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EDITORIAL

E-JAIRIPA (E-Journal of Academic Innovation and Research in Intellectual Property Assets) is a Peer Reviewed E-Journal of the Centre for Innovation Research and Facilitation in Intellectual Property for Humanity and Development (CIRF –in-IPHD) of Chanakya National Law University the JAIRIPA is a half yearly journal of Academic Innovation and Research on the issues related to copyright, Patents, Trade Marks, Geographical Indications, Plant Varieties and Farmer's Rights, Bio Diversity, Layout design and integratedcircuits, Industrial Design, Traditional Knowledge, on current Academic issues.It is a half-yearly e- Journal, Vol. III, Issue 02 (July-Dec, 2022). This E-Journal shall have open access to all the concern world-wide for Common Good. The ISSN will be obtained later as per Rule.

This journal welcomes publications from law students, professionals, academicians for academic research and study in the field of Intellectual property and the assets produced by it. Academic research is the medium of fostering understanding of the latest contemporary developments in the field.

In today's world where the generation of data in the online world is so abundant it becomes essential to protect the originality of the content and grant due credits to the creator of that content which can only be possible through Intellectual Property Rights. The main goal behind the publication of this journal is to promote creativity and innovation among people. Human minds have been the source of intellectual property since years but now emerges an urgent need for a designated protection of work created on digital platforms like Metaverse or Artificial Intelligence.

Role of AI in current times in this horizon of law has gained highlight and the development of Meta verse and non- fungible tokens. Many Brands have created their own NFTs which they aim to protect through copyright law but there has not been any enactment of a provision keeping that in notice and thus the issues for consideration require discussion and deliberation. This edition of E-JAIRIPA has papers, articles and case commentaries pertaining to such contemporary developments in this field.

Issues of safeguarding Trade secrets for industries, design infringement, lack of protection to IP Assets under the Information Technology Act, and compulsory licensing of drugs have been the highlights of this issue. The challenge of deceptive trademark within the same industry has been as cause of concern for businesses which has been analysed under the case commentary of SUBWAY V. SUBVERB. An intersection of Synthetic biology with patent and trade secret has elaborately been presented.

All the papers have been peer reviewed, and similarities checked. The editors and reviewers have tried their best to allow the best possible papers before the readers. The comments, criticism, and advice of the readers are most welcome for further improvement. Hence this half- yearly E-Journal (JAIRIPA) is hereby submitted with all humility before the readers.

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SUBWAY v. SUBERB: NO EXCLUSIVITY OVER *PUBLICI JURIS* OR LAYOUT OF RESTAURANTS

-*Manvee Sharma*[1]

ABSTRACT

Often, a lot of confusion revolves around whether a trademark is deceptively similar to another or not. Tests like existence of an element of confusion over the names of the two marks or a strong resemblance between the two that is enough to cause confusion have been laid own to determine deceptive similarity between marks. Nonetheless, the ultimate judge of similarity are the consumers who might be misled into comparing the two marks and thereby, differentiating between the two. One such case is the SUBWAY V. SUBERB wherein the prefix 'SUB' is common to both the trademarks and the plaintiff claims it be a case of trademark infringement. This case is also important because in this case, the layout, logo, signage, menu cards, artworks etc. were also similar therefore, the question before the court was that if monopoly over layouts, staff uniform, menu cards etc., could be claimed?

Keywords: Intellectual Property Rights; Deceptive Similarity; Trademark Infringement; Layout; Monopoly

Introduction: Deceptive Trademarks

Intellectual Property Rights (hereinafter, IPR) are the rights which protect the creation of the intellect. They deal with intangible and incorporeal rights and protect the reasoning, knowledge, and intellect of a person.[2] There are different types of IPRs like Trademark, Copyrights, Designs, Patents, Geographical Indications etc., Unlike other IPRs, trademark can be any word, symbol, logo, design, mark that distinguishes the product of an entity from the other entity and help the consumers identify the product of their choice and prevent them from getting misguided.

Trade Marks Act defines "Deceptively Similar" to be any mark that so nearly resembles the other mark that

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[2] *What are Intellectual Property Rights?,* World Trade Organization. .

it is likely to cause confusion in the minds of the buyer and hence, would be misleading.[3] For instance, in *Mahendra and Mahendra paper mills ltd. v. Mahindra and Mahindra Ltd.*[4], it was held that there was striking resemblance between the two marks as they were visually and phonetically similar to each other.

A. Facts of the case

Subway IP LLC (hereinafter, "SIP"), the plaintiff, is a US Company, that runs a well-known worldwide chain of restaurants under the name 'SUBWAY,' with the brand being trademarked with well-known logos. The plaintiff owns registrations in India not only for the 'SUBWAY' word and device marks, but also for 'VEGGIE DELITE' and 'SUBWAY CLUB', which are the names assigned by the plaintiff to its vegetable sandwich and club sandwich respectively.

The Defendant has not challenged the Plaintiff's proprietorship of the registered trademarks. However, the Plaintiff alleges that the following acts of the Defendant infringe their intellectual property rights:

1. Primarily, the use of the logo and brand name "Suberb" under which two of the Defendant's restaurants operate in Delhi and that the green and yellow colour scheme of the logo is identical to Plaintiff's logo "Subway".
2. Secondly, according to the plaintiff, the use of the brands SUB ON A CLUB and VEGGIE DELICIOUS, are deceptively similar to their registered SUBWAY CLUB and VEGGIE DELITE marks.
3. Thirdly, usage of substantially similar or identical, outlet, menu cards, décor, signage, staff uniforms, and paper napkins.
4. Fourthly, usage of wall art and photographs by the defendants in their outlets which are similar to the ones used in the plaintiff's outlets.
5. Fifthly, use of techniques, recipes, service ingredients, food preparation procedures, placement of service counters, ingredients, and formulae in the restaurants are identical to the plaintiff's outlet.
6. Sixthly, defendant's website has verbatim reproduction of the recitals which are on the plaintiff's website, that too with similar layout of headings etc.

