

Unit-I – Philosophy and Ethics

Introduction to philosophy: definition, nature and scope, concept, branches - Ethics: definition, moral philosophy, nature of moral judgements and reactions.

1. Research

Research is generally defined as studious inquiry or examination aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

2. Publication

- It is the dissemination of your findings to the scientific community
- Scientific publications are subject to peer review

3. Ethics

Ethics or moral philosophy is a branch of philosophy that "involves systematizing, defending, and recommending concepts of right and wrong behavior". The field of ethics, along with aesthetics, concerns matters of value, and thus comprises the branch of philosophy called axiology. Three major areas of study within ethics recognized today are

- Meta Ethics
- Normative Ethics
- Applied Ethics

4. Philosophy

The word philosophy is derived from the Greek words **philia** (love) and **sophia** (wisdom) and means the love of wisdom.

Philosophy is the study of general and fundamental problems, such as those connected with existence, knowledge, values, reason, mind, and language. It is the rational attempt to formulate, understand, and answer fundamental questions.

5. Nature of Philosophy

- a) Philosophy is a set of views or beliefs about life and the universe, which are often held uncritically.**

We refer to this meaning as the informal sense of philosophy or “having” a philosophy. Usually when a person says “my philosophy is,” he or she is referring to an informal personal attitude to whatever topic is being discussed.

- b) Philosophy is a process of reflecting on and criticizing our most deeply held conceptions and beliefs.**

These two senses of philosophy— “having” and “doing”— cannot be treated entirely independent of each other, for if we did not have a philosophy in the formal, personal sense, then we could not do a philosophy in the critical, reflective sense.

Having a philosophy, however, is not sufficient for doing philosophy. A genuine philosophical attitude is searching and critical; it is open-minded and tolerant—willing to look at all sides of an issue without prejudice. To philosophize is not merely to read and know philosophy; there are skills of argumentation to be mastered, techniques of analysis to be employed, and a body of material to be appropriated such that we become able to think philosophically. Philosophers are reflective and critical.

c) Philosophy is a rational attempt to look at the world as a whole.

Philosophy seeks to combine the conclusions of the various sciences and human experience into some kind of consistent world view. Philosophers wish to see life, not with the specialized slant of the scientist or the businessperson or the artist, but with the overall view of someone cognizant of life as a totality.

d) Philosophy is the logical analysis of language and the clarification of the meaning of words and concepts.

Certainly this is one function of philosophy. In fact, nearly all philosophers have used methods of analysis and have sought to clarify the meaning of terms and the use of language. Some philosophers see this as the main task of philosophy, and a few claim this is the only legitimate function of philosophy.

e) Philosophy is a group of perennial problems that interest people and for which philosophers always have sought answers.

Philosophy presses its inquiry into the deepest problems of human existence. Some of the philosophical questions raised in the past have been answered in a manner satisfactory to the majority of philosophers. Many questions, however, have been answered only tentatively, and many problems remain unsolved.

1. “What is truth?”
2. “What is the distinction between right and wrong?”
3. What is life and why am I here?
4. Why is there anything at all?

6. Scopes of Philosophy

By relating philosophy to wisdom the scope of philosophy cannot be put within precise boundary, but within the widening horizon of wisdom. Thus the scope of philosophy embraces the whole of reality. Although philosophy claims to consider everything in general and nothing in particular, we can still point out some of the areas that are generally accepted as typically philosophical.

- Epistemology
- Metaphysics
- Ethics
- Aesthetics
- Theology

(a) Epistemology is the philosophy of knowledge. It is often called theory of knowledge also. We have the experience or concept or phenomenon of knowledge. Philosophy explains that concept. And that is called epistemology. It is not knowledge of any other thing, but discussion on the problem of knowledge itself. If you know about ‘atoms’ in physics, that constitutes the

‘knowledge’ of atoms. In epistemology, you do not consider knowledge of anything –atom or molecule or whatever, but the fact of knowledge itself. Here you study what is knowledge, how does it originate, what is its limitation, can we know everything about a phenomenon, etc.

(b) Metaphysics is the philosophy or theory of the ‘real’. Knowledge that is studied in epistemology automatically leads us to the question of the ‘known’. You know, but what do you know? Knowledge is different from mere thought or imagination. Hence, like thought is related to thing in order to be complete, knowledge is linked with the known in order to be meaningful. So, philosophy has a distinct branch devoted to understanding ‘what is known’. It considers the nature of the real. Whether the real completely reveals itself in the process of knowing or a portion of it remains beyond the reach of knowledge? That is, is there a scope for assuming that the known world and the real world are fundamentally different? This is the famous problem of metaphysics technically known as ‘appearance and reality.’ It is at the heart of every metaphysical enquiry. It is not necessary that you subscribe to any preconceived idea. You may have reason to believe that the real completely unbares itself in the knowledge system. You will be a realist then. You can also come to the conclusion that the real is totally different from the appearance, but it can be known through some sort of insight. You will be an idealist then. You may also reach a position that the real is there and it upholds the apparent but it cannot be finally known, you will be an agnostic. You can also have many more philosophically tenable positions. You can also argue quite powerfully against the possibility and use of any subject like metaphysics. It is virtually a philosophers’ paradise. With epistemology, metaphysics forms the core of any philosophical inquiry.

(c) Ethics: After knowing what knowledge is and after grappling with the issue of the known, you have learnt quite a bit about the world and your life in it. A question will naturally arise in your mind. If the world is what it seems to be-then how shall I live in this world? How do I behave in it? For you will be continuously facing more than one alternative courses of action and you will be forced to choose among them. And you have to use your discretion while choosing. Any consideration that you will bring to bear on your choices will have what is commonly called the ‘moral’ implication. If you are walking on the pavement and an old man has fallen down- you will have two choices before you: (a) let me pick up the person, (b) why should I waste my time? Let me hurry up in my work. But you will see that there is an instinctive or rational (We cannot specify what it is at this point) impulse in you to help the person. This is your voice of conscience or your wisdom or whatever you might call it. But you feel like doing ‘good’. This sense of goodness or propriety or duty is central to all human thought and behaviour. Ethics is the study of human conduct based on moral impulses and wisdom.

(d) Aesthetics and (e) theology are also important branches of philosophy. The first is concerned with the inquiry into the nature of beauty and the second investigates the nature of religious experiences. In fact aesthetics is concerned with the creation and appreciation of all arts. Theology, which constitutes a deep inquiry into religious phenomena, is more commonly called philosophy of religion.

Starting with epistemology up to theology, you have seen what actually constitute the subject matter of philosophical inquiry. This does not constitute the entire scope of philosophy. There are other areas like society, politics, human rights, feminism, environment etc. which can be important aspects of philosophical enquiry.

7. Branches of philosophy

Historically, philosophical concerns have been treated under these broad categories:

- **Logic**

- Metaphysics
- Epistemology
- Value theory

A. LOGIC

Logic is the systematic study of the rules for the correct use of these supporting reasons, rules we can use to distinguish good arguments from bad ones. Most of the great philosophers from Aristotle to the present have been convinced that logic permeates all other branches of philosophy. The ability to test arguments for logical consistency, understand the logical consequences of certain assumptions, and distinguish the kind of evidence a philosopher is using are essential for “doing” philosophy

B. METAPHYSICS

Another traditional branch of Philosophy traditionally known as metaphysics. For Aristotle, the term metaphysics meant “first philosophy,” discussion of the most universal principles; later the term came to mean “comprehensive thinking about the nature of things.”

It means, usually, the study or theory of reality. The question of metaphysics is: what is reality? What is real? Is reality some kind of “thing”. Is it one or is it many? If it is one, then how is it related to many things around us? Can ultimate reality be grasped by five senses, or is it supernatural or transcendent?

Metaphysics undoubtedly is the branch of philosophy that the modern student finds most difficult to grasp. Metaphysics attempts to offer a comprehensive view of all that exists. It is concerned with such problems as the relation of mind to matter, the nature of change, the meaning of “freedom,” the existence of God, and the belief in personal immortality.

C. EPISTEMOLOGY

The technical term for the theory of knowledge is epistemology, which comes from the Greek word episteme, meaning “knowledge.” In general, epistemology is the branch of philosophy that studies the sources, nature, and validity of knowledge.

There are three central questions in this field:

- What are the sources of knowledge? Where does genuine knowledge come from or how do we know? This is the question of origins.
- What is the nature of knowledge? Is there a real world outside the mind, and if so can we know it? This is the question of appearance versus reality.
- Is our knowledge valid? How do we distinguish truth from error? This is the question of the tests of truth, of verification.

Traditionally, most of those who have offered answers to these questions can be placed in one of two schools of thought—rationalism or empiricism.

The rationalists hold that human reason alone can discover the basic principles of the universe. The empiricists claim that all knowledge is ultimately derived from sense experience and, thus, that our knowledge is limited to what can be experienced.

It should be clear that there is a necessary relation between metaphysics and epistemology. Our conception of reality depends on our understanding of what can be known. Conversely, our theory of knowledge depends on our understanding of ourselves in relation to the whole of reality.

D. VALUE THEORY

Value theory is the branch of philosophy that studies values. It can be subdivided into ethics, aesthetics, and social and political philosophy.

In broad terms ethics concerns itself with the question of morality. What is right and what is wrong in human relations? Within morality and ethics there are three major areas: descriptive ethics, normative ethics, and metaethics. Descriptive ethics seeks to identify moral experience in a descriptive way. We seek to identify, within the range of human conduct, the motives, desires, and intentions as well as overt acts themselves.

8. Ethics

Etymologically the term **ethics** correspond to the Greek word **ethos** which means character, habit, customs, ways of behaviour, etc. Ethics is also called **moral philosophy**. The ethics may be defined as the systematic study of human actions from the point of view of their rightfulness or wrongfulness, as means for the attainment of the ultimate happiness.

As a philosophical discipline, ethics is the study of the values and guidelines by which we live. It also involves the justification of these values and guidelines. It is not merely following a tradition or custom. Instead it requires analysis and evaluation of these guidelines in light of universal principles. As moral philosophy, ethics is the philosophical thinking about morality, moral problems, and moral judgements.

Nature of Ethics

Ethics aims at systematic knowledge. So, ethics is a science. Every science is concerned with a particular sphere of nature. As a science ethics has its own particular sphere; it deals with certain judgments that we make about human conduct. It deals with systematic explanation of rightness or wrongness in the light of the highest Good of man.

Ethics is a normative science. It is concerned with what ought to be done rather than what is the case.

