose of this review is to explore the current state of knowledge about method biases. First, we explore the meaning of the terms “method” and “method bias” and then we examine whether method biases influence all measures equally. Next, we review the evidence of the effects that method biases have on individual measures and on the covariation between different constructs. |
| Socioeconomic Status and Child Development | Socioeconomic status (SES) is one of the most widely studied constructs in the social sciences. Several ways of measuring SES have been proposed, but most include some quantification of family income, parental education, and occupational status. Research shows that SES is associated with a wide array of health, cognitive, and socioemotional outcomes in children, with effects beginning prior to birth and continuing into adulthood. A variety of mechanisms linking SES to child well-being have been proposed, with most involving differences in access to material and social resources or reactions to stress-inducing conditions by both the children themselves and their parents. Its effects are moderated by children's own characteristics, family characteristics, and external support systems. |
| 2 | Frontiers in Neuroscience | Selective neuronal vulnerability to oxidative stress in the brain | Oxidative stress (OS), caused by the imbalance between the generation and detoxification of reactive oxygen and nitrogen species (ROS/RNS), plays an important role in brain aging, neurodegenerative diseases, and other related adverse conditions, such as ischemia. The response of neurons to this pervasive stress, however, is not uniform in the brain. While many brain neurons can cope with a rise in OS, there are select populations of neurons in the brain that are vulnerable. Because of their selective vulnerability, these neurons are usually the first to exhibit functional decline and cell death during normal aging, or in age-associated neurodegenerative diseases, such as Alzheimer’s disease. |
| Plasticity of brain networks in a randomized intervention trial of exercise training in older adults | Research has shown the human brain is organized into separable functional networks during rest and varied states of cognition, and that aging is associated with specific network dysfunctions. The present study used functional magnetic resonance imaging (fMRI) to examine low-frequency (0.008 < *f* < 0.08 Hz) coherence of cognitively relevant and sensory brain networks in older adults who participated in a 1-year intervention trial, comparing the effects of aerobic and non-aerobic fitness training on brain function and cognition. Results showed that aerobic training improved the aging brain’s resting functional efficiency in higher-level cognitive networks. |
| Long-chain omega-3 fatty acids and the brain: a review of the independent and shared effects of EPA, DPA and DHA | Omega-3 polyunsaturated fatty acids (PUFAs) exhibit neuroprotective properties and represent a potential treatment for a variety of neurodegenerative and neurological disorders. However, traditionally there has been a lack of discrimination between the different omega-3 PUFAs and effects have been broadly accredited to the series as a whole. whereas, with neurodegenerative conditions such as Alzheimer’s disease, the focus has been on DHA. DHA is quantitatively the most important omega-3 PUFA in the brain, and consequently the most studied, whereas the availability of high purity DPA preparations has been extremely limited until recently, limiting research into its effects. |
| 3 | PLOS One | Sub pixel resolution using spectral-spatial encoding in x-ray imaging | Previous efforts at increasing spatial resolution have relied on decreasing focal spot and or detector element size. Many “super resolution” methods require physical movement of a component of the imaging system. This work describes a method for achieving spatial resolution on a scale smaller than the detector pixel without motion of the object or detector. |
| Role of the IL-33/ST2 axis in cardiovascular disease: A systematic review and meta-analysis | Interleukin (IL)-33 and its unique receptor, ST2, play a pivotal role in the immune response to infection and stress. However, there have been conflicting reports of the role of IL-33 in cardiovascular disease (CVD) and the potential of this axis in differentiating CVD patients and controls and with CVD disease severity, remains unclear. |
| Age effects in autobiographical memory depend on the measure | Studies examining age effects in autobiographical memory have produced inconsistent results. In contrast, older adults performed comparatively well on the other measures. The pattern of findings was broadly consistent with the results of previous investigations, suggesting that the results of the different AM tasks are reliable, and variable age effects in the autobiographical memory literature are at least partly due to the use of different tasks, which cannot be considered interchangeable measures of autobiographical memory ability.retention interval and event type. The extent to which retention interval and event type interact with age remains unclear; further research using specially designed autobiographical memory tasks could resolve this issue. |
| 4 | Journal of Advertising Research | An Analysis of Data Quality: Professional Panels, Student Subject Pools, and Amazon's Mechanical Turk | Data collection using Internet-based samples has become increasingly popular in many social science disciplines, including advertising. This research examines whether one popular Internet data source, Amazon's Mechanical Turk (MTurk), is an appropriate substitute for other popular samples utilized in advertising research. Specifically, a five-sample between-subjects experiment was conducted to help researchers who utilize MTurk in advertising experiments understand the strengths and weaknesses of MTurk relative to student samples and professional panels. |
