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ABOUT US

INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANLAYSIS ISSN

2582-6433 is an Online Journal is Monthly, Peer Review, Academic Journal, Published online, that seeks to provide an interactive platform for the publication of Short Articles, Long Articles, Book Review, Case Comments, Research Papers, Essay in the field of Law & Multidisciplinary issue. Our aim is to upgrade the level of interaction and discourse about contemporary issues of law. We are eager to become a highly cited academic publication, through quality contributions from students, academics, professionals from the industry, the bar and the bench. INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANALYSIS ISSN 2582-6433 welcomes contributions from all legal branches, as long as the work is original, unpublished and is in consonance with the submission guidelines.

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NEXUS BETWEEN SCIENCE TECHNOLOGY AND LAW

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INTRODUCTION AND MEANING

The law also plays an essential role in the development of innovation and promoting technologies through legal doctrines and mechanisms. The most important aspect relates to intellectual property, by which the law gives the investors and creators a time-limited exclusive right to commercially exploit the output of the work of their workers. The main objective of protecting intellectual property is to promote innovation, by giving researchers, and authors economic incentives which will aid them to create new inventions and works. New technologies cause fundamental challenges to traditional doctrines.

For example, digital information might not be adequately protected by old traditional laws and it requires the copyright owner to bring a lawsuit alleging infringement. Because unlimited copies can be made by simply uploading material on the internet and thereafter, legislatures and courts have extended more copyright protection for digital data.

There also exist challenges in adapting patent law to genetic discoveries. Patenting genes have raised numerous scientific, legal, ethical, and practical complexities that established patent law is not equipped to address. Such as the traditional distinction between non-patentable products and patentable inventions and discoveries has been dimmed by technology.[1]

• SCIENCE - TECHNOLOGY AND RELATIONSHIP WITH LAW

Law and science have a complicated relationship. Science is the systematic approach that builds and organizes knowledge in the form of testable explanations and predictions about the universe. Law, on the other hand, refers to the system of rules which have been laid down by the social institutions to regulate the actions of members and it may enforce such behaviour by the imposition of penalties. However, with the growth of scientific and technological advances, law, and science, the two disciplines became interdependent on each other. The legislature of various nations has laid down numerous laws to manage the impacts of science and technology

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on society. For example, in the era of the internet, the legislature has laid down laws and provisions which deal with cybercrimes. Law seeks to curb the impacts of science and technology which revolve around aspects such as risks, benefits, and ethical implications.[2]

[1] https://blog.ipleaders.in/relationship-law-science-technology-modern-society/#Benefits_of_new_technologies
[2] https://ijtr.nic.in/articles/art42.pdf

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The judicial system also seeks to provide remedies to the aggrieved party that has been wronged due to the harmful implications of scientific and technological developments. Science on the flip side has aided the legal system with modern technologies such as polygraph tests, collection of evidence in a scientific manner, electronic recordings which can be used as evidence before the court, etc. Science also helps in the court proceedings with the admission of evidence, autopsy reports, etc. Therefore science and law are codependent on each other despite being two different disciplines in modern society with the advances in science and technology.

- **NEXUS BETWEEN SCIENCE TECHNOLOGY AND LAW**

Science and technology have substantive as well as the procedural effect on the law. On the substantive side, new scientific evidence and methodology can change the course of legal claims and their outcomes, i.e. forensic science has opened new avenues in criminal law while creating a myriad of legal, ethical, and social issues. And on the procedural aspect of the law, it lays down how DNA samples should be collected and stored, how genetic information may be used, when are convicted criminals allowed to reopen their cases, etc.

In the early twenty-first century, digital evidence has improved the quality and availability of trial evidence while raising concerns about tampering and fabricating digital pieces of evidence. This led to a massive change in the law.[3]

Law affects science and technology, individuals who have been aggrieved by scientific misconduct tries to seek judicial remedies. Advocates have even served non-party subpoenas on scientists who are doing research potentially pertinent to the lawsuit. This exposes the scientists to intrusive searches and they often have to disclose before the court about their research activities. Legislature also subjects scientists to new legal requirements, for example when any scientific project is based on government funding then it is important to take required legal steps to ensure absolute protection of the scientists and the general public. In 2000, the United States Congress enacted the Data Quality Act which imposes a series of substantive and procedural requirements on scientific methodology. These developments indicate a trend of growing legal intrusion on science and technology.