However, to assuage the grievances of the Plaintiff regarding intellectual property rights infringement, the Defendants offered to make certain changes in their lay out/logo, etc. Precisely, they offered to

(i) Change the colour combination of the signage used outside the restaurants to an amalgamation of white, red, pink, or purple.

(ii) Change the logo's colour (which is currently green and yellow) to a combination of white, red, pink, or purple.

[3] Section 2(1)(h), Trade Marks Act, 1999.
[4] (2002) 2 SCC 147.

(iii) Agreed on not using green or yellow either on the S logo or the signage.

(iv) Change the names of the sandwiches – "SUB ON A CLUB" and "VEGGIE DELICIOUS" to "TORTA CLUB" and "VEG LOADED REGULAR."

B. Sections invoked

1. Section 17(2) of the Trade Marks Act which prohibits -

a) Claim of exclusivity over dissection of a trade mark. (i.e., anti-dissection rule)

b) Claim of infringement over any matter which is of a non-distinctive nature. (i.e., publici juris)

2. Section 27 Of Trade Marks Act (Passing off)

3. Section 29 of the Trade Marks Act (Infringement can only be of the registered trademarks).

4. Section 56 and 57 of the Evidence Act (Facts of which Court must take judicial notice)

C. Issues raised

1. Whether after the modifications undertaken by the Defendants, can they still be held liable for infringing the Plaintiff's registered mark or passing off their goods and services as those of the Plaintiff?

2.Is the Plaintiff entitled to Injunction under Order XXXIX Rules 1 and 2 of the CPC?

D. Arguments by the appellants

The Plaintiff is not satisfied with the changes undertaken by the Defendant. They lay emphasis on the fact that the infringement committed by the Defendant prior to the modifications were blatant and obvious. That the Defendant's had a mala fide intent to copyright on the plaintiff's goodwill. They further submitted that the marks SUBERB & SUBWAY are deceptively similar to each other and even if the colour combination is changed, they would continue to remain phonetically similar to each other thus, leading to confusion among the people.

E. Arguments by the defendants

According to the defendants, after the changes that they have volunteered to make, the allegation of passing off and infringement, levied by the plaintiff, do not sustain. Further, they have only two outlets – at Delhi and at Gurgaon, and these changes have already been executed at both the outlets. In fact, the defendants have even removed the images and photographs, on the walls, and modified the wall décor of their outlets, to which the Plaintiff objected. They have also changed the staff uniforms and menu card so as not to resemble those of the plaintiff. They believe that due to the change in the colour scheme, the 'S' sign of the defendants no longer resembles that of the plaintiff. Their major contention is that the Plaintiff cannot claim exclusivity over the word 'SUB' as it is a generic word for the products it is used.

F. Precedent cited

1. AutoZone, Inc. v. Tandy Corporation [5]

This case laid down two tests:

1.1. The Rule of Anti-Dissection:

It laid down the Anti-dissection rule which mandates that the Courts while dealing with cases of trademark infringement involving composite marks, must consider the conflicting composite trademarks in entirety by looking at them as a whole rather than dissecting them or truncating them into their component parts and make comparison with the corresponding parts of rival trademark to determine the likelihood of confusion. The reason for the said principle is that the commercial impression of a composite trademark on the average reasonably prudent buyer is created by the mark as a whole, not by its component parts. The point is that the two marks should not be scrutinized with a microscope to spot the differences as this is not the way in which an average purchaser views the marks. Therefore, the court should not indulge in "technical gymnastics" in an endeavor to spot minor differences between conflicting marks.

1.2. The Identification of 'Dominant Mark':

While a trademark has to be considered in its entirety, still it is permissible to accord more or less importance or 'dominance' to a particular element or portion of a mark in case of composite marks. Thus, the element that enjoys greater prominence vis-à-vis other elements, are termed as '*dominant mark.'* They are significant because they garner attraction and consumers are more likely to remember them for identification of the product. Usually, a dominant mark is one which has carried more weight or has the greater strength.

2.Onkar Nath v. Delhi Administration [6]

It held that the purpose of Section 57 is to provide that the Court *shall* take judicial notice of certain facts rather than shutting the judicial eye to the existence of such facts is in a sense an insult to common sense and would turn judicial process to a wasteful trial. Therefore, Courts cannot disregard that 'Subs' or Submarine sandwiches, are a part of common knowledge and therefore, can be considered under Section 56 and 57 of the Evidence Act, 1872.

3.J.R. Kapoor v. Micronlx India [7]

[5] 174 F. Supp. 2d 718 (M.D. Tenn. 2001)
[6] (1977) 2 SCC 611.
[7] 1994 Supp (3) SCC 215.

This case dealt with two competing marks – 'MICROTEL' and 'MICRONIX', of which prefix 'Micro' was found to be descriptive of the micro technology used for production of many electronic goods which daily come to the market and for which, no one can claim monopoly. If a product is produced with the use of micro-chip technology, then, using the word 'micro' as prefix to his mark can be justified. Thus, the Apex Court held that no exclusivity can be claimed over the first syllable 'Micro'. and concerning the suffixes 'Tel' and 'Nix', they are evidently dissimilar and no infringement can be alleged.

4. F. Hoffman La Roche & Co. Ltd. v. Geoffrey Manners & Co. Pvt Ltd.[8]

In this case, the marks 'DROPVIT' and 'PROTOVIT' were held by the Apex Court to be dissimilar. The Court held that to determine of they are deceptively similar, the two words must be taken as a whole. That 'Vit' is a well-known abbreviation to denote vitamin preparations and therefore, its usage in the two marks is common and descriptive to the trade. With regards to the uncommon element, it is impractical that one will be mistaken or confused for the letters- 'T' and 'P'. They are so reasonably dissimilar that there is no probability of confusion between them.

5. Astrazeneca UK Ltd. v. Orchid Chemicals & Pharmaceuticals Ltd. [9]

Hereby, the suffix 'Mero', was common in the two competing marks – 'MERONEM' and 'MEROMER', that were used for pharmaceutical preparations containing Meropenem. The Court held that the acronym for 'Meropenem' was *publici juris* and descriptive. That both the parties are marketing the same molecule 'Meropenem' so neither of them can raise any claim for exclusive use of the word 'Meropenem'. For the suffixes used, it is obvious that the two are not phonetically or otherwise similar. Moreover, when the two marks are taken as a whole, they are not visually or phonetically similar in any way.