| Brand Communication in Social Media: A Research Agenda | This paper provides an agenda for future research on brand communication in social media. Based on an overview of the current state of research, a discussion of the theoretical and conceptual challenges of brand communication in social media, and a survey about the expectations of the media and advertising industry, I present six key directions for future research. These six key directions include research on social media influencers, personalized brand content in social media, ethical concerns about the nature of social media content and consumer empowerment, platform characteristics rather than on Facebook, the integration of social media in the media mix and the consumer journey, and using real social media data. Together these six key directions help to shape the social media research agenda. |
| Engagement with Social Media and Social Media Advertising: The Differentiating Role of Platform Type | This study examines how consumers’ engagement with social media platforms drives engagement with advertising embedded in these platforms and, subsequently, evaluations of this advertising. Our survey (*N* = 1,346, aged 13 and older) maps social media users’ engagement experiences with Facebook, YouTube, LinkedIn, Twitter, Google+, Instagram, Pinterest, and Snapchat and their experiences with and evaluations of advertising on these platforms. Our findings show that engagement is highly context specific; it comprises various types of experiences on each social media platform such that each is experienced in a unique way. Moreover, on each platform, a different set of experiences is related to advertising evaluations. It is further shown that engagement with social media advertising itself is key in explaining how social media engagement is related to advertising evaluations. The general conclusion is that there is no such thing as “social media.” |
| 5 | Journal of Consumer Research | Automated Text Analysis for Consumer Research | In this paper, the amount of digital text available for analysis by consumer researchers has risen dramatically. Consumer discussions on the internet, product reviews, and digital archives of news articles and press releases are just a few potential sources for insights about consumer attitudes, interaction, and culture.We argue that although automated text analysis cannot be used to study all phenomena, it is a useful tool for examining patterns in text that neither researchers nor consumers can detect unaided. Text analysis can be used to examine psychological and sociological constructs in consumer-produced digital text by enabling discovery or by providing ecological validity. |
| Consumer and Object Experience in the Internet of Things: An Assemblage Theory Approach | In this paper , the consumer Internet of Things (IoT) has the potential to revolutionize consumer experience. Because consumers can actively interact with smart objects, the traditional, human-centric conceptualization of consumer experience as consumers’ internal subjective responses to branded objects may not be sufficient to conceptualize consumer experience in the IoT. Smart objects possess their own unique capacities and their own kinds of experiences in interaction with the consumer and each other. A conceptual framework based on assemblage theory and object-oriented ontology details how consumer experience *and* object experience emerge in the IoT. This conceptualization is anchored in the context of consumer-object assemblages, and defines consumer experience by its emergent properties, capacities, and agentic and communal roles expressed in interaction. |
| Increasing the Power of Your Study by Increasing the Effect Size | As in other social sciences, published findings in consumer research tend to overestimate the size of the effect being investigated, due to both file drawer effects and abuse of researcher degrees of freedom, including opportunistic analysis decisions. Given that most effect sizes are substantially smaller than would be apparent from published research, there has been a widespread call to increase power by increasing sample size. If done correctly, removing participants, using covariates, and optimizing experimental designs, stimuli, and measures can boost effect size without inflating researcher degrees of freedom. In fact, careful planning of studies and analyses to maximize effect size is essential to be able to study many psychologically interesting phenomena when massive sample sizes are not feasible. |
| 6 | *Journal of Experimental Psychology* | Donald Trump and vaccination: The effect of political identity, conspiracist ideation and presidential tweets on vaccine hesitancy | In this paper Donald Trump is the first U.S. President to be on the record as having anti-vaccination attitudes. Given his enormous reach and influence, it is worthwhile examining the extent to which allegiance to Trump is associated with the public's perceptions of vaccine safety and efficacy. This tendency was reduced to non-significance after controlling for conspiracist ideation and, to a lesser degree, political conservatism. In Study 2, participants were later exposed to real Trump tweets that either focused on his anti-vaccination views, or focused on golf. Compared to when the same respondents were sampled a week earlier, there was a significant increase in vaccine concern, but only among Trump voters who were exposed to the anti-vaccination tweets. |
| Witnessing change: Dynamic norms help resolve diverse barriers to personal change | In this paper precent research has found that *dynamic norms*—information about collective change in behavior—can promote meaningful personal behavior change, even if that behavior is not currently the norm. Through what psychological processes do dynamic norms operate? We theorized that, when others change, it can lead observers to infer that whatever factors had loomed large as barriers to change do not, in fact, prevent change. If so, dynamic norms may alter diverse salient mechanisms of personal change, and encourage behavior change in diverse contexts |