[3] https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/science-technology- and-law

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- **PROBLEMS AND PERSPECTIVES BETWEEN LAW AND SCIENCE**

In modern society, science and technology are developing rapidly. One of the examples of such development is Moore's Law, which predicts that the number of transistors on microchips will double every two years. The law, on the contrary, is less dynamic in nature as it has to go through a technical statutory process in order to keep up with the scientific developments. Statutes can easily become outdated and case laws are also slow to adapt to the scientific and technological developments due to the binding effect of past precedents. Therefore, it results in the law being based on outdated scientific assumptions or fails to adapt to recent scientific and technological knowledge. It is essential for the law to adapt to advancing science and technology and incorporate adaptive legal regimes to keep up with science and technology.[4]

The law is the principal societal institution for controlling these risks through the legislature and the judiciary. Risk regulation involves two key aspects of scientific and legal interaction. Firstly, the part played by law in regulating risks from science and technology and secondly, the use of science by law to assess risk from new and existing technologies. The parliament of different nations tries to reduce risk before it imposes a greater threat to society. Most industrialized nations have comprehensive statutory or regulatory programmes which try to reduce potential risks from technologies such as industrial chemicals, pesticides, natural resource extraction, pharmaceutical, etc. These legislations predict potential harms and attempts to curb that.

In a leading case of Daubert v. Merrell Dow Pharmaceuticals, Inc., it was stated by the court that federal courts are required to perform a gatekeeping function to affirm that scientific testimony is relevant and reliable before it can be admitted. This judgment has involved judges being proactive and knowledgeable in screening prospective scientific testimony and has also stimulated scientific organizations to seek and educate judges and also provide experts to aid in the proceedings which involve science and technology.

CLINICAL TRIALS AND THE NEED PROFESSIONAL RESPONSIBILITIES AND ETHICAL PRINCIPLES

Ethics in clinical research focuses largely on identifying and implementing the acceptable conditions for exposure of some individuals to risks and burdens for the benefit of society at

[4] https://blog.ipleaders.in/relationship-law-science-technology-modern-society/

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large. Ethical guidelines for clinical research were formulated only after discovery of inhumane behaviour with participants during research experiments.[5] The Nuremberg Code was the first international code laying ethical principles for clinical research. With increasing research all over, World Health Organization formulated guidelines in the form of Declaration of Helsinki in 1964. The Indian Council of Medical Research has laid down the 'Ethical Guidelines for Biomedical Research on Human Subjects' in the year 2000 which were revised in 2006. It gives twelve general principles to be followed by all biomedical researchers working in the country. The Ethics Committee stands as the bridge between the researcher and the ethical guidelines of the country. The basic responsibility of the Ethics Committee is to ensure an independent, competent and timely review of all ethical aspects of the project proposals received in order to safeguard the dignity, rights, safety and well-being of all actual or potentialresearch participants. A well-documented informed consent process is the hallmark of any ethical research work. Informed consent respects individual's autonomy, to participate or not to participate in research.

The Clinical trials are an arrangement of practices performed to confirm and guarantee the security of a new drug molecule. Compliant with an amendment to the Indian Patents Act 1970 in January 2005, medications can be made by following both the item and process protecting. This has encouraged the rise of India as a favoured and looked for after goal to direct clinical trials. The accessibility of exceptionally prepared doctors, attendants and specialized workforce; world class restorative offices; great IT foundation and a strong Intellectual Property Rights administration in India have additionally helped the reason. Rule 122 DAA of Drugs & Cosmetics Rules, 1945 ("D & C Rules")[6] defines clinical trials as a "systematic study of new drug(s) in human subject(s) to generate data for discovering and/or verifying the clinical, pharmacological (including pharmacodynamics and pharmacokinetic) and/or adverse effects with the objective of determining safety and / or efficacy of the new drug".

The Drugs Controller General of India (DCGI) is in charge of administrative endorsements of clinical trials in India. The DCGI office relies upon outer specialists and other government organizations for exhortation. Extra consents are required for the fare of blood tests to remote focal research centers. The ICMR has a Central Ethics Committee on Human Research (CECHR). This board of trustees reviews the working of this Institutional Ethics

[5] https://pubmed.ncbi.nlm.nih.gov/22303053/
[6] https://cdsco.gov.in/opencms/opencms/en/Acts-and-rules/Drugs-Rules/

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Committee (IEC). The as of late revised Schedule Y of Drugs and Cosmetic Rules arrange the creation of the IEC according to the ICMR rules. The DCGI's office in a joint effort with WHO ICMR and many submitted look into experts, has been directing preparing programs for individuals from the Ethics Committees the nation over.