Ethics is not a practical science. Practical science deals with means for the realization of an end or ideal. It teaches us to know how to do.

Ethics is not an art. Ethics does not teach us an art as to how to lead a moral life. Rather it helps us to justify rightness or goodness which can lead to the supreme goal of human life. So, ethics is not a means to the highest ideal of human life.

A norm or ideal in the ethical sense is defined as any regulatory principle that controls or lays guidelines to thought and mode of acting.

9. Moral Philosophy

Moral Philosophy refers in particular to the specific principles or rules that people use to decide what is right or wrong.

A moral philosophy is a person's principles and values that define what is moral or immoral. Making decisions requires a person to evaluate the “rightness”, or morality, of choices in terms of his/her own principles and values.

Moral philosophy pertains to the overall guiding belief system behind the individual's perception of right or wrong.

10. Nature of Moral Judgements and Reactions

A judgement of right and wrong, good and bad is commonly termed as moral judgement. It is judgement of an individual which he passes to estimate the rightness or wrongness of his action.

The moral judgement is the judgement which deals with the moral value or quality of an action. It is a judgement of value and it evaluates the rightness or wrongness of our actions. When we analyse a moral judgement then we find that it contains

- a subject which will judge
- an object whose action will be judged
- a standard in conformity to which the action of the subject will be judged
- a power of judging the action as required. Moral judgment is the judgment of moral quality of voluntary habitual actions.

Nature of Moral Judgement

Moral judgment is a judgment of values. It is distinct from the judgment of facts. A Judgment of value is a judgment of “what ought to be”. But a judgment of fact is a judgment of “what is”. Judgment of fact is a descriptive judgment, while moral judgment is an appreciative or critical judgment. So, moral judgment is a mental act of pronouncing a particular action to be right or wrong.

According to **Mackenzie**, moral judgment is not merely to state the nature of some object, but to compare it with a standard and to pronounce it to be good or evil, right or wrong. So, it is normative.

Muirhead says that moral judgment is concerned with the judgment upon conduct, the judgment that such and such conduct is right and wrong. The judgment upon conduct has a judicial sense and the judgment of fact has logical sense. Thus, when we perceive a voluntary action we compare it with the moral standard and thus judge whether the action is in conformity with it or not. So, it is clear that, moral judgment is inferential in nature, involving the application of a standard to a particular action.

But in the language of **Bradley**, ordinarily moral judgment is intuitive and immediate. Because, we intuitively brings an action under a moral rule recognized by the community and judge it to be right or wrong. It is only in difficult or doubtful cases that we consciously compare an action with the moral ideal and judge it as right or wrong. Hence, we can find out that a moral judgment presupposes a subject, who judges an object that is judged, a standard according to which an action is judged.

Unit II: SCIENTIFIC CONDUCT (5 Hrs.)

Ethics with respect to science and research - Intellectual honesty and research integrity -

Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP) - Redundant

Publications: duplicate and overlapping publications, salami slicing - Selective reporting and misrepresentation of data.

Ethics with respect to science and research

This **research** found ten **ethical** principles common across **scientific** disciplines. They are duty to society; beneficence; conflict of interest; informed consent; integrity; nondiscrimination; non exploitation; privacy and confidentiality; professional competence; and professional discipline.

This research found ten ethical principles common across scientific disciplines

- They are duty to society; beneficence; conflict of interest; informed consent; integrity; nondiscrimination; non exploitation; privacy and confidentiality; professional competence; and professional discipline.
- Each ethical principle applies to the scientific inquiry, the conduct and behaviors of researchers, or the ethical treatment of research participants.
- Only one ethical principle — duty to society — applies to the scientific inquiry by asking whether the research benefits society.
- Variations in ethical principles across disciplines are usually due to whether the discipline includes human or animal subjects.
- Variations in ethical principles across countries are usually due to local laws, oversight, and enforcement; cultural norms; and whether research is conducted in the researchers' host country or a foreign country.

Ethics are created, change, and evolve due to the following factors:

- significant historic events that create a reckoning
- ethical lapses that lead researchers to create new safeguards
- scientific advancements that lead to new fields of research
- changes in cultural values and behavioral norms that evolve over time.

Mechanisms to monitor and enforce research vary in effectiveness and by country

- Professional societies and peer-reviewed journals offer consistent ethical standards across national borders, though they lack the enforcement strength of nation-states.

- Emerging trends — including big data, open science, and citizen science — provide research opportunities while introducing new ethical risks.
- Professional societies respond to emerging changes with updates to codes of conduct, education and training for researchers, and governance structures for researchers, sponsors, and research subjects.

Intellectual honesty and research integrity

Intellectual honesty in proposing, performing, and reporting **research** refers to **honesty** with respect to the meaning of one's **research**. It is expected that **researchers** present proposals and data honestly and communicate their best understanding of the work in writing and verbally. The descriptions of an individual's work found in such communications frequently present selected data from the work organized into frameworks that emphasize conceptual understanding rather than the chronology of the discovery process. Clear and accurate research records must underlie these descriptions, however. Researchers must be advocates for their research conclusions in the face of collegial skepticism and must acknowledge errors.

Intellectual property provisions and secrecy allow for patents and licensure and encourage private investment in research. Furthermore, even for publicly funded research, a degree of discretion may permit a research group to move ahead more efficiently. Conversely, an investigator who delays reporting important new findings risks having others publish similar results first and receiving little recognition for the discovery. Knowing when and how much to tell will always remain a challenge in scientific communication.

Integrity in Research

The pursuit and dissemination of knowledge enjoy a place of distinction in American culture, and the public expects to reap considerable benefit from the creative and innovative contributions of scientists. As science becomes increasingly intertwined with major social, philosophical, economic, and political issues, scientists become more accountable to the larger society of which they are a part. As a consequence, it is more important than ever that individual scientists and their institutions periodically reassess the values and professional practices that guide their research as well as their efforts to perform their work with integrity.

Integrity characterizes both individual researchers and the institutions in which they work. For individuals, it is an aspect of moral character and experience.¹ For institutions, it is a matter of creating an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness, and lawfulness that inform institutional practices.

For the individual scientist, integrity embodies above all a commitment to intellectual honesty and personal responsibility for one's actions and to a range of practices that characterize responsible research conduct. These practices include:

- intellectual honesty in proposing, performing, and reporting research;

- accuracy in representing contributions to research proposals and reports;
- fairness in peer review;
- collegiality in scientific interactions, including communications and sharing of resources;
- transparency in conflicts of interest or potential conflicts of interest;
- protection of human subjects in the conduct of research;
- humane care of animals in the conduct of research; and
- adherence to the mutual responsibilities between investigators and their research teams.

Individual scientists work within complex organizational structures. (These structures and their interactions are described in detail in [Chapter 3](#).) Factors that promote responsible conduct can exert their influences at the level of the individual; at the level of the work group (e.g., the research group); and at the level of the research institution itself. These different organizational levels are interdependent in the conduct of research. Institutions seeking to create an environment that promotes responsible conduct by individual scientists and that fosters integrity must establish and continuously monitor structures, processes, policies, and procedures that:

- provide leadership in support of responsible conduct of research;
- encourage respect for everyone involved in the research enterprise;
- promote productive interactions between trainees and mentors;
- advocate adherence to the rules regarding all aspects of the conduct of research, especially research involving human subjects and animals;
- anticipate, reveal, and manage individual and institutional conflicts of interest;
- arrange timely and thorough inquiries and investigations of allegations of scientific misconduct and apply appropriate administrative sanctions;
- offer educational opportunities pertaining to integrity in the conduct of research; and
- monitor and evaluate the institutional environment supporting integrity in the conduct of research and use this knowledge for continuous quality improvement.

Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)

Publication Misconduct

To respect the intellectual property rights of others and uphold the standards for academic publishing, publishers of book or journal is adopting a zero tolerance policy towards papers associated with publication misconduct. Publication misconduct includes plagiarism, fabrication, falsification, inappropriate authorship, duplicate submission/multiple submissions, overlapping publication, and salami publication.

1. **Plagiarism:** Plagiarism is the appropriation of another person's thoughts, ideas, data, figures,

research methods, or words without giving appropriate credit, or the over-citation of another person's published work.

2. **Fabrication:** Fabrication is the practice of making up data or results without having performed

relevant research.

3. **Falsification:** Falsification is the practice of changing data or results intentionally such that misleading conclusion is drawn.

REDUNDANT PUBLICATIONS

Duplicate Publication:

- When you publish a new paper similar to published paper by another author or your own paper without acknowledging the source and without getting permission from the original author is called duplicate publication.
- Even if you change the title or abstract data and results remain same.
- It violates the copyright of paper.
- Researchers who study the paper get the results count as twice.
- Wastage of editorial views/reviews.
- Republication of same work unjustly for limited space and denies the others author right to publish a paper.

Do's and Don's of Duplicate Publication

- Do not replicate the contents from any other your published paper.
- Do not offer other preliminary reports about the published papers to any other company without the permission of the journal.
- When submitting your paper in any journal or any other editors provide copies of your published papers and related papers for complete transparency.
- When quoting data from your published paper, Include few sentences , place the text in quotations and marks then with cites and source.

Redundant Publications

Salami Slicing

- Salami Slicing is the practice of fragmenting the single coherent bodies into as many as smaller publications as possible.

- An author breaks up the study into two or many slices of their work.
- A single research is divided into slices called as publication unit.
- Authors do it “to increase their publication count, to achieve career progression, to gain recognition, to get more funding, to achieve self-satisfaction.

Selective reporting and misrepresentation of data.

Selective reporting bias is when results from scientific research are deliberately not fully or accurately reported, in order to suppress negative or undesirable findings. The end result is that the findings are not reproducible, because they have been skewed by bias during the analysis or writing stages.

Selective reporting is one type of bias which undermines the integrity of academic research. It is a large contributor to the current ‘reproducibility crisis’ facing scientific publishing

Selective reporting is important, and many people still ignore the issue. And it's one of the root causes of the current replicability crisis we are facing not only in biomedical sciences, in the social sciences, but it's clear that it's also happening in other types of sciences.

As Professor Bouter explains, selective reporting bias can incorporate a number of other types of bias, such as :

- **Publication bias** – where the results of negative clinical trials are not published or under-published
- **Outcome reporting bias** – where the results of negative clinical trials are cherry-picked or distorted to improve the overall findings
- **Spin** – communicating results in a way which amplifies positive findings or tones down negative findings
- **Citation bias** – positive studies are more likely to be cited than negative studies

Selective reporting bias, FFP, and other examples of research misconduct, all contribute to a culture of mistrust in science and academia. However, journal editors can play a role in helping change this perception, by upholding a culture of research integrity on their journals.