G. Analysis

Hereby, the Court is to examine whether the Defendant's mark as a whole infringes the Plaintiff's registered trademarks. If they do not, then if any of the registered trademarks of the Plaintiff, that constitutes the *dominant part* thereof, is infringed by the defendant's mark.

Prima facie, 'SUBERB' and 'SUBWAY' are not phonetically similar to each other, even though both are words of two syllables, of which the first syllable 'SUB' is common. 'SUB', when used in context of sandwiches, is a well-known abbreviation for 'Submarine', that represents a well-known variety of long-

[8] (1969) 2 SCC 716.
[9] (2007) 34 PTC 469 (DB).

bodied sandwiches, generally 6-9 inches long. 'Submarine Sandwich', in fact, has its own Wikipedia page, that reads it as a type of American hold or cold sandwich made from a cylindrical bread roll split lengthwise and filled with vegetables, meats, condiments and vegetables.

No exclusivity can be claimed over 'SUB', which is the first part the registered SUBWAY mark as it is *publici juris,* which means by virtue of its usage it has gained commonality when used in context of eateries. Further, with regards to the second part, it is quite obvious that there is no similarity at all between 'ERB' and 'WAY.'

H. Held

1. Re: Defendant's mark "SUBERB" is not deceptively similar to Plaintiff's "SUBWAY"

It was held that 'SUBERB' and 'SUBWAY' are not deceptively similar, when used in the context of eateries serving submarine sandwiches, as 'SUB' is common to trade and is therefore, *publici juris.* With regards to the suffix – 'ERB' and 'WAY', neither of them are visually or phonetically similar. In fact, after the modifications undertaken by the defendant, the appearance of the two marks cannot be said to be deceptively similar, as Defendant has agreed on not using white and red colour combination. In fact, their appearance and font are easily distinguishable from each other.

The court agreed to the Defendant's argument that 'SUBWAY' is so well known that hardly any person who wishes to partake from a SUBWAY outlet would walk into the defendant's two outlets and partake from there. This means that a person who wishes to have food from SUBWAY would know where he wants to go; and, it would be unrealistic to envisage him walking into a 'SUBERB' outlet.

2. Re: Plaintiff's marks "VEGGIE DELITE" and "SUBWAY CLUB"

After the subsequent modification of the defendant's marks to "VEG LOADED REGULAR" and "TORTA CLUB", the competing marks cannot be said to be similar, let alone deceptively similar to "VEGGIE DELIGHT" and "SUBWAY CLUB". The only common feature can be the prefix "VEG", which is obviously common to trade and *publici juris* in the context of vegetarian sandwiches and the word "CLUB", which is again *publici juris,* when used in context of club sandwiches. Thus, the modifications undertaken by the defendants sets at rest any allegation of infringement which could be levied by the plaintiff.

3. Re: Passing Off

Passing off can be defined as encasing the goodwill of someone else by passing off his goods or services as yours and thus, causing him reputational and monetary losses. In order to establish, passing off, in the instant case, the plaintiff would have to show that an individual of average intelligence is likely to confuse the goods and services of the defendants as those of the Plaintiff, owing to the manner in which the Defendant uses his marks and other characteristic features.

Any such possibility stands foreclosed and there is no likelihood for a person of average intelligence to partake food from the Defendant's outlets who instead desires to take food from one of the "SUBWAY" outlets.

4. Re: Similarity in Layouts, staff uniform, counters and menu cards of the two restaurants:

On this, the court held that no person can claim monopoly over these aspects. Thus, even if the layout, décor, or appearance of the defendant's restaurant is identical to that of the Plaintiff, still it cannot justify an order of injunction by the Court. Therefore, no claim of exclusivity is available on these grounds in Indian law.

CONCLUSION

On the basis of the above findings, it can be concluded that Delhi High Court has given a remarkable judgement in the field of IPR. The reasoning of the judgment is very apt and there is no element of biasness in favour of a well-known trademark (SUBWAY). The Court has relied on the already decided judgements of the Apex Court while coming at the conclusion and has not gone astray. However, one of the contentions of the Defendants that the Court has even agreed to seems to be a little distorted; the fact that 'SUBWAY' is a well – known brand and if anybody wishes to partake from SUBWAY, he/she would hardly walk into the Defendant's outlets is absurd. If this is to be believed then, no instances of deceptive similarity would arise as most of the cases of deception occur against well-known trademarks and if it is expected from people to be cautious of the outlets they enter, then probably we are concomitantly promoting Passing off!

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CRITICAL NOTE ON THE INTERPLAY BETWEEN TRADEMARKS AND BIOLOGICAL SENSES

-Adya Joshi[10]

Abstract

The primary and fundamental objective of a trademark is the identification of the source or origin of a product. Through this identification, trademarks serve in assisting the consumer to make a suitable choice regarding any goods or services, as they indicate a particular quality, make and goodwill. Notably, the five senses are the gateway to all perception and knowledge, i.e. it is through sight, smell, sound, taste and touch that human beings create their memories. In this vein, there is a direction correlation between the biological senses and the primary use of trademarks, i.e. providing "memorability" or "recognizability" of a brand or trader. While traditionally, only the sense of sight was accommodated and recognized, in contemporary times, there has been a growing trend in both India and international jurisprudence towards recognition of "non-conventional" marks- such as those associated with "smell", "sound", "touch" and "taste". This dilution is reflected in international treaties such as the TRIPS and the Singapore Treaty, as well as in recent amendments to the Trademark Rules in India. Nonetheless, there are several conundrums and controversies in this regard, particularly while weighing these "non-traditional" marks against the age-old standards of "distinctiveness" and "graphical representation". Accordingly, this paper seeks to analyses both the legal and practical implications of a trademark jurisprudence centered around the 5 biological senses.