Clinical trials in India are controlled by Schedule Y of the Drugs and Cosmetics Rules. The Rules are authorized by the workplace of the DCGI who is likewise in charge of observing every single clinical trial submitted to that office for endorsement. For new medications being produced in India clinical trials must be directed in India from stage.[7] For advertising endorsement of medications effectively affirmed in different nations, a stage 3 clinical trial is required on around 100 patients in at least three focuses, with a specific end goal to set up the medication's effect on the Indian ethnic populace. An application for another sign of an effectively endorsed medicate is dealt with as an application for another medication's endorsement. New definitions of affirmed medications might be subjected to bioequivalence thinks about. Till January 2005, clinical trials of new medications being created outside India were allowed just with a "stage slack": a stage 2 trial could be led in India simply after stage 3 trials were finished somewhere else. Stage 1 trials of outside medications were not permitted, except for medications of exceptional pertinence to India. This proviso empowered, for instance, stage 1 trials of HIV immunizations in India. Truth be told, universal multi-centre trials have been directed in India since the mid-1990s. As of January 2005, an alteration of Schedule Y of the Drugs and Cosmetics Rules got rid of the stage slack in worldwide clinical trials directed by remote patrons. There are never again any confinements on "simultaneous stage" clinical trials in India. Stage 2 and stage 3 trials of medications found abroad may now be led in India in a similar stage and in the meantime as they are directed in different parts of the world. The trial support must get endorsement from the DCGI before beginning a trial. For this endorsement, the support must submit information from pharmacokinetic and creature thinks about furthermore, past stage trials; data on the administrative status of the medication in different nations, the trial convention, specialist's leaflets and educated assent reports. Trials can't be begun without leeway from the nearby morals audit board of trustees (EC) at each site.

[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4215498/

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IMPACT OF SCIENCE AND TECHNOLOGY

C. G. Weeramantry, in his book, states that the spectacular advances in science and technology that have continued unabated have emphasized the urgency of the problems. He further states that, the urgency grows on two fronts - the scientific and the practical - and in combination these two factors which produce an exponential growth in the urgency and the magnitude of the problem. [8]He says, the world for the betterment of the human condition can no longer ignore the problem since every step forward in science and technology, the power of these forces to affect human society for better or for worse has increased. With every passing year that power will increase and the need to use it in the interest of human rights will grow correspondingly more urgent. He further elaborates that the power of science and technology keeps growing, and the problems we are addressing will worsen. He illustrate it with an example, he says, given that the right to food and a pure environment is a recognized human right, the problems facing us today at the beginning of the 1990s are far more acute than they were in the early 1980s.

Thus it becomes very important to peruse the role of science and technology and its impact on human rights. Science and technology is no longer the subject of a complacent assumption that they are synonymous with progress, freedom, and the betterment of the human condition. Consequently, the decisions associated with their adoption are no longer seen as neutral and value-free. Rather, they generate strong support or opposition, provoke emotional reactions, and, indeed, become political issues of considerable importance.

The discussions surrounding these decisions raise sharply such issues as whether science and technology determine the course of their own development or whether society can and should control them. Human rights issues become inextricably interlinked with decisions regarding suitable scientific and technological models for a given society.

Conclusion

Law and science are codependent on each other despite being different disciplines. Law interacts with science and technology on different levels and diverse ways. These interactions proliferate in the future with advancing technologies that present risks, benefits, and ethical implications on society. The field of law, science, and technology attempt to bridge the gap between these two fields of study and also tries to tackle the challenges faced by law, science,

[8] https://blog.se.com/sustainability/2023/03/15/the-impact-of-science-and-technology-on-sustainable-future/

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and technology. It also seeks to provide a systematic treatment of the actions and problems that would eventually help these subjects evolve in parallel and at pace with subject matter.

Law plays an essential part in the regulation of science and technology and concerning the ethical consequences of scientific research along with modern technologies. This field of law, science, and technology attempts to study systematically the diverse ways in which law interacts with science and technology. It has been defined as "the discipline that deals with how our legal system can and must adjust to accommodate the problems created by the ever more urgent and ubiquitous impact of technology on society."