Unit III: PUBLICATION ETHICS

Publication ethics: definition, introduction and importance - Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. - Conflicts of interest - Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types - Violation of publication ethics, authorship and contributor ship - Identification of publication misconduct, complaints and appeals - Predatory publisher and journals.

1. Publication Ethics

Ethical standards for publication exist to ensure high-quality scientific publications, public trust in scientific findings, and that people receive credit for their work and ideas.

The **Committee on Publication Ethics (COPE)** is an international forum for editors and publishers of peer-reviewed journals that provide the **code of conduct** and **best practice guidelines** that define publication ethics and advises editors on how to handle cases of research and publication misconduct. In this editorial, we introduce concepts collectively called **publication ethics** including statutory and ethics approval, informed consent, data manipulation and research fraud, plagiarism, simultaneous submission, duplicate publication, self-citation, consent to reproduce published material, ethics of authorship, and conflicts of interest. It is important to avoid the following

Data fabrication and falsification:

Data fabrication means the researcher did not actually do the study, but faked the data. Data falsification means the researcher did the experiment, but then changed some of the data.

Plagiarism:

Taking the ideas and work of other scientists without giving them credit is unfair and dishonest. Copying even one sentence from someone else's manuscript, or even one of your own that has previously been published, without proper citation is considered plagiarism—use your own words instead.

Multiple submissions:

It is unethical to submit the same manuscript to more than one journal at the same time. Doing this wastes the time of editors and peer reviewers, and can damage the reputation of the authors and the journals if published in more than one journal as the later publication will have to be retracted.

Redundant publications (or 'salami' publications):

This means publishing many very similar manuscripts based on the same experiment. Combining your results into one very robust paper is more likely to be of interest to a selective journal. Editors are likely to reject a weak paper that they suspect is a result of salami slicing.

Improper author contribution or attribution:

All listed authors must have made a significant scientific contribution to the research in the manuscript and approved all its claims. Don't forget to list everyone who made a significant scientific contribution, including students and laboratory technicians. Do not "gift" authorship to those who did not contribute to the paper. The International Committee of Medical Journal Editors has detailed guidelines on authorship that are useful for scientists in all fields: International Committee of Medical Journal Editors.

Many journals have tools and processes in place to identify researchers that engage in unethical behavior. If you are caught your manuscript may be rejected without review and your institution informed.

Publication Ethics Checklist	
Approval and Consent	<ul style="list-style-type: none"> Do you have approval of the relevant Regulatory Authorities, Institutional Review Board and Ethics Committee? Have you registered your clinical trial? Have you documented Informed Consent?
Data Accuracy Falsification Fabrication	<ul style="list-style-type: none"> Is there manipulation of material, equipment, process or data? Have you double-checked data for accuracy? <p>Is there any lurking fake data?</p>
Plagiarism and Self-Plagiarism	<ul style="list-style-type: none"> Have you used your own prior work or copied others' work? If so, have you cited these correctly? Do you have written permission for reproduced material, figures or tables?
Submission Fraud	<p>Is there simultaneous submission to two journals?</p> <p>Have you published the entire work or part of it (salami-slicing) already?</p> <p>Have you excessively cited your own publications?</p>
Ethics of Authorship	<ul style="list-style-type: none"> Have you included all the authors in a specific pre-agreed order? Do you have an agreement with co-authors? Are the co-authors aware of the contents of the publication? Have they had access to, and hold themselves responsible for the data and its interpretation? Is there is any Ghost Author or a "Guest Author"?
Conflict of Interest	<p>Have you declared relevant interests and relationships that could be seen as influencing your findings (whether financial or scientific)?</p>

Importance of Ethics

There are several reasons why it is important to adhere to ethical norms in research.

First, norms promote the aims of research, such as knowledge, truth, and avoidance of error. For example, prohibitions against fabricating, falsifying, or misrepresenting research data promote the truth and minimize error.

Second, since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the **values that are essential to collaborative work**, such as trust, accountability, mutual respect, and fairness. For example, many ethical norms in research, such as guidelines for authorship, copyright and patenting policies, data sharing policies, and confidentiality rules in peer review, are designed to protect intellectual property interests while encouraging collaboration. Most

researchers want to receive credit for their contributions and do not want to have their ideas stolen or disclosed prematurely.

Third, many of the ethical norms help to ensure that researchers can be held **accountable to the public**. For instance, federal policies on research misconduct, conflicts of interest, the human subjects protections, and animal care and use are necessary in order to make sure that researchers who are funded by public money can be held accountable to the public.

Fourth, ethical norms in research also help to build **public support** for research. People are more likely to fund a research project if they can trust the quality and integrity of research.

Finally, many of the norms of research promote a variety of other important **moral and social values**, such as social responsibility, human rights, animal welfare, compliance with the law, and public health and safety. Ethical lapses in research can significantly harm human and animal subjects, students, and the public. For example, a researcher who fabricates data in a clinical trial may harm or even kill patients, and a researcher who fails to abide by regulations and guidelines relating to radiation or biological safety may jeopardize his health and safety or the health and safety of staff and students.

Ethical Principles

Honesty	Objectivity	Integrity	Carefulness
Openness	Transparency	Accountability	Intellectual property
Confidentiality	Social Responsibility	Non-discrimination	Competence

2. Best practices / standards setting initiatives and guidelines : COPE & WAME

a) COMMITTEE ON PUBLICATION ETHICS (COPE)

Guidelines On Good Publication Practice'

COPE was founded in 1997 to address breaches of research and publication ethics. A voluntary body providing a discussion forum and advice for scientific editors, it aims to find practical ways of dealing with the issues, and to develop good practice.

Intellectual honesty should be actively encouraged in all medical and scientific courses of study, and used to inform publication ethics and prevent misconduct. It is with that in mind that these guidelines have been produced.

The guidelines were developed from a preliminary version drafted by individual members of the committee, which was then submitted to extensive consultation. They address: study design and ethical approval, data analysis, authorship, conflict of interests, the peer review process, redundant publication, plagiarism, duties of editors, media relations, advertising, and how to deal with misconduct.

These guidelines are intended to be advisory rather than prescriptive, and to evolve over time. We hope that they will be disseminated widely, endorsed by editors, and refined by those who use them.

1. Study design and ethical approval

Good research should be well justified, well planned, appropriately designed, and ethically approved. To conduct research to a lower standard may constitute misconduct.

2. Data analysis

Data should be appropriately analysed, but inappropriate analysis does not necessarily amount to misconduct. Fabrication and falsification of data do constitute misconduct.

3. Authorship

There is no universally agreed definition of authorship, although attempts have been made. As a minimum, authors should take responsibility for a particular section of the study.

4. Conflicts of interest

Conflicts of interest comprise those which may not be fully apparent and which may influence the judgment of author, reviewers, and editors. They have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived.

They may be personal, commercial, political, academic or financial.

“Financial” interests may include employment, research funding, stock or share ownership, payment for lectures or travel, consultancies and company support for staff.

5. Peer review

Peer reviewers are external experts chosen by editors to provide written opinions, with the aim of improving the study.

Working methods vary from journal to journal, but some use open procedures in which the name of the reviewer is disclosed, together with the full or “edited” report.

6 Redundant publication

Redundant publication occurs when two or more papers, without full cross reference, share the same hypothesis, data, discussion points, or conclusions.

7 Plagiarism

Plagiarism ranges from the unreferenced use of others’ published and unpublished ideas, including research grant applications to submission under “new” authorship of a complete paper, sometimes in a different language. It may occur at any stage of planning, research, writing, or publication: it applies to print and electronic versions.

8 Duties of editors

Editors are the stewards of journals. They usually take over their journal from the previous editor(s) and always want to hand over the journal in good shape.

Most editors provide direction for the journal and build a strong management team.

They must consider and balance the interests of many constituents, including readers, authors, staff, owners, editorial board members, advertisers and the media.

9 Media relations

Medical research findings are of increasing interest to the print and broadcast media. Journalists may attend scientific meetings at which preliminary research findings are presented, leading to their premature publication in the mass media.

10 Advertising

Many scientific journals and meetings derive significant income from advertising.

b) WAME – World Association of Medical Editors

Medical journals aspire to select, through peer review, the highest quality science. To achieve this, the entire peer review and publication process must be thorough, objective, and fair. Almost every aspect of this process involves important ethical principles and decisions, which are seldom explicitly stated and even less often shared with the important readership. Journals' reputations depend on the trust of readers, authors, researchers, reviewers, editors, patients, research subjects, funding agencies, and administrators of public health policy. This trust is enhanced by describing research as explicitly as possible the journal's policies to ensure the ethical treatment of all participants in the publication process.

A comprehensive policy on publication ethics is summarized in this article, which addresses all the major areas of ethics we believe contemporary science journals should consider. Our aim is to encourage editors of journals to use these to develop such policies for their journals and make them accessible to their constituents by publishing them in print or on the web. The document makes recommendations on what we consider to be the best solutions to address these ethical problems, but we expect individual journals to customize the policies to best fit their own situations. However, we believe that every journal should have an explicit policy on each of these issues, and that these policies should be published in each journal so they are accessible to readers, authors, and reviewers.

- Conflict of Interest in Peer-Reviewed Medical Journals
- Study Design and Ethics
- Authorship
- Peer Review
- Editorial Decisions
- Originality, Prior Publication, and Media Relations
- Plagiarism
- Advertising
- Responding to Allegations of Possible Misconduct
- Relation of the Journal to the Sponsoring Society (if applicable)

3. Conflicts of Interest(COI)

All manuscripts for articles, original research reports, editorials, comments, reviews, book reviews, and letters that are submitted to the journal must be accompanied by a conflict of interest disclosure statement or a declaration by the authors that they do not have any conflicts of interest to declare. All articles that are published in the journal must be accompanied by this conflict of interest disclosure statement or a statement that the authors have replied that they have no conflicts of interest to declare. If a journal prints unsigned editorials, they should not have been written by anyone with a conflict of interest.

To facilitate this policy, all authors must privately disclose 'ALL their potential conflicts of interest' to the editors of the journal at the time of submission. These include all financial and non-financial interests and relationships, direct employment with a private sector entity, and service on private sector and non-profit Boards and advisory panels, whether paid or unpaid. Authors should also disclose any conflict of interest that may have influenced either the conduct or the presentation of the research to the editors, including but not limited to close relationships with those who might be helped or hurt by the publication, academic interests and rivalries, and any personal, religious or political convictions relevant to the topic at hand.