Keywords: Unconventional trademarks, non-traditional marks sound marks, smell marks, TRIPS, graphical representation

[10] Advocate, Supreme Court of India and Delhi High Court

Introduction

The primary and fundamental objective of a trademark, is the identification of the source or origin of a product.[11] Through this identification, trademarks serve in assisting the consumer to make a suitable choice regarding any goods or services, as they indicate a particular quality, make and goodwill.[12] Hence, trademarks communicate valuable knowledge to customers in order to enable them to distinguish products in a market and make their preferred choice. The interplay between the biological senses and trademark law is one of cardinal significance as the five senses are the gateway to all perception and knowledge. It is through *sight, smell, sound, taste* and *touch* that human beings create their memories, thereby linking the biological senses with the primary use of a mark, i.e. providing "memorability" or "recognizability" of a brand or trader.[13]

Nevertheless, traditionally, only the sense of sight was accommodated and recognized, due to the emphasis on *visual* or *graphical representation* for registration of a mark.[14] To illustrate, early international agreements such as the Paris Convention and the Madrid Treaty and Protocols, were largely concerned with regular or classical marks such as pictorial logos, and did not account for "unconventional" marks.[15] In this vein, the trend was to largely focus on visually *discernible* signs and symbols while granting trademark monopoly.

However, over the years the position has undergone significant development, with this focus on "sight" being largely diluted. For example, Article 15 of the TRIPS Agreement mandates that while the threshold for assigning a trademark is that the sign or symbol should be capable of distinguishing a product, States *may* additionally stipulate that the mark should be visually perceptible.[16] In essence, States have been granted the *option* to confer monopoly to marks not fulfilling this traditional criteria as well- thereby paving the way for the other senses to be included within the framework. Furthermore, taking one step forward, the Singapore Treaty has specifically recognised and endorsed "unconventional" and innovative marks such as sound marks.[17]

Hence, the contemporary international framework has created the opportunity for biological senses to be

[11] Sumat Prasad Jain v. Sheojanam Prasad, 1973 SCR (1)1050.
[12] Laxmikant Patel v. Chetanbhat Shah, 2002 (24) PTC 1 (SC).
[13] WIPO, INTRODUCTION TO TRADEMARK LAW & PRACTICE, 1993 (2ND ED.) 30.
[14] R. Carapeto, *A Reflection on the Introduction of Non-Traditional Marks,* WASEDA BULL. OF COMPARATIVE LAW, V.34 (2016).
[15] *See,* The Paris Convention for the Protection of Industrial Property, 1884; the Madrid Agreement Concerning International Registration of Marks, 1891.
[16] The Agreement on Trade-Related Aspects of Intellectual Property Rights, A.15.
[17] The Singapore Treaty on the Law of Trademarks, 2006.

fully accommodated in the trademark law. However, the actual practice in this regard has met several obstacles due to the practical constraints in allowing for marks that may not satisfy the element of graphical representation. In India for example, the Trademark Registry and courts have mitigated the statutory requirement in the Trademarks Act, 1999 in certain scenarios, and yet there are only a handful of marks that rely on the other senses that have actually been registered.[18] A similar scenario is prevalent in other jurisdictions as well, with trademarks such as smell marks or touch marks being permitted only in the rarest of cases.

In light of the above, this paper seeks critically analyses the interplay between contemporary trademark law and the 5 biological senses- **Sound, Smell, Taste, Touch** and **Sight.**

I. Sound

Trademarks that rely on the sense of sound, i.e. "sound marks", have emerged as one of the most popular forms of "unconventional" marks in recent years, with several nations having expressly accommodated them in their domestic frameworks through judicial decisions and otherwise.

To illustrate, while the European Union previously mandated visual *representation* for registration,[19] in the landmark verdict of *Shield Mark BV v. Joost Kist* it was held that this did not imply that only visually *perceptible* marks could be regarded as trademarks.[20] The ECJ held that marks such as sound marks were not precluded *per se* from the EU framework, so long as they fulfilled the requirement of graphical representation.[21] However, the court held that this representation of a mark must be in the form of definite images, lines or characters, with a specific exclusion of written descriptions as an onomatopoeia or or a mere sequence of musical notes.[22] In this manner, a lot of ambiguity was created as to possible additional means of representation, with musical staves seeming like the only possible option.[23]

However, this position underwent a sea of change with the adoption of the EU Directive 2015/2436 and Regulation 2015/2424, which abolished the requirement of graphical representation.[24] Hence, post October 2017, applications were permitted to be filed through electronic format as well, thereby paving the way of registration of sound marks via audio clippings and sound files in the European Union.

[18] T. Agarwal, *Conventionalizing Non-Conventional Trade Marks in India*, JOUR. OF CONTEMP. ISSUES OF LAW, V.3(5) (2017).
[19] *See*, E.U. First Council Directive (89/104/EEC) Art.2.
[20] Shield Mark BV v. Joost Kist, C-283/01, 2003.
[21] Ibid, ¶41.
[22] Ibid, ¶59-61.
[23] WIPO, STANDING COMMITTEE ON LAW OF TRADEMARKS, INDUSTRIAL DESIGNS & GEOGRAPHICAL INDICATION, SCT/16/2, 2006.
[24] European Parliament, Directive 2015/2436 2015; Regulation 2015/2424, 2015.

With respect to the U.S.A., the Lanham's Act, 1946 does not stipulate any requirement of graphical representation[25] and hence, the registration of sound marks within the American framework is permissible simply with a detailed description of the mark. Famous illustrations include the Lion's Roar of MGM[26] and the Tarzan Yell[27], both of which have been registered as "sensory marks".

On the other hand, in India, the Trademarks Act, 1999 explicitly mentions visual representation as a prerequisite for registration of a mark.[28] Nonetheless, over the years, certain sound marks have been registered in India, by some form of graphical representation such as conventional notation. For example, the first sound mark to be registered in India was Yahoo's yodel in 2008; which was followed by numerous others such as ICICI's jingle and Brittannia's 4 note bell sound.[29] Moreover, the recently promulgated Trademark Rules, 2017 has further facilitated the registration of sound marks by specifically allowing the attachment audio clips in the form of mp3 recordings of thirty seconds.[30]

The above demonstrates that the sense of "sound" has acquired been recognised in some form or the other in trademark jurisdictions across the globe. However, it is imperative to note that the relationship with "sight" has not been completely done away with- as many countries still prefer some form of graphical representation of the mark, *along* with electronic recordings. This perhaps could be understood as representing a practical issue though, rather than a legal one.[31]

II. Smell

The sense of "smell", is considered to be more powerful in evoking and creates memories than any other sense, including that of sight. This is due to biological reasons, as the olfactory bulb is directly connected to the areas in the brain that are responsible for emotion and memory.[32] However, the validity of "scent marks" or "smell marks continue to remain contentious and controversial in most jurisdictions.