| Foreign language effects on moral dilemma judgments: An analysis using the CNI model | According to the principle of utilitarianism, the moral status of an action depends on its consequences for the greater good; the principle of deontology states that the moral status of an action depends on its consistency with moral norms. Previous research suggests that processing moral dilemmas in a foreign language influences utilitarian and deontological response tendencies. It remains unclear whether language effects on moral judgments reflect genuine differences in people's sensitivity to consequences and norms, or broader differences in general action tendencies regardless of consequences and norms. Using the CNI model of moral decision-making, the current research (*N* = 634) demonstrates that foreign language reduces sensitivity to consequences and sensitivity to norms without affecting general action tendencies. Implications for moral choices in international contexts and language effects on decision-making are discussed. |
| 7 | Learning and Instruction | Beyond cold technology: A systematic review and meta-analysis on emotions in technology-based learning environments | Understanding emotions in technology-based learning environments (TBLEs) has become a paramount goal across different research communities, but to date, these have operated in relative isolation. Based on control-value theory (Pekrun, 2006), we reviewed 186 studies examining emotions in TBLEs that were published between 1965 and 2018. We extracted effect sizes quantifying relations between emotions (enjoyment, curiosity/interest, anxiety, anger/frustration, confusion, boredom) and their antecedents (control-value appraisals, prior knowledge, gender, TBLE characteristics) and outcomes (engagement, learning strategies, achievement). That their functional relations with appraisals and learning are equivalent across environments. Implications for research and designing emotionally sound TBLEs are discussed. |
| Supporting groups’ emotion and motivation regulation during collaborative learning | This study investigates when and how students activate co- and socially shared emotion and motivation regulation in [collaborative learning](https://www.sciencedirect.com/topics/social-sciences/collaborative-learning) and whether the S-REG mobile application tool can support this regulation. The S-REG tool traced groups' emotional and motivational states in different sessions, and the occurrence of co-regulation and shared regulation of motivation and emotions were coded from video-recorded collaborative work . The groups activated more co-regulation than shared regulation of emotions and motivation, but the shared-regulation episodes were longer-lasting. The groups’ emotional and motivational states were associated with the occurrence of co-regulation in the beginning of the learning sessions. The results suggest that the S-REG tool balanced collaboration by prompting the groups to regulate emotions and motivation right in the beginning of the motivationally and emotionally challenging learning sessions. |
| University students' need satisfaction trajectories: A growth mixture analysis | This study examines trajectory profiles of University students over the course of a University semester defined based on global levels of psychological need satisfaction, as proposed by [self-determination theory](https://www.sciencedirect.com/topics/social-sciences/self-determination-theory) (SDT). This study also documents the implications of these trajectories for a variety of educational outcomes. A sample of 461 first-year undergraduates completed all measures three times over the course of a University semester. Longitudinal growth mixture analyses (GMA) revealed three distinct need satisfaction trajectories (Low-Decreasing, Moderate-Decreasing, and Moderate-Increasing). The Moderate-Increasing profile was associated with the highest levels of positive affect and effort. In contrast, the Low-Decreasing profile was associated with lower levels of positive affect, effort, and achievement, and higher levels of negative affect than the Moderate-Increasing profile. |
| 8 | Conference on Human Factors in Computing Systems | A Human-Centered Evaluation of a Deep Learning System Deployed in Clinics for the Detection of Diabetic Retinopathy | Deep learning algorithms promise to improve clinician workflows and patient outcomes. However, these gains have yet to be fully demonstrated in real world clinical settings. In this paper, we describe a human-centered study of a deep learning system used in clinics for the detection of diabetic eye disease. From interviews and observation across eleven clinics in Thailand, we characterize current eye-screening workflows, user expectations for an AI-assisted screening process, and post-deployment experiences. Our findings indicate that several socio-environmental factors impact model performance, nursing workflows, and the patient experience. We draw on these findings to reflect on the value of conducting human-centered evaluative research alongside prospective evaluations of model accuracy. |
| PolySense: Augmenting Textiles with Electrical Functionality using In-Situ Polymerization | In-situ polymerization supports integration of piezoresistive properties at the material level, preserving a textile's haptic and mechanical characteristics. We demonstrate how to enhance a wide set of fabrics and yarns using only readily available tools. To further support customisation by the designer, we present methods for patterning, as needed to create circuits and sensors, and demonstrate how to combine areas of different conductance in one material. Technical evaluation results demonstrate the performance of sensors created using our method is comparable to off-the-shelf piezoresistive textiles. As application examples, we demonstrate rapid manufacturing of on-body interfaces, tie-dyed motion-capture clothing, and zippers that act as potentiometers. |