In the article, the authors must include a draft statement that discloses all relevant conflicts of interest and affiliations. The relevance of financial conflicts of interest with private firms is defined as a relationship of any value with a firm that has a stake in the subject of the manuscript or its competitors. Relevance for patents is defined as any invention or pending invention connected in any way to the subject. As relevance is often in the eye of the beholder, one must err on the side of full disclosure when drafting the disclosure statement. Editors will check a draft against the private financial disclosure statement and initiate discussions toward possible adjustments, if necessary.

Non-Financial Conflicts of Interest:

Authors may have strong views about the article being submitted for publication. The authors must consider disclosing these views and the editors may choose to print any affiliations or expressions from these views that may be relevant. These may be personal, political or intellectual, and may include any expression of strongly held views relevant to the subject of submission. Such disclosures may be original or they may be references to opinions previously expressed in books or monographs, opposite editorials or public comments, or to some prior sworn testimony or lobbying of legislators or legislative bodies. Disclosable non-financial conflicts of interest will also include membership or affiliation to nongovernmental organizations that have an interest in the submission.

How do I Make a Declaration?

If you are submitting your article for publishing in a journal that requires you to make a 'Declaration of Conflicting Interests', please include such a declaration at the end of your manuscript, following any acknowledgments and prior to the references, under the heading 'Conflict of Interest Statement'. If no declaration is made, the following will be printed under this heading in your article: 'None Declared'. Alternatively, you may wish to state that 'The author(s) declare(s) that there is no conflict of interest'.

4. Publication Misconduct

To respect the intellectual property rights of others and uphold the standards for academic publishing, publishers of book or journal is adopting a zero tolerance policy towards papers associated with publication misconduct. Publication misconduct includes plagiarism, fabrication, falsification, inappropriate authorship, duplicate submission/multiple submissions, overlapping publication, and salami publication.

1.Plagiarism: Plagiarism is the appropriation of another person's thoughts, ideas, data, figures, research methods, or words without giving appropriate credit, or the over-citation of another person's published work.

2. Fabrication: Fabrication is the practice of making up data or results without having performed relevant research.

3. Falsification: Falsification is the practice of changing data or results intentionally such that misleading conclusion is drawn.

4. Inappropriate authorship: Authorship is not appropriately assigned based on the author's contributions.

5. Duplicate submission/multiple submissions: Duplicate submission/multiple submissions refers to practice of submitting the same manuscript or several manuscripts with minor differences (e.g., differences only in title, keywords, abstract, author order, author affiliations, or a small

amount of text) to two or more journals at the same time, or submitting to another journal within an agreed or stipulated period.

6. Overlapping publication: Overlapping publication refers to the practice of publishing a paper overlaps substantially with one already published.

7. Salami publication: Salami publication refers to the practice of slicing data from a large study, could have been reported in a single paper, into different pieces and publishing them in two or more articles, all of which cover the same population, methods, and question.

8. Inappropriate authorship: Authorship is not appropriately assigned based on the author's contributions.

5. Violation of Publication Ethics. Authorship and Contributorship

Authorship and Contributorship

Naming authors on a scientific paper ensures that the appropriate individuals get credit, and are accountable, for the research. Deliberately misrepresenting a scientist's relationship to their work is considered to be a form of misconduct that undermines confidence in the reporting of the work itself.

While there is no universal definition of authorship, an "author" is generally considered to be an individual who has made a significant intellectual contribution to the study.

According to the guidelines for authorship established by the International Committee of Medical Journal Editors (ICMJE), "All persons designated as authors should qualify for authorship, and all those who qualify should be listed."

Four criteria must all be met to be credited as an author:

- Substantial contribution to the study conception and design, data acquisition, analysis, and interpretation.
- Drafting or revising the article for intellectual content.
- Approval of the final version.
- Agreement to be accountable for all aspects of the work related to the accuracy or integrity of any part of the work.

The following are some general guidelines, which may vary from field to field:

- The order of authorship should be "a joint decision of the coauthors".
- Individuals who are involved in a study but don't satisfy the journal's criteria for authorship, should be listed as "Contributors" or "Acknowledged Individuals". Examples include: assisting the research by providing advice, providing research space, departmental oversight, and obtaining financial support.
- For large, multi-center trials, the list of clinicians and centers is typically published, along with a statement of the individual contributions made. Some groups list authors alphabetically, sometimes with a note to explain that all authors made equal contributions to the study and the publication.

Three types of authorship are considered unacceptable:

- "Ghost" authors, who contribute substantially but are not acknowledged (often paid by commercial sponsors);
- "Guest" authors, who make no discernible contributions, but are listed to help increase the chances of publication;

- "Gift" authors, whose contribution is based solely on a tenuous affiliation with a study.

When not appropriately addressed, authorship issues can lead to dispute. Some disputes are based on misconduct (such as lying about one's role); some stem from questions of interpretation, such as the degree to which a person's contribution can be considered "substantial," and if authorship is justified.

Other potential issues could include: being involved in a study, but not listed as an author or contributor; someone taking your idea and publishing a paper claiming full authorship; and finding your name on a publication without your permission.

If a complaint is filed over a dispute, an investigation may be conducted with the journal editor and author's institution to reach a resolution.

Because of the potential for ambiguity and confused expectations, it is strongly advised that before the research begins, a meeting take place to document how each person will be acknowledged.

Issues around authorship can be complex and sensitive. Early career researchers who encounter such situations may fear they will jeopardize their reputation and career if they speak up. Take the time to fully understand each journal's guidelines for authorship, and industry requirements. If you find yourself in a challenging situation that you are not sure how to handle, consult with a trusted mentor or supervisor.

6. Identification of publication misconduct, complaints and appeals

The following are the problems classified as misconduct of publication

- Plagiarism • Text recycling ('self-plagiarism')
- Duplicate/redundant publication
- Authorship issues
- Disputes, gift authorship, ghost authorship
- Data fabrication/falsification
- Image manipulation
- Undisclosed competing interests
- Lack of ethics approval – animal or human
- Unethical treatment of participants
- Lack of consent

How to Handle Reviewer Misconduct

Reviewer misconduct can range from minor issues, such as rude or unconstructive reviews, to major issues, such as the appropriation of author's ideas or data.

As an editor, you entrust reviewers with a high level of responsibility. They are given access to privileged information (i.e. unpublished research) and their recommendations can sway the publication outcome. Unfortunately, there are rare occasions when that trust is misplaced.

Minor problems are relatively easy to respond to. Delete rude comments, and don't invite reviewers again if they supply poor quality, late, or unconstructive reviews.

There may be other instances where editors receive complaints from authors about reviewer misconduct. We outline approaches to these instances below.

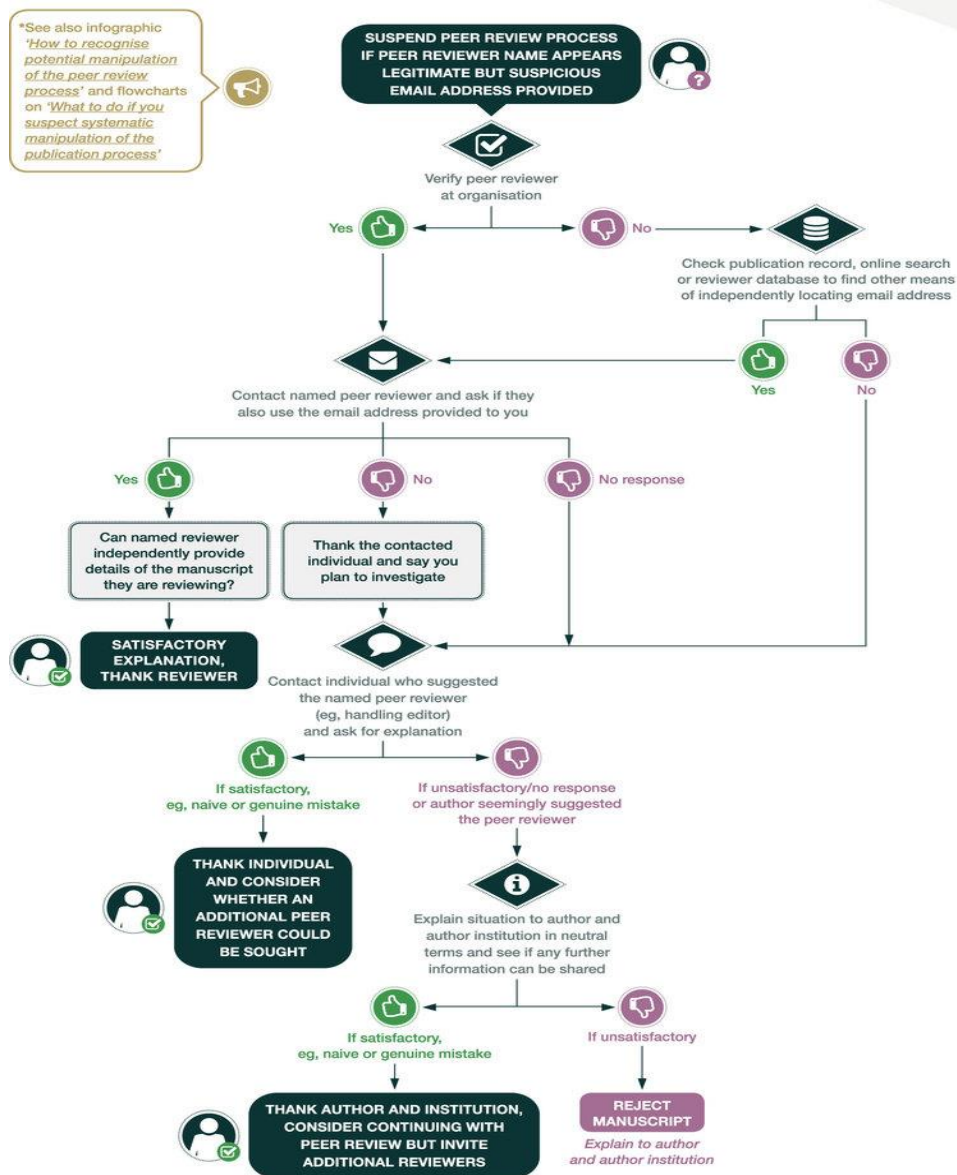


Fig : COPE Flowchart

Appeals

Following the rejection of a paper, the author may appeal to the editor. Your journal should have a clear appeals policy stating under what circumstances an appeal will be considered and how the appeal process will be handled.