In U.S.A., as mentioned previously, the governing trademark law does not mandate graphical representation and smell marks are thus not per se excluded. However, even descriptions of such marks are extremely complex to convey with words, and even chemical compositions are reflective of the substance itself, rather

[25] *See*, The Lanham Act, 145 (USA).
[26] Metro-Goldwyn-Mayer Lion Corp., "Lion Roaring", Reg. No. 1395550. (USA).
[27] Edgar Rice Burroughs, Inc., "Tarzan Yell", Reg. No. 2210506. (USA).
[28] *See*, The Trademark Act, 1999 (India).
[29] CIPAM, *Registration of Sound Marks Made Easy*, IP PALETTE ISSUE 3 (2017).
[30] The Trademark Rules, 2017, Rule.26.
[31] A. Majumdar, *The Requirement for Graphical Representability for Non- Conventional Trademarks*, JOUR. OF IPR V.11 314 (2006).
[32] R. Herts, *The Role of Odor-Evoked Memory*, BRAIN SCI. 6(3) 22(2016).

than the scent itself.[33] Nevertheless, there have been reported instances of descriptions of scents satisfying the requirement.

The landmark judgment in this regard is *In Re Clarke*, where a distinct fragrance resembling a certain flower that was applied in the context of embroidery yarn and material, was considered to be a valid trademark.[34] The main reasons given for granting this were that the applicant was the sole trader who had applied such a smell to this product and because the smell was not natural and did not emanate from the good itself.[35] This has led to the USPTO requiring two main features for a smell to be registered- distinctiveness and non-functionality, i.e., the smell should not a function of the product or part of its essential use.[36] However, this remains an extremely high threshold and less than a handful of smell marks have been registered since this case. Notable exceptions include a fragrance mark granted to Hasbro for its infamous and unique smell applied to its product Play-Doh.[37]

With respect to the European Union, the infamous *Sieckmann* case held that in order for a non-visual mark to be registered it had to be graphically represented with preciseness and clarity, and hence the application describing the chemical composition of the smell in this case was rejected.[38] While graphical representation has now been formally done away with under EU law, it is still difficult for smells to be registered. A noteworthy illustration in this regard is Chanel's attempt to trademark its iconic "Chanel No.5" perfume. The application was dismissed due to *functionality*- because the fragrance here is the product itself, and hence cannot be regarded as a separate indicator of the source of the product.[39] However, a couple of smell marks have been granted in the U.K., including the smell of roses applied to tires,[40] and the fragrance of beer to darts.[41]

In India, till date no registration for a smell mark has been accepted due to the formal requirement of visual representation, as well as the inherent difficulties that have been faced by the American and European jurisdictions. In addition to these explicated above, it is important to note that there are several other challenges for smell marks. For one, universal fondness and aversions to smells exist, thereby leading to a limited number of smells that may be utilized in a business.[42] Moreover, smells can be highly subjective and

[33] S. Sinha, *Tracing the Jurisprudence of Smell Mark*, HNLU STUD. BAR. JOUR. V.1(2) (2017).
[34] In Re Clarke, 17 U.S.P.Q.2d 1238, 1239, ITAB 1990.
[35] Ibid.
[36] USPTO, Trademark Manual of Examining Procedure, Section 1202.13.
[37] Hasbro, "Play-Doh Scent", Reg No 5467089. (USA)
[38] Ralf Sieckmann v. Deutsches Patent und Markenamt, C-273/00, 2002.
[39] A. Kumar, *Protecting Smell Marks- Breaking Conventionality*, JOUR. OF IPR V.21 131 (2016).
[40] Sumitomo Rubber Co., Application No. 2001416 (1994).
[41] Unicorn Products, Application No. 2000234 (1994).
[42] L. Fleck, *Survey of Select Jurisdictions in Scent Mark Registration*, CENTRE FOR INNOV. LAW & POLICY STUDENT PUB. GRANT PROG.

depend on numerous factors, such as environment, humidity, age etc., thereby making it difficult for both consumers and patent offices to distinguish them.
However, there are equally strong arguments in favor of accommodating them, based on their superior ability to condition customers in remembering a certain brand and creating a lasting memory. This is particularly important in age of information overload, as sells and fragrances can assist consumers in narrowing their options and making a suitable choice.

III. Taste

Marks that rely on the sense of "taste" are an interesting form of trademarks that have emerged in recent times. However, as is the case with smell marks, these trademarks also possess inherent limitations, particularly that of distinctiveness and functionality.

In the U.S.A, merely a detailed description of the mark is required, and in that sense, tastes are relatively easier to be conveyed through written words as opposed to smells or sounds.[43] However, a unique obstacle for taste marks is that it is only discernible after the customer *consumes* the product- thereby squarely defeating the purpose of trademarks themselves. A notable illustration in this regard is a recent case of *NY Pizzeria v. Ravinder Syal*, in which the plaintiff had attempted to trademark the flavour and taste of the pizzas served at its restaurant.[44] The District Court in this case firmly rejected the same, reasoning that the "taste" of a food item is its characteristic, and comes into play only when the customer has already purchased and consumed the product, as opposed to a source/origin identifier.[45]

In addition, the "functionality" hurdle is equally difficult to overcome for taste marks, as may be demonstrated through *In re N. Oreganon*, where an application for "orange flavour" in respect of certain medical drugs was rejected.[46] The application here was dismissed on the ground that flavor commonly performs a utilitarian function, such as disguising the inherent taste of pharmaceutical products, rather than acting as a brand indicator.[47]

Similar decisions have also been pronounced in the European Union, such as Eli Lilly's application for a mark over the flavor of artificial strawberries added to its pharmaceutical goods.[48] The mark here was

20 (2003).