| Breaking The Experience: Effects of Questionnaires in VR User Studies | Questionnaires are among the most common research tools in virtual reality (VR) evaluations and user studies. However, transitioning from virtual worlds to the physical world to respond to VR experience questionnaires can potentially lead to systematic biases. Administering questionnaires in VR (inVRQs) is becoming more common in contemporary research. This is based on the intuitive notion that inVRQs may ease participation, reduce the Break in Presence (BIP) and avoid biases. In a user study (n=50), we evaluated question-asking procedures using a VR shooter with two different levels of immersion. The users rated their player experience with a questionnaire either inside or outside of VR. Our results indicate a reduced BIP for the employed inVRQ without affecting the self-reported player experience. |
| 9 | Perspectives on Psychological Science | Racial Inequality in Psychological Research: Trends of the Past and Recommendations for the Future | First, across the past five decades, psychological publications that highlight race have been rare, and although they have increased in developmental and social psychology, they have remained virtually nonexistent in cognitive psychology. Second, most publications have been edited by White editors, under which there have been significantly fewer publications that highlight race. Third, many of the publications that highlight race have been written by White authors who employed significantly fewer participants of color. In many cases, we document variation as a function of area and decade. |
| Real-Life Neuroscience: An Ecological Approach to Brain and Behavior Research | Owing to advances in neuroimaging technology, the past couple of decades have witnessed a surge of research on brain mechanisms that underlie human cognition. Despite the immense development in cognitive neuroscience, the vast majority of neuroimaging experiments examine isolated agents carrying out artificial tasks in sensory and socially deprived environments. Here we focus on social and memory research as representatives of cognitive functions and propose that mainstream, lab-based experimental designs in these fields suffer from two fundamental limitations, pertaining to person-dependent and situation-dependent factors. This paradigm shift toward a nonreductionist approach, exploiting portable technology in semicontrolled environments, to explore behavior in real life |
| A Hierarchical Taxonomy of Psychopathology Can Transform Mental Health Research | For more than a century, research on psychopathology has focused on categorical diagnoses. Although this work has produced major discoveries, growing evidence points to the superiority of a dimensional approach to the science of mental illness. Here we outline one such dimensional system—the Hierarchical Taxonomy of Psychopathology (HiTOP)—that is based on empirical patterns of co-occurrence among psychological symptoms. We highlight key ways in which this framework can advance mental-health research, and we provide some heuristics for using HiTOP to test theories of psychopathology. |
| 10 | Research in Engineering Design | Perspective and Prospects for Rare Earth Permanent Magnets | Rare earth permanent magnets constitute a mature technology, but the shock of the 2011 rare earth crisis led to the re-evaluation of many ideas from the 1980s and 1990s about possible new hard magnets containing little or no rare earth (or heavy rare earth). A big idea from a generation ago, which held real potential to raise the record energy product significantly—was the oriented exchange-spring hard/soft [nanocomposite](https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/nanocomposites) magnet; however, it has proved very difficult to realize. Nevertheless, the field has evolved, and innovation has flourished in other areas. As the limitations of particular permanent magnets become clearer, ingenuity and imagination are being used to design around them, and to exploit the available mix of rare earth resources most efficiently. |
| Adversarial Attacks and Defenses in Deep Learning | With the rapid developments of artificial intelligence(AI) and deep learning(DL) techniques, it is critical to ensure the security and robustness of the deployed algorithms. Recently, the security vulnerability of DL algorithms to adversarial samples has been widely recognized. The fabricated samples can lead to various misbehaviors of the [DL models](https://www.sciencedirect.com/topics/computer-science/deep-learning-model) while being perceived as benign by humans. Successful implementations of adversarial attacks in real physical-world scenarios further demonstrate their practicality. In this paper, we first introduce the theoretical foundations, algorithms, and applications of adversarial attack techniques. We then describe a few research efforts on the defense techniques, which cover the broad frontier in the field. Several open problems and challenges are subsequently discussed, which we hope will provoke further research efforts in this critical area. |
| Development of Micro Selective Laser Melting: The State of the Art and Future Perspectives | [Additive manufacturing](https://www.sciencedirect.com/topics/computer-science/3d-printing) (AM) is gaining traction in the manufacturing industry for the fabrication of components with complex geometries using a variety of materials. This paper reviews the state of the art of the SLM of metallic materials at the [microscale](https://www.sciencedirect.com/topics/engineering/microscale) level. In comparison with the direct writing techniques that are commonly used for micro AM, micro SLM is attractive due to a number of factors, including a faster cycle time, process simplicity, and material [versatility](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/versatility). A comprehensive evaluation of various research works and commercial systems for the fabrication of microscale parts using SLM and [selective laser sintering](https://www.sciencedirect.com/topics/engineering/selective-laser-sintering) (SLS) is conducted. In addition to identifying existing issues with SLM at the microscale, which include powder recoating, laser optics, and [powder particle](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/powder-particles) size, this paper details potential future directions. |