Conflicts of Interest

One issue authors might raise during an appeal for reviewer misconduct is bias due to conflict of interests. If your journal operates open peer review, the author will know the identity of the reviewer and can specify the potential conflict of interests. For journals operating single or double blind peer review, accusations of bias are likely to be suppositional rather than substantiated, but should still be given careful consideration.

Appeals can often be resolved by getting a second opinion. Engaging a new reviewer will eliminate the potential alleged bias. It is difficult in these cases to evidence malicious intent on behalf of a reviewer, but you retain the right not to use reviewers who you feel are unable to give an objective assessment.

Appropriated Data

Another possible complaint of reviewer misconduct concerns the alleged appropriation of data during the review process. An author may raise a complaint if they discover their ideas or data are used in a published paper. They may conclude that these can only have been appropriated during the review process. These issues can be complicated because there is likely to be some time lag between the review process conducted at your journal and the publication of the appropriated data.

Because complaints may involve another journal and another editorial team, it's best to make sure you keep them informed. We recommend following the steps outlined in the **COPE Flowcharts**.

7. Predatory publisher and journals

Predatory publishing, sometimes called write-only publishing or deceptive publishing, is an exploitative academic publishing business model that involves charging publication fees to authors without checking articles for quality and legitimacy and without providing editorial and publishing services that legitimate academic journals provide, whether open access or not. They are regarded as predatory because scholars are tricked into publishing with them, although some authors may be aware that the journal is poor quality or even fraudulent. New scholars from developing countries are said to be especially at risk of being misled by predatory publishers. According to one study, 60% of articles published in predatory journals receive no citations over the five-year period following publication.

Complaints that are associated with predatory open-access publishing include:

- Accepting articles quickly with little or no peer review or quality control, including hoax and nonsensical papers.
- Notifying academics of article fees only after papers are accepted.
- Aggressively campaigning for academics to submit articles or serve on editorial boards.
- Listing academics as members of editorial boards without their permission, and not allowing academics to resign from editorial boards.
- Appointing fake academics to editorial boards.
- Mimicking the name or web site style of more established journals.
- Making misleading claims about the publishing operation, such as a false location.
- Using ISSNs improperly.
- Citing fake or non-existent impact factors.
- Boasting about being "indexed" by academic social networking sites (like ResearchGate) and standard identifiers (like ISSNs and DOIs) as if they were prestigious or reputable bibliographic databases.

Predatory publishers have also been compared to vanity presses.

Predatory publishers

- Prioritize self-interest at the expense of scholarship
- Deviate from best editorial and publication practices
- Use indiscriminate solicitation practices (repeated e-mails)

How to identify predatory publishers?

- | | | |
|------------------|----------------------|----------------|
| • Author Fees | No quality check | No ISSN or DOI |
| • No Peer Review | No Ethical Approvals | |

Unit 4

Open Access Publishing

1. Open Access Publication and Initiatives:

INTRODUCTION

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public, they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds.

Important developments to be noted in this regard are the Budapest Open Access Initiative of 2002, Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities of 2003, Bethesda Statement on Open Access Publishing of 2003, and the Salvador Declaration on Open Access of 2005. All these developments have focused on the role that Open Access initiative. Participants from all around the world, representing researchers, publishers, universities, libraries, journals, institutions, learned societies, and other related Open Access initiatives attended these meetings to examine the issues surrounding Open Access movement. They discussed many points of view on the most affordable and effective policies to implement the Open Access movement across the scientific world.

They also explored the different strategies to unite all Open Access initiatives under one roof and work together to achieve faster, in-depth success.

The Open Access initiative has also been supported by UNESCO for the benefit of global science and the progress of mankind. A clear mandate has been given by UNESCO, stating that UNESCO should 'maintain, increase and diffuse knowledge, by assuring the conservation and protection of the world's inheritance of books, works of art and monuments of history and science.

Definition:

By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

- **Open access journal:** All journal content is available for researchers to read, print, download, distribute, or link to without fees.
- **Hybrid journal:** Some content is open access, typically via publication or author fees.

- **Embargoed open access:** Also called delayed open access. This is a subscription model that provides open access to content after an embargo period expires. For example, the most current content may only be available to subscribers, while the archived issues are open access.

IS OPEN ACCESS COMPATIBLE WITH COPYRIGHT?

The short answer is that **copyright law** gives the copyright holder the right to make access open or restricted, and the BOAI seeks to put copyright in the hands of authors or institutions that will consent to make access open.

I would like to launch a new open-access journal. How do I do it?

Launching an open-access journal has much in common with launching a print journal. Apart from the people and the funding, there is the niche to fill, its size, its coverage by other journals, and the risk of failing to attract enough authors or readers. But if you have decided to move forward, and have competent, experienced, and energetic people ready to serve as editor and editorial board, and committed to open access, then you should examine the [software packages](#) available to automate most of the tasks of operating an online journal. Some offer a turn-key solution. For more specific and detailed help, see the links and advice collected on the following web pages (alphabetical by sponsoring organization).

Different ways of Open Access:

- DOAJ (Directory of Open Access Journal) and Open J-Gate (OJ).
- DOAJ is a free Portal and OJ is a Subscription based one.
- Subject areas covered are almost the same in both Portals except

addition of Library and Information Science in OJ.

- Number of Journals listed are slightly high in case of OJ when compare to DOAJ.
- Peer-reviewed Journals are more in DOAJ when compare to OJ.
- Number of Journals covered for indexing are very high in OJ when compare to DOAJ.
- Number of Articles indexed are very high in OJ when compare to DOAJ.
- Popular and Trade-press Journals are covered by OJ but not by DOAJ.

OPEN ACCESS PUBLISHERS

A selected list of Open Access Publishers is given below:

- Bentham Open Access.
- BioMed Central.
- Hindawi (98 full open access STM journals).
- Indian Academy of Sciences.
- Ivyspring International Publisher.
- Libertas Academica (60+ fully open access journals, mainly biological sciences and clinical medicine).
- Medknow Publications (Publishers of Biomedical Journal from India).
- MDPI (Molecular Diversity Preservation International (MDPI), Basel, Switzerland) (Some journals content only open access).
- Public Library of Science.
- Scholarly E
- xchange.

2. **SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies**

There are tools available to help researchers comply with their funders Open Access mandates:

- SHERPA/RoMEO
- and SHERPA/FACT

How can SHERPA help researchers?

SHERPA offers many services to the research community

[RoMEO](#) is one of these services

It provides information on publishers' copyright and archiving policies

SHERPA/RoMEO:

SHERPA/RoMEO is for searching publisher or individual journal Open Access policies

Sometimes publishers might have an overall Open Access policy for all their journals

Sometimes individual journals belonging to the same publisher might have different Open

Access policies

SHERPA/RoMEO can be searched for either publisher or journal information

Publisher copyright policies & self-archiving

[English](#) | [Español](#) | [Magyar](#) | [Português](#)

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☒ **Journal titles or ISSNs**
☐ **Publisher names**

Public Library of Science

☒ **Exact title**
☐ **starts with**
☐ **contains**
☐ **ISSN**

[Advanced Search](#)

Use this site to find a summary of permissions that are normally given as part of each publisher's copyright transfer agreement.

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- Type in the publisher or journal name in the simple search box

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Search

☒ **Journal titles or ISSNs**
☐ **Publisher names**

Public Library of Science

☒ **Exact title**
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- Type in the publisher or journal name in the simple search box
- Alternatively, you can use the advanced search tool for searching by country, last updated information, etc.

● Perform your search

Publisher copyright policies & self-archiving

English | [Español](#) | [Magyar](#) | [Português](#)

One publisher found when searched for: Publisher: **Public Library of Science**

Publisher:	Public Library of Science , United States
Journals:	7 journals - involving 1 other organisation
RoMEO:	This is a RoMEO green publisher
Copyright:	Policy
Updated:	05-Jan-2011

These are the publisher's default policies. Individual journals may have special permissions, especially if they involve other organisations or have paid open access options. Always run a journal title or ISSN search to check.

Author's Pre-print:	✓ author can archive pre-print (ie pre-refereeing)
Author's Post-print:	✓ author can archive post-print (ie final draft post-refereeing)
Publisher's Version/PDF:	✓ author can archive publisher's version/PDF
General Conditions:	<ul style="list-style-type: none"> • Creative Commons Attribution License • Eligible UK authors may deposit in OpenDepot • Publisher's version/PDF may be used
Mandated OA:	Compliance data is available for 23 funders
RoMEO Publisher ID:	112 - Suggest an update for this record
Link to this page:	http://www.sherpa.ac.uk/romeo/pub/112/

• Relevant journal/publisher information comes up with links to its Open Access policy pages

This summary is for the publisher's default policies and changes or exceptions can often be negotiated by authors. All information is correct to the best of our knowledge but should not be relied upon for legal advice.

- RoMEO colour codes are displayed for the journal/publisher indicating its Open Access archiving policies

RoMEO Colour	Archiving policy
Green	Can archive pre-print and post-print or publisher's version/PDF
Blue	Can archive post-print (ie final draft post-refereeing) or publisher's version/PDF
Yellow	Can archive pre-print (ie pre-refereeing)
White	Archiving not formally supported


How can SHERPA help researchers?

SHERPA also offers a new service that combines [RoMEO](#) and [JULIET](#)


It is [SHERPA/FACT](#)

[SHERPA/FACT](#) pulls in data from RoMEO and JULIET, providing information on publishers' copyright and archiving policies based on funder mandate

SHERPA/FACT is available in beta version.


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Beta
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RESEARCH COUNCILS UK
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This is a beta version. Please send comments and updates to fact@sherpa.ac.uk.

SHERPA/FACT is a tool to help researchers check if the journals in which they wish to publish their results comply with their funder's requirements for open access to research.

Funders & Authors Compliance Tool

Helping you comply with research funders' policies on open access to publications

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 ☐ BBSRC
 ☒ EPSRC
 ☐ ESRC
 ☐ MRC
 ☐ NERC
 ☐ STFC
 ☐ Wellcome Trust

Journal (Title or ISSN):

IEEE Transactions on Information Theory

Publication stage:

Not yet submitted for publication. ▾

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FACT information is accurate to the best of our knowledge, but should not be relied upon for legal advice.

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- Select your publication stage
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SHERPA/FACT is a tool to help researchers check if the journals in which they wish to publish their results comply with their funder's requirements for open access to research.