[43] WIPO Magazine, *Smell, Sound and Taste – Getting a Sense of Non-Traditional Marks*, February 2009, available at https://www.wipo.int/wipo_magazine/en/2009/01/article_0003.html.
[44] N.Y. Pizzeria v. Ravinder Syal, U.S.A. Dc Texas C.A. N0. 3:13-CV-335, 2014.
[45] Ibid., at 13.
[46] In Re N.V. Organon, 79 USPQ 2d 1639 (TTAB 2006)
[47] Ibid.
[48] Eli Lilly & Co. Application, OHIM R 120/2001-2 (2003).

rejected, as the examiner pointed out that such flavors would likely to be perceived by the customer to be an attempt to mitigate the unpleasant flavor of the product and not as a trademark, and that the same failed to meet any threshold of distinctness.[49]

With respect to India, no such mark has been registered or litigated either, due to the statutory and other limitations. While smell and sound marks have several compelling reasons to accommodate them within contemporary trademark law, the above discussion demonstrates that it is extremely difficult to justify the inclusion of the sense of "taste". Moreover, the practical and legal issues are prime facie discernible, when we consider the fact that no flavor/taste mark has been registered in the world till date.

IV. Touch

Trademarks that are based on the sense of "touch", i.e. texture marks, are the least common form of unconventional marks across nations in terms of applications and litigation. Prime facie, visual representation and written descriptions of such marks are extremely difficult to convey and hence there has been limited acceptance of the same.[50] However, the WIPO has noted that in some jurisdictions, it is possible to graphically represented these tactile marks through innovations methods such as providing a samples akin to Braille printing.[51] Nevertheless, this is extremely rare, with few exception being a trademark granted by Ecuador for a distinctive "crinkled crackle glass) texture" for an alcoholic beverage bottle,[52] and a mark granted in the U.S.A. for a leathered wrapping around a wine bottle.[53]

However, it is to be noted that while proving non-functionality and distinctiveness may be difficult in terms of marks based on touch or feel, it is not impossible, and unlike taste marks, the issue here is more practical rather than legal. In this vein, it is opined that texture marks may still be accommodated within contemporary trademark laws.

V. Sight

The sense of "sight" has been give paramount importance within the domain of trademark law and its role is uncontested. Not only has primacy been given to visually perceptible marks, visual representation has

[49] Ibid.
[50] WIPO, INTRODUCTION TO TRADEMARKS AND BRANDS FOR SMALL AND MEDIUM-SIZED ENTERPRISES PUB. NO. 900.1E
[51] WIPO, STANDING COMMITTEE ON LAW OF TRADEMARKS, INDUSTRIAL DESIGNS & GEOGRAPHICAL INDICATION, SCT/16/2, 2006.
[52] Old Parr, "Texture mark", Registration No. 29597, 2004 (IEPI).
[53] David Family Group, "Sensory mark", Reg. No. 3896100, 2010 (USA).

also dominated all forms of marks, including unconventional ones. The rationale touted behind the latter is that of *practicality*, as graphical representation ensures clarity, unambiguity and reasonable comprehension for understanding and distinguishing the mark.[54] While jurisdictions like the E.U. have diluted this requirement, countries like India continue to have such a stipulation in the written law. Moreover, visual marks in the classical form continue to be one of the most common marks across the globe.[55]

This uncontested and unambiguous role of sight has also ensured that visually perceptible trademarks, have had significant developments within their domain, as they do not have the disadvantages of the other sensory marks, as discussed above. For example, "shape marks" such as Zippo's lighter have been upheld by Delhi High Court,[56] "color marks" such as Owens- Corning iconic pink have been recognized in the U.S.A.,[57] "motion marks" and "hologram marks" have bene recognized within the E.U. and many more. This is because that while all the marks based on sight still have to satisfy the regular thresholds for obtaining marks, such as distinctiveness, non- functionality and secondary meaning, they do not have any *inherent* limitations in respect of their *visual nature*. In this vein, marks based on "sight" have significant advantages as compared to other trademarks.

VI. The way forward

Through the course of this paper, the author has demonstrated that while there is a fundamental interplay between biological senses and trademark law, there are several legal and practical issues in accommodating the former within the latter. While the sense of "sight" has firmly established itself within the framework, the senses of sound, smell, touch and taste are yet to acquire universal acceptance.

It is opined that for sound marks and texture marks, the obstacles are more *practical*, rather than legal, and in their cases, every effort should be made to include them, by relying on technology and science to facilitate their registration. At the same time, the author does recognise that smell marks and taste marks do have inherent difficulties as generally they only come into play *after* the consumer has purchased the product, However, for smell marks this is not always the case and hence it is indeed possible to bring them under the purview of trademark law.

Ultimately however, it also depends on the jurisdictional requirements, as there is no mandate in

[54] A. Majumdar, *The Requirement for Graphical Representability for Non- Conventional Trademarks*, JOUR. OF IPR V.11 314 (2006).
[55] WIP0, INTELLECTUAL PROPERTY HANDBOOK, PUB. NO. 489(E) (2008).
[56] Zippo v. Anil Moolchandani CS (OS) 1355/2006.
[57] In Re Owens-Corning Fiberglas Corporation, 774 F.2d 1116 (1985).

international convention that sensory marks *have* to be recognised. However, it is opined that this should be done due to a number of reasons. Firstly, a sole emphasis on sight is discriminatory towards those who are visually impaired and rely on other senses to perceive the world. A contemporary trademark framework must be inclusive to *all* persons and therefore recognising other senses is an important step in this regard. Moreover, scientifically speaking, the other biological senses such as smell, have an equally if not *more* powerful function in creating memories and connections within the consumers' minds. Therefore, in an era of information and technology overload, the author believes that recognising evolving branding and advertising strategies that rely on different biological senses is equally beneficial to both consumers and traders- and hence must be encouraged at all costs.