Funders & Authors Compliance Tool

Helping you comply with research funders' policies on open access to publications

Funder: Engineering and Physical Sciences Research Council

Journal: IEEE Transactions on Information Theory

ISSN: 0018-9448, Publisher: Institute of Electrical and Electronics Engineers (IEEE)

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✗ You cannot publish your article with open access

This is not an open access journal, nor does it have a paid open access option.

✓ You can archive your article in an open access repository

You may deposit the Accepted version of your article in institutional repositories upon publication.

What next? I have not yet submitted my article for publication.

Self-archive your article within 6 months of publication.

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- The database will provide you with the journal's Open Access

compliance status based on what the Open Access mandate of the funder is

- As the tool is in its beta version, it is always a good idea to check the website of the publication too to confirm compliance; it is also a good idea to contact the publisher directly if statements are not clear and further information is required

4. Journal finger/ journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer, Journal Suggester, etc.

This will show you how to use Scopus and Web of Science to identify journals aligned to your research topic.

You can use the technique to identify potential journal outlets and their metrics when publishing your research.

1. From the Library website select, A-Z Databases
2. Select S, then Scopus
3. Enter your UOW username and password

Our example topic is: Fostering collaboration in online learning at university

At the search screen, enter your search strategy.

You'll notice that we have used quotation marks for common phrases, asterisk to find variations in word endings and OR to include synonyms.

Click search. Here are our results.

To identify potential journals, limit your results by Document Type, then select Articles and Review Articles, then select Limit To.

You can browse source titles to see the range of journals in your search results; click onto a journal title to view its metrics.

The journal, Computers & Education has a CiteScore of 5.88. It is placed into 2 subject categories and is ranked 7 out of 979 in the subject Education.

Repeat your search in Web of Science. Click search. Under Document type, select Article and Review to refine your search. Select View all Options to examine the source titles in your result list. Click onto a journal title view its Impact factor, Rank and Quartile.

If you need more help, [contact the Library](#).

- [Scopus Journal Analyzer](#)

Compare up to 10 journal titles. Gives a range of metrics including whether they're well cited and if they publish many review articles

- [Elsevier Journal Finder](#)

Paste in the title and/or abstract of your paper to match with suitable journals

- [Springer Journal Suggester](#)

Enter the details of your paper to get suggested journal matches.

- [Manuscript matcher](#)

Accessed via a free EndNote Online account. Use your manuscript details to find relevant journals.

- [Open Journal Matcher](#)

Paste details of your abstract to find relevant Open Access journals

- [IEEE Publication Recommender](#)

Finds recommended IEEE publications based on keywords from your paper.

- [JANE](#)

Journal/Author Name Estimator. Compare your paper's title and/or abstract with millions of others in PubMed to find matching articles, authors and journals.

3. Software tool to identify predatory publications developed by SPPU

- Predatory publishers have been reported to hold submissions hostage, refusing to allow them to be withdrawn and thereby preventing submission in another journal.
- A predatory journal is a publication that actively asks researchers for manuscripts.
- They have no peer review system and no true editorial board and are often found to publish mediocre or even worthless papers.
- They also ask for huge publication charges.

Why do academics publish in such journals?

- In research environments, there is usually more value for quantity over quality.
- Hiring and promotion of academics is based largely on their number of publications. Predatory journals have helped many pseudo-researchers to prosper.

What is the harm caused by predatory journals?

- **Predatory and low-quality journals corrupt the literature.**
- **Medical science has been particularly hit hard**, with journals now devoted to unscientific medicine.
- **“Peer review is at the heart of academic evaluation.**
- **Publishing without peer review [while pretending that peer review was done] gives poor and mediocre academics a chance for jobs and promotions which should go to better qualified researchers,”.**

How does one find out if a given journal is predatory or not?

- **some people think any journal from an unknown publisher, or a journal that charges for publication, is necessarily predatory.**
- **That is not necessarily correct. The important thing is to dig deeper and find the quality of submitted manuscripts and its standards,”.**

Beall's criteria for identification of predatory journals

- Here is a list Beall's criteria for identification of predatory journals and publishers
- No single individual is identified as specific journal's editor with no formal editorial/review board or the same editorial board for more than one journal.
- The editor and/or review board members do not have academic expertise in the journal's field.
- Provides insufficient information or hides information about author fees, offering to publish an author's paper and later sending an unanticipated 'surprise' invoice.
- No proper indexing.

- The name of a journal is unrelated with the journal's mission.
- The name of a journal does not adequately reflect its origin (e.g. a journal with the word 'Canadian' or 'Swiss' in its name when neither the publisher, editor, nor any purported institutional affiliate relates whatsoever to Canada or Switzerland).

Checklist to Identify Fake Journal

- Do you or your colleagues know the journal?
- Can you easily identify and contact the publisher?
- Is the journal clear about the type of peer review it uses?
- Are articles indexed in services that you use?
- Is it clear what fees will be charged?
- Do you recognise the editorial board?
- Is the publisher a member of a
- The publisher has poorly maintained websites, including dead links, prominent misspellings and grammatical errors on the website.
- The publisher makes unauthorised use of licensed images on their website, taken from the open web, without permission or licensing from the copyright owners.
- Re-publish papers already published in other venues/outlets without providing appropriate credits.

HRD ministry to remove all bogus Journals:

- **The dubious publications were identified by the team of researchers that included Bhushan Patwardhan, a professor at the Savitribai Phule Pune University (SPPU), a special invitee member on the UGC Standing Committee for Notification of Journals and former vice-chancellor of Symbiosis International University.**
- **Out of the 1,336 journals studied, 897 were disqualified from the UGC- approved list of journals by the human resource development ministry for providing false information such as an incorrect ISSN (International Standard Serial Number), making false claims about the impact getting published in their pages would have, indexing in dubious databases, poor credentials of editors and non-availability of information such as an address, website details and names of editors. Papers published in the disqualified journals will not be considered valid.**
- “It is an alarming situation that such a huge percentage of the journals are bogus. Globally, it hampers the image of our country,” Patwardhan said.
- The HRD ministry has adopted a very positive approach to dealing with the issue “and has decided to remove all the bogus journals from the UGC list shortly,” Patwardhan said.

Unit V: PUBLICATION MISCONDUCT (4Hrs.)

Group Discussion (2 Hrs.) : a) Subject specific ethical issues, FFP, authorship b) Conflicts of interest c) Complaints and appeals: examples and fraud from India and abroad

Software tools (2 Hrs.) : Use of plagiarism software like Turnitin, Urkund and other open source software tools.

Subject specific ethical issues

Informed Consent

A norm of voluntary participation is presumed in all sociological research projects. In other words, we cannot force anyone to participate in our research without that person's knowledge or consent (so much for that *Truman Show* experiment). Researchers must therefore design procedures to obtain subjects' informed consent to participate in their research. Informed consent is defined as a subject's voluntary agreement to participate in research based on a full understanding of the research and of the possible risks and benefits involved. Although it sounds simple, ensuring that one has actually obtained informed consent is a much more complex process than you might initially presume.

Protection of Identities

In protecting subjects' identities, researchers typically promise to maintain either the anonymity or the confidentiality of their research subjects. Anonymity is the more stringent of the two. When a researcher promises anonymity to participants, not even the researcher is able to link participants' data with their identities.

Anonymity may be impossible for some sociological researchers to promise because several of the modes of data collection that sociologists employ, such as participant observation and face-to-face interviewing, require that researchers know the identities of their research participants. In these cases, a researcher should be able to at least promise confidentiality to participants. Offering confidentiality means that some identifying information on one's subjects is known and may be kept, but only the researcher can link participants with their data and he or she promises not to do so publicly.

Disciplinary Considerations

1. Professional competence

2. Integrity
3. Professional and scientific responsibility
4. Respect for people's rights, dignity, and diversity
5. Social responsibility

The principle of professional competence states that researchers should recognize their own limitations and only conduct research for which they have been properly trained. It also states that researchers should engage in ongoing education for themselves in order to remain competent. The principle of integrity directs that sociologists be "honest, fair, and respectful" in *all* their professional activities including, but not limited to, their research activities. The third principle, professional and scientific responsibility, guides sociologists to be respectful in their relationships with one another at the same time that it warns against collegiality if it impedes one's ability to behave ethically. This principle balances scientific collegiality with public trust in sociology. The fourth principle, respect for people's rights, dignity, and diversity, addresses the need to reduce bias in all professional activities. Finally, social responsibility, the fifth principle, states that sociologists should "strive to advance the science of sociology and serve the public good."

Interest

An interest may be defined as a commitment, goal, or value held by an individual or an institution.

Examples include a research project to be completed, gaining status through promotion or recognition, and protecting the environment. Interests are pursued in the setting of social interactions.

Conflict of Interest (COI)

A conflict of interest exists when two or more contradictory interests relate to an activity by an individual or an institution. The conflict lies in the situation, not in any behavior or lack of behavior of the individual. That means that a conflict of interest is not intrinsically a bad thing.

Examples include a conflict between financial gain and meticulous completion and reporting of a research study or between responsibilities as an investigator and as a treating physician for the same trial participant.

Institutional examples include the unbalancing of the institutional mission by acceding to the space requests of a large donor for an idiosyncratic program.

Other definitions include:

Conflicts of interest are "situations in which financial or other personal considerations may compromise, or have the appearance of compromising, an investigator's judgement in conducting or reporting research." AAMC, 1990

"A conflict of interest in research exists when the individual has interests in the outcome of the research that may lead to a personal advantage and that might therefore, in actuality or appearance compromise the integrity of the research." NAS, Integrity in Scientific Research

Appeals and Complaints

Policy and Process

The below procedure applies to appeals to editorial decisions, complaints about failure of processes such as long delays in handling papers and complaints about publication ethics. The complaint should in first instance be handled by the Editor-in-Chief(s) responsible for the journal and/or the Editor who handled the paper. If they are the subject of the complaint please approach the in-house publishing contact. (Please check the contacts page on the journal homepage. If no publishing contact is identified send the query to ethics.reporting@springernature.com).

Complaint about scientific content, e.g. an appeal against rejection

The Editor-in-Chief or Handling Editor considers the authors' argument, the reviewer reports and decides whether

- The decision to reject should stand;
- Another independent opinion is required
- The appeal should be considered.

The complainant is informed of the decision with an explanation if appropriate. Decisions on appeals are final and new submissions take priority over appeals.

Complaint about processes, e.g. time taken to review

The Editor-in-Chief together with the Handling Editor (where appropriate) and/or in-house contact (where appropriate) will investigate the matter. The complainant will be given appropriate feedback. Feedback is provided to relevant stakeholders to improve processes and procedures.

Complaint about publication ethics, e.g., researcher's author's, or reviewer's conduct

The Editor-in-Chief or Handling Editor follows guidelines published by the [Committee on Publication Ethics](#). The Editor-in-Chief or Handling Editor may ask the publisher via their in-house contact for advice on difficult or complicated cases. The Editor-in-Chief or Handling Editor decides on a course of action and provides feedback to the complainant. If the complainant remains dissatisfied with the handling of their complaint, he or she can submit the complaint to the Committee on Publication Ethics. More information can be found [here](#).

Software tools for plagiarism software:

Plagiarism by the dictionary, means "copying another person's words and pretending that they are your own". Plagiarism is not considered as a major crime but may fall under the category of copyright infringement in some cases and is a major concern for educational institutions and publishing companies. Due to these reasons, there has been an increasing demand for [plagiarism checker software](#).

List of 15 Best Free Plagiarism Detection Tools of 2021

1. [Plagiarism Checker X](#)
2. [Grammarly](#)
3. [Copyscape](#)
4. [Ginger](#)

5. [Plagscan](#)
6. [Plagiarisma](#)
7. [Duplichecker](#)
8. [Turnitin Plagiarism Checker](#)
9. [Urkund Plagiarism Checker](#)
10. [iThenticate Plagiarism Detection Software](#)
11. [CopyLeaks Plagiarism Detector](#)
12. [Quetext](#)
13. [PaperRater](#)
14. [Plagium](#)
15. [Plagly](#)

1. Plagiarism Checker X

[Plagiarism Checker X](#) is one of the best plagiarism detection tool available in the market because of its diverse features. It is a content scanning tool that helps you identify the level of plagiarism in documents like assignments, reports and articles. The software has a huge number of users around the globe, as it is extremely cost effective and reliable to use.

Key features of Plagiarism Checker X:

- Scans your documents up to 16 billion web pages across multiple search engines.
- It can locate copied content easily and you can get a side-by-side window to do the comparison.
- Supports bulk-cross comparisons which means that you can analyze multiple documents to determine their originality within single or multiple repositories.
- It can cross-examine up to 20,000 words within one second accurately.
- Your submitted content is not stored or uploaded anywhere. So, it is extremely safe and secure in every sense.
- Supports 7 languages, i.e. English, Spanish, French, German, Italian, Dutch and Portuguese.

8. Turnitin Plagiarism Checker

Turnitin software has the largest collection of academic and all forms of content on the internet to check for even the slightest possibility of academic misconduct and content duplicity. It is widely used by academic professionals to ensure content originality and ensure the educational excellence. Further, the feedback and grading features empower students to take up any new content task with confidence.

Features of Turnitin Online Plagiarism Checker:

- Instant analysis of content originality with citations and sources
- Duplicity results presented in a simple format
- Also helps with grammar and spelling checks
- Provides suggestions for better word usage
- WriteCheck by Turnitin also provides the similarity score

9. Urkund Plagiarism Checker

Urkund's anti-plagiarism tool helps detect and prevent plagiarism across multiple languages. As soon as you submit a document for plagiarism detection, Urkund online plagiarism detection starts retrieving all possible sources to provide an analysis overview. With machine learning capabilities, Urkund detects the degree of matches, paraphrasing, and more across different languages.

Features of Urkund:

- It checks for plagiarism in study materials, published materials and internet sources
- Provides relevant matches for plagiarism with higher accuracy
- Ensures complete data security and allows you to create a secure content database
- Unmatched uptime and analysis delivery speed

Urkund Plagiarism Checker Software Pricing: It provides free guides and cheat sheets for students; Urkund pricing can be requested on the official website.

Word Limit Per Search: NA

Urkund Anti Plagiarism Software Free Version: Most of the university students in India have free access to Urkund software.

Urkund Plagiarism Checker App: Web app

Languages Supported: Any language which is Unicode compliant and supports Cyrillic characters.

10.iThenticate Plagiarism Detection Software

This is one of the most trusted plagiarism detection platforms by researchers, scholars and publishers. It provides extensive reports that include the most relevant matches for content duplicity from across the 70+ billion web pages, whether current or archived. Whether you are a media publisher, government organization or the part of the legal, financial or HR team, you can ensure higher reputation of your organization with iThenticate.

Features of iThenticate Plagiarism Detector:

- You can start easily by buying credits as per your needs
- It screens content submissions for duplicity with higher uptime
- Provides the most critical matches in minutes
- Detailed reports to detect sources of plagiarism.
- Grammarly

[Grammarly plagiarism checker](#) lets you know whether your content is copied or not. Grammarly has a premium version which also detects the content that requires citations and provides an appropriate resource to give credits to the content, wherever needed. It is a free plagiarism checker for teachers, students and many more.

- Copyscape

[Copyscape plagiarism checker](#) can be used by just entering the URL of your content or you can also use the inbuilt Siteliner. It can also check how much of your content has been copied from other websites. Copyscape is an interesting tool, it not only tells you about the copied content on your page, but also shows you where your content has been copied.

Key features of Copyscape:

- It can send notifications by email whenever your content is copied.
- It comes with a WordPress plugin.
- Its premium version can check up to 10,000 pages.
- It can also allow you to create a 'private index' so that whenever any new content is generated into the system, it will go for a plagiarism check automatically.

- Ginger

[Ginger](#) develops a plagiarism checker that helps people communicate more efficiently through mobile as well as desktop devices. They use statistical algorithms in conjunction with patented Natural Language Processing (NLP) technology to contextually understand the text and intention. You can upload your text or document and it will automatically correct any spelling mistake, grammar mistake and misused words.

Key features of Ginger:

- Built with the patent-pending technology to fix your document.
- Consists of a spell checker which will help you in correcting spelling mistakes.
- It is a grammar checker that will fix a vast range of grammatical errors, typos and wrong usage of words.

- Has the feature of instant proofreading where your errors will be highlighted side by side.

Languages Supported: Ginger Translate supports 40 plus languages

- Plagscan

Almost 1 million documents are tested on [Plagscan](#) every year. It is an advanced plagiarism detection tool suitable for single users, students, and even large businesses. It is extremely time efficient and you can get the results within seconds as you can compare, scan and upload simultaneously on the Plagscan.

Key features of Plagscan:

- It can scan multiple webpages by just using the URL.
- Supports a variety of languages.
- Offers API integration.
- It has its own Plagiarism Prevention Tools.
- With its servers located in Germany, it keeps your data extremely secure.
- Provides structured reports facilitating authentic checking.

Languages Supported: All languages except, Korean, Chinese and Japanese.

- Plagiarisma

Plagiarisma is a free plagiarism detection tool that can identify copied content mainly in your essays, research papers, coursework, and dissertation. Since it is available online, it is platform independent.

Key features of Plagiarisma:

- Works on multiple platforms like Windows, Android, Blackberry, Moodle and the web.
- Supports various platforms like Google, Yahoo, Bing and Scholar.
- Helps with search engine optimization
- It can support various file formats including Word, PDF, HTML, TXT, XLS, PPTX and many more.
- Support up to 190 languages.
- It can be used offline in Windows.

Languages Supported: Supports 190 plus languages

- Duplichecker

Duplichecker is an absolutely free tool. It is the best plagiarism checker if you don't want to invest in a software because all its feature are available online free of cost. Since it is available online, it can be used on any platform, at any time, from any part of the world. It is a free tool great for SEO and it comes with text analysis tools, website management tools, keyword research tools and SEO backlinks tools.

Key features of Duplichecker:

- You can check your content with Duplichecker by pasting your text in the search bar, with a maximum of 1000 words per search.
- You can also check your content by uploading your documents using the browse button.
- It provides paraphrasing and grammar checking tools as well.
- Apart from removing plagiarism online, you can also compare the copied content with the source content simultaneously.

Unit VI: DATABASES AND RESEARCH METRICS(7Hrs.)

Databases (4 Hrs): Indexing databases, Citation databases: Web of Science, Scopus, etc.

Research Metrics (3 Hrs.): Impact Factor of journal as per Journal Citations Report, SNIP, SJR, IPP, Cite Score - Metrics: h-index, g index, i10 Index, altmetrics.

Citation databases :

Citation databases compile the citations in the reference lists (bibliographies) of scholarly publications. Citation database records also include bibliographic content that identify a publication: article title, journal name, author, abstract, etc.

Citation databases enable you to find newer papers that reference a paper or author you already know about. You might want to do this in order to:

- find more papers on a topic
- trace how an idea has been confirmed, applied, extended or corrected in later publications
- see which other researchers are citing your work or the work of your labmates
- find citation numbers and metrics to report on job or grant applications, evaluations, etc.

Three major databases allow interdisciplinary citation searching:

1. Web of Science (WoS)

2. SciVerse Scopus

3. Google Scholar.

Some other databases, such as SciFinder Scholar (chemistry), PsycInfo and PubMed, allow citation searching of smaller sets of journals and/or journals focused on specific disciplines.

- WoS provides complete citation data back to 1900, making it the most accurate for identifying core or classic articles published before 1996.
- The Journal Impact Factor has been used as a benchmark in the biomedical sciences for several decades. Although research benchmarks are evolving, It is likely that most research scientists will be asked at some point to report the Journal Impact Factor of the journals in which they publish.

The concepts taught about citation searching and analysis in this tutorial are applicable to all citation databases. However, since the databases vary in what they cover, search features and

citation analysis tools, the best database to choose depends on your personal preferences and your needs.

Citation databases compile the **citations** in the reference lists (bibliographies) of scholarly publications. **Citation database** records also include bibliographic content that identify a publication: article title, journal name, author, abstract, etc

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- find citation numbers and metrics to report on job or grant applications, evaluations, etc.

The different databases are

1.SciFinder Scholar (chemistry)

2.PsycInfo

3.Pubmed

Academic journal articles are only as impactful as they are discoverable, and online discovery hinges almost entirely on one thing — *indexing*. Without proper indexing by discovery services, researchers will be hard-pressed to find even the most groundbreaking scholarly articles.

From general search engines to discipline-specific databases and aggregators, there are numerous indexing options that journals can pursue, all with different benefits. Each index a journal

1. General search engines

Another benefit of search-engine indexing is that any journal can be added to a search engine index regardless of its publication history, citation count, or other time-bound specifications academic databases may require. Since journals can be added to search engines right away, they are great indexing starting points.