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A STUDY ON THE SCOPE OF SYNTHETIC BIOLOGY IN DIFFERENT FORMS OF INTELLECTUAL PROPERTY RIGHTS

- *Anina Vincent*[58]

Abstract

Synthetic biology is one of the emerging and innovating fields of life sciences. The basic idea behind synthetic biology is based on "every body of a living organism can be seen as a mixture of different functional units or elements which can be manipulated in innovative and different ways to modify the existing biological system of various organisms". Many researchers in life sciences are engaged in scientific research to develop and establish new innovations. One prominent example of such instance is the synthetic production of the baine, an opiate morphine precursor harvested from poppies for millennia, can be synthetically produced using the yeast embedded with biological sequence in a bacterium. Synthetic Biology research can find the solutions to environmental, pharmaceutical, or other scientific challenges. Multiple stakeholders, such as Reliance, Merck, Monsanto, Johnson & Johnson, like commercial giants, are investing in this area and harvesting several monetary gains from this. Due to these developments and innovations, researchers are often seeking different intellectual property (IP) protections such as, patents, trademarks, trade secrets and copyrights as a fruit of their innovative synthetic biology products and processes. This paper deals with these innovations in synthetic biology and their scopes in different forms of IP protection.

Keywords: Synthetic Biology, Innovation, Patent, Copyright, Trademark.

Introduction

New research in life-sciences has been taken by a hurricane since the beginning of the Human Genome Project. Curiosities of academicians and life-science students have always motivated to do such research. However, such research changes from basic into commercial application, leading to the formation of new markets in the emerging world. It is an accepted reality that, from the beginning of this modern era, life science has changed its direction not only to the basic elements of biological systems but also to the changing of such knowledge into industrially potential applications in every day of life. The concerns of the existing

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and future living systems on the planet Earth have brought in the fact that humans need to build more viable and sustainable techniques having minimal negative impact. The artificial life making of such research creates a daring offshoot to the generations of existing living beings. The created artificial systems have a large variety of applications in almost all disciplines and have an inevitable role in scientific research.[59] Among these life-science branches, synthetic biology is the most revolutionizing area.

Synthetic Biology is an emerging and spontaneously evolving area with the involvement of diverse applications of various disciplines. Biological science has never before seen such a platinum rush and showed the potential of knowledge-based economy. The synthetic biology area is currently in a nascent and tender stage. It has diverse unexplored areas for manipulation and use. However, the problems related to the monopolistic intellectual property (IP) regime have already begun to create issues about the rising bio-based economy. Life-science researchers are seeking different IPR protection for synthetic biologic products. The common types of IP for synthetic biology products are patents, trademarks, trade secrets and copyrights. This paper focuses on what is synthetic biology and its scope in different forms of IPRs.

What is Synthetic biology?

The concept of synthetic biology is based on the incorporation of different genetic/genomic techniques and technologies in various engineering disciplines. While there is no any single definition for synthetic biology and no definition will have the power to incorporate all the instantly going technological landscape and most definitions include the same theme of the engineering disciplines based on the technology and its applied science that incorporates various types of its applications. The researchers are engaged in "bottom-up" or "fundamental" synthetic biology techniques to find and produce various design principles of living body parts and modules in order to create the biological systems from rough biological components. They can create novel or modified genomic pathways or cycles in computers (based on already existing genomic data and/or standard genomic parts) and use the DNA synthesizer to create the designed assembly, and then place it inside the cell. This means greater control over the final product characters and having the ability to create many substances that are too costly and complex for reproduction by conventional chemical synthesis techniques.[60] For example, in 2014, some life-science researchers at the company named "Synthorx" provided information about the production of a bacterium with an enlarged six-letter genetic alphabet, with the addition of X and Y named new bases to the standardized bases of A,T,C and G. This addition will create a noval organism having the capability of the production of artificial therapeutic proteins.[61] At the same

[59] Trichi Saukshmya, Archana Chugh, "Intellectual Property Rights in Synthetic Biology: An Anti-Thesis to Open Access to Research?" 4 *SSB* 241-245 (2010).
[60] Melody M Bomgardner, "The Sweet Smell of Microbes" (2012).
[61] Margo Baegly, "Digital DNA:The Nagoya Protocol, Intellectual Property Treaties, and Synthetic Biology" *SBP* 1-37 (2015).

time, "top-down" or "translational" synthetic biology researchers can identify the answers to environmental, medicinal, agricultural, or other problematic issues by re-planning the arrangements of genetic sequences or already existing living systems to achieve novel or improved functionality. For example, in recent time, synthetic biology researchers created and produced the synthetic copy of "thebaine", a precursor of the opiate morphine taken from poppy plant, using the genetic sequence information embedded in the yeast from some plant species, a rodent and a bacterium.[62] However, the awareness about synthetic biology remains low in public, developments are advancing instantly in the field, sometimes amid conflict.[63] [64] Moreover, a growing number of multi-national companies are marketing synthetic biology related products in many areas, including pharmaceuticals, chemicals, bio-fuels, bio-remediation, and agricultural products. A Synthetic Biology Project report in 2013 shows that research in the synthetic biologic field is continuing to spread and happening in approximately 30 nations and in 565 multinational companies, universities, government and private laboratories, community laboratory space etc.[65] But now in 2023, the situation is highly favorable for synthetic biology projects, COVID-19 pandemic acts as a catalyst for this. Almost all countries now have their own synthetic biology projects. Among the countries, U.S (that is in the first position), European countries including UK, Japan, China, Canada, India, Brazil etc. have many researchers working in synthetic biology research and almost all exchange and share the data across national boundaries. Furthermore, commercial activity is not constricted to small industries. Giant multi-national companies such as Monsanto, Johnson & Johnson, Du ponts, Merck, Goodyear Tires etc. are increasingly supporting and doing the synthetic biology partnerships and projects into their portfolios. For example, the Indian commercial giant named "Reliance" invested huge money in synthetic biology related projects in 2023. All researchers and multinational companies often take IP protection as the fruit of their innovative works, including synthetic biology products. [66]

Synthetic biology and Intellectual property rights

The political theory of IPR, covers the necessity to provide advantages to raise ingenuity and meet societal commitments. The intangible behavior of IP has been presented as a pushing legal character in the nature of a right in the property contained in this. This protection creates a riddle for many researchers in synthetic biology. One of the important pushing factors to increasing the number of IP protections is open science practices between the research groups. The rising number of some projects and registries such as the "Twist