There are two layers of search engine indexing to consider to make your journals more discoverable:

1. Being indexed by general search engines like Google and Bing
2. Being included in mainstream scholarly search engines, the big two being Google Scholar and Microsoft Academic

2. Scholarly search engines

3. General and discipline-specific scholarly indexing databases

- Ulrichsweb: A general database for periodicals across disciplines.
- Directory of Open Access Journals (DOAJ): A community-curated online directory of peer-reviewed open access journals (we compiled a complete guide to DOAJ indexing [here](#)).
- Scopus: The largest abstract and citation database of peer-reviewed literature.
- Web of Science: One of the largest global citation databases (we compiled a complete guide to WoS indexing [here](#)).
- Academic Search (EBSCO): A full-text coverage database of scholarly journal, magazine, and newspaper articles.
- Some important criteria for the Journals are
 - International Standard Serial Number (ISSN)
 - Digital Object Identifiers for all articles (DOIs)
 - Editorial board page with names and titles
 - Clearly stated peer review policy
 - Established publishing schedule
 - Established copyright policy
 - At least basic article-level metadata

The Indexed Journal may include requirement such as follows

- **Publication scope:** While many indexes accept journals in all disciplines or journals within a broad set of disciplinary areas, such as the humanities and social sciences, some indexes only accept journals that publish within a particular subject area(s).
- **Minimum publication history length:** For example, MEDLINE only accepts applications from organizations that have been publishing scholarly content for a minimum of two years.
- **A certain level of publishing professionalization:** For example, some indexes look at the readability of published articles and production quality.
- **Geographic diversity:** Some indexes look to see that journals have geographically diverse editorial boards and authors.
- **Adequate citations:** Some indexes will not accept journals unless they meet a certain citation-level threshold, to demonstrate impact.

Web of science :

Web of Science is described as a unifying research tool which enables the user to acquire, analyze, and disseminate database information in a timely manner. This is accomplished because of the creation of a common vocabulary, called [ontology](#), for varied search terms and varied data. Moreover, search terms generate related information across categories.

Acceptable content for Web of Science is determined by an evaluation and selection process based on the following criteria: impact, influence, timeliness, [peer review](#), and geographic representation.^[7]

Web of Science employs various search and analysis capabilities. First, citation indexing is employed, which is enhanced by the capability to search for results across disciplines. The influence, impact, history, and [methodology](#) of an idea can be followed from its first instance, notice, or referral to the present day. This technology points to a deficiency with the [keyword](#)-only method of searching.

Second, subtle trends and patterns relevant to the literature or research of interest, become apparent. Broad trends indicate significant topics of the day, as well as the history relevant to both the work at hand, and particular areas of study.

Scopus :

Scopus is Elsevier's abstract and citation database launched in 2004. Scopus covers nearly 36,377 titles (22,794 active titles and 13,583 inactive titles) from approximately 11,678 publishers, of which 34,346 are peer-reviewed journals in top-level subject fields: life sciences, social sciences, physical sciences and health sciences. It covers three types of sources: **book series, journals, and trade journals**. All journals covered in the Scopus database, regardless of who they are published under, are reviewed each year to ensure high quality standards are maintained. Searches in Scopus also incorporate searches of patent databases.^[1] Scopus gives four types of quality measure for each title; those are *h*-Index, CiteScore, SJR (SCImago Journal Rank) and SNIP (Source Normalized Impact per Paper).

Research metrics :

Research metrics are the fundamental tools used across the publishing industry to measure performance, both at journal- and author-level. ... Now there are a range of different **research metrics** available. This “basket of **metrics**” is growing every day, from the traditional Impact Factor to Altmetrics, *h*-index, and beyond.

Research metrics are the fundamental tools used across the publishing industry to measure performance, both at journal- and author-level. For a long time, the only tool for assessing journal performance was the Impact Factor – more on that in a moment. Now there are a range of different research metrics available. This “basket of metrics” is growing every day, from the traditional Impact Factor to Altmetrics, *h*-index, and beyond.

The different Research metrics available are

- a) **Impact Factor of journal as per Journal Citations Report**
- b) **SNIP**
- c) **SJR**
- d) **IPP**
- e) **Cite Score metrics: *h*-index, *g*-index, *i*10 Index, Altmetrics**

What is Impact Factor :

The **impact factor (IF)** is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited.

How Impact Factor is Calculated?

The calculation is based on a two-year period and involves dividing the number of times articles were cited by the number of articles that are citable.

Tools to Measure Journal Impact (Impact Factor)

- **Journal Citation Reports (more)**
- **SCImago Journal Rank (SJR) (more)**
- **SNIP (Source Normalized Impact per Paper)**

Journal Citation Report :

Journal Citation Reports provides ranking for journals in the areas of science, technology, and social sciences. For every journal covered, the following information is collected or calculated: Citation and article counts, Impact factor, Immediacy index, Cited half-life, citing half-life, Source data listing, Citing journal listing, Cited journal listing, Subject categories, Publisher information.

- Limited to the citation data of Journals indexed in Web of Science
- [Process to determine](#) journals included in the tool
- Indexes over 12,000 journals in arts, humanities, sciences, and social sciences

You can enter a journal title in the Search box under "Go to Journal Profile". Because impact factors mean little on their own, it's best to view the journal you are interested in comparison to the other journals in the same category. To determine the impact factor for a particular journal, select a JCR edition (Science and/ or Social Science), year, and Categories, found on the left of the screen. Click **Submit**. Scroll the list to find the journal you are interested in. The list can be resorted by **Journal time, Cites, Impact Factor, and Eigenfactor**.

Eigenfactor

Eigenfactor scores can be found in the above listed Journal Citation Reports or at eigenfactor.org. Journal Citation Reports or at eigenfactor.org. Eigenfactor scores are intended to give a measure of how likely a journal is to be used, and are thought to reflect how frequently an average researcher would access content from that journal.

Scopus (Elsevier)

The Scopus Journal Analyzer provides a view of journal performance, and includes three journal metrics - CiteScore, SJR (SCImago Journal Rank) and SNIP (Source Normalized Impact per Paper).

- Over 22,000 active journals from over 4,000 international publishers
- Process to determine journals included in the tools.

SCImago Journal Rank (SJR) (Elsevier)

“The SCImago Journal & Country Rank is a portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.).” Scopus contains more than 15,000 journals from over 4,000 international publishers as well as over 1000 open access journals. SCImago's "evaluation of scholarly journals is to assign weights to bibliographic citations based on the importance of the journals that issued them, so that citations issued by more important journals will be more valuable than those issued by less important ones." (SJR indicator).

SNIP (Source Normalized Impact per Paper)

Source Normalized Impact per Paper (SNIP) measures contextual citation impact by weighting citations based on the total number of citations in a subject field. The impact of a single citation is given higher value in subject areas where citations are less likely, and vice versa. Unlike the well-known journal impact factor, SNIP corrects for differences in citation practices between scientific fields, thereby allowing for more accurate between-field comparisons of citation impact. CWTS Journal Indicators also provides stability intervals that indicate the reliability of the SNIP value of a journal.

CWTS Journal Indicators currently provides four indicators:

- P. The number of publications of a source in the past three years.
- IPP. The impact per publication, calculated as the number of citations given in the present year to publications in the past three years divided by the total number of publications in the past three years. IPP is fairly similar to the well-known journal impact factor. Like the journal impact factor, IPP does not correct for differences in citation practices between scientific fields. IPP was previously known as RIP (raw impact per publication).
- SNIP. The source normalized impact per publication, calculated as the number of citations given in the present year to publications in the past three years divided by the total number of publications in the past three years. The difference with IPP is that in the case of SNIP citations are normalized in order to correct for differences in citation practices between scientific fields. Essentially, the longer the reference list of a citing publication, the lower the value of a citation originating from that publication. A detailed explanation is offered in our scientific paper.
- % self cit. The percentage of self citations of a source, calculated as the percentage of all citations given in the present year to publications in the past three years that originate from the source itself

IPP - Impact Per Publication: Also known as RIP (raw impact per publication), the IPP is used to calculate SNIP. IPP is a number of current-year citations to papers from the previous 3 years, divided by the total number of papers in those 3 previous years.

Cite Score – Metrics

1.h-index :

The **h-index** is defined as the maximum value of **h** such that the given author/journal has published **h** papers that have each been cited at least **h** times. The **index** is designed to improve upon simpler measures such as the total number of citations or publications. “A scientist has index h if h of his or her N_p papers have at least h citations each and the other $(N_p - h)$ papers have $\leq h$ citations each.”

How Calculated: Number of papers (h) that have received at least h citations.

As an example, an h index of 10 means that among all publications by one author, 10 of these publications have received at least 10 citations each.

Hirsch argues that the h index is preferable to other single-number criteria, such as the total number of papers, the total number of citations and citations per paper.

2.g index:

The **g-index** gives more weight to highly-cited articles. To calculate the **g-index**: "[Given a set of articles] ranked in decreasing order of the number of citations that they received, the **g-index** is the (unique) largest number such that the top g articles received (together) at least g^2 citations." G-Index is calculated this way: "[Given a set of articles] ranked in decreasing order of the number of citations that they received, the G-Index is the (unique) largest number such that the top g articles received (together) at least g^2 citations."

Advantages of the G-Index:

- Accounts for the performance of author's top articles
- Helps to make more apparent the difference between authors' respective impacts. The inflated values of the G-Index help to give credit to lowly-cited or non-cited papers while giving credit for highly-cited papers.

Disadvantages of the G-Index:

- Introduced in 2006. and debate continues whether G-Index is superior to H-Index. Might not be as widely accepted as H-Index.

3. i10 Index :

i10-Index = the number of publications with at least 10 citations. This very simple measure is only used by Google Scholar, and is another way to help gauge the productivity of a scholar. Advantages of **i10-Index**. Very simple and straightforward to calculate. i10-Index = the number of publications with at least 10 citations.

This very simple measure is only used by Google Scholar, and is another way to help gauge the productivity of a scholar.

Advantages of i10-Index

- Very simple and straightforward to calculate
- My Citations in Google Scholar is free and easy to use

Disadvantages of i10-Index

- Used only in Google Scholar

Here is a screenshot of a Google Scholar My Citations page for Charles Darwin (you can see the i10-Index highlighted in the small table):

4.Altmetrics:

Altmetrics are metrics and qualitative data that are complementary to traditional, citation-based metrics. ... Sourced from the Web, **altmetrics** can tell you a lot about how often journal articles and other scholarly outputs like datasets are used.