[62] Robert F. Service, "Modified Yeast Produce Opiates from Sugar" 677 *SCI* (2015).
[63] Perceptions of Synthetic Biology and Neural Engineering, Hart Research Associates, available at http://www. synbioproject.org/site/assets/files/1073/ focusgroup_2014.pdf (Visited on August 18, 2023).
[64] Synthetic Biology, ETC Group, available at http://www.etcgroup.org/issues/synthetic-biology (Visited on August 18, 2023).
[65] Synthetic Biology Products and Applications Inventory, Synthetic Biology Project, (2014), available at http://www.synbioproject.org/cpi/ (Visited on August 18, 2023).
[66] Margo Baegly, "Digital DNA:The Nagoya Protocol, Intellectual Property Treaties, and Synthetic Biology" *SBP* 1-37 (2015).

Biosciences" and "10,000 public-benefit gene donation initiative of BioBricks Foundation", Bermuda, Fort. Lauderdale, and Toronto Agreements and more recent accords, all encourage this open science practice between the researchers.

Synthetic biologic researchers are not in one mind when it comes to IP protection. They often try to take different IP protections like patent, trademark, copyright, trade-secrets and traditional knowledge. Among these, the most important IP protection of synthetic biology is patents.

A. Synthetic biology and Patent

The patent is a form of IPR which provides protection to the invention having novelty, inventive step/non-obviousness and industrial application/utility. Patents promote the enlargement and spread of innovative ideas in tangible form through commerce, which has in effect been realized to be a value asset and trade currency.[67] The grant of a patent rights have been conventionally acknowledged as bringing exclusive rights and privileges for selling or using new/novel produced technologies, goods and services for the conditional legal time. Then, patents granted to the inventors have been justified based on the particular behaviour of the generation and their role, circulation of technical and technological information and empowerment. Many experts in economics believe that it is very important for society to give broad access to new products and technologies. The reason is, when patented inventions are successfully launched and available to the public, then as a return, inventors get the market value and, in the end, increase their economy. Once the term of a patent finishes, other players in the market become ready to enter, thereby welcoming healthy competition in the market. This, finally, not only benefits the customers in the public but also allows the inventions to spread in to different market fields. The increased market value of patents has made them to think about the different forms of assets, which can increase the monetary value of industries. [68]

In the patent field, two philosophical camps have emerged. While the first one is based on the sharing, disclosure, and free accessibility of synthetic biology engineered parts and information rights conferred with an open science nature, [69] the second one is more conventional "patent-protection-as-an-incentive-for-disclosure-and-investment" philosophy.[70] The advocates of open source strongly believe that the easy availability of new information about the invention will facilitate more speedy discoveries that will benefit society. Those in the side of synthetic biology products patenting counter the financial spending requirement

[67] Bentley L, Sherman B, "Intellectual Property Law" *OUP* (2001).
[68]Trichi Saukshmya, Archana Chugh, "Intellectual Property Rights in Synthetic Biology: An Anti-Thesis to Open Access to Research?" 4 *SSB* 241-245 (2010).
[69] HeIdi Ledford, "Bioengineers Look Beyond Patents" 499 *NAT* 16-17 (2013).
[70] F. Scott Kieff, "Property Rights and Property Rules for Commercializing Inventions" 85 *Minn. L. Rev.* (2001).

in the research and believes that the patents allow for the recoupment of returns on that investment. These two philosophical camps clearly show the issues of rapidly growing synthetic biology space in the world.[71]

For synthetic biology, patents have been considered as the primary form of IP protection. A large number of patents have been issued on the process and product of synthetic biology ranging from scientific process of "artemisinin" production for the treatment of the disease named malaria to production of bio-fuels using some modified microorganisms. However, a recent milestone case on the subject-matter eligibility of gene patents in Australia and the U.S has eradicated the patent protection for the inventions related to synthetic biology. Especially, the Supreme Court's decision of U.S. in the *Myriad Genetics* case nullified the patent protection for the genomic DNA (gDNA) and other related products, which are not qualified as "compositions of matter, machines, articles of manufacture, or processes made by man". The court also mentioned that short cDNA sequences are not patent eligible where they are not distinguishable from naturally occurring DNA. Furthermore, larger synthetically produced sequences will not be patent eligible even if these sequences are not "different" to what already exists in the world.[72] On that basis, claims of at least any one of the synthetic biology based application of patents has already been rejected for cDNA sequences. Many court decisions take this *Myriad* case decision act as precedent for nullifying the unnecessary patent claims such as in the *In re Roslin Institute* patent about the cloned animal. Also, this decision, creates many criticisms and alarms from various genetic engineering and biotechnology industries and patent professionals, as the guidelines of office for patent examination seem to go way further in constraining patentability and patent eligibility than the decisions of the court. Moreover, the recent guidance from the patent office informs a less strict move towards inventions related to products of existing nature.[73] All patent laws are territorial in nature and the effect of patents are only within the borders of the nations. Therefore, the *Myriad* case decision only has an impression within the U.S; synthetic biologic researchers have a chance to still obtain patent protection in other nations, especially from the EU member states. The important reason for this is the "European Union Biotechnology Directive" directly allows the patent protection on some genetic sequences that would neglect in the patent eligibility requirements of the U.S. [74]

On *D'Arcy v. Myriad Genetics* case in October 7, 2015, the highest court in Australia hold the invalidity of some patent claims in Myriad's case covering gDNA, BRCA1, *and* cDNA sequences.[75] The High Court of the country holds that such patent claims will not fall under the "manner of manufacture" statutory

[71] Margo Baegly, "Digital DNA:The Nagoya Protocol, Intellectual Property Treaties, and Synthetic Biology" *SBP* 1-37 (2015).
[72] *Diamond* v. *Chakrabarty* (U.S. 447, 1980).
[73] United States Patent & Trademark Office, "Interim Guidance on Patent Subject Matter Eligibility" (2015).
[74] Margo A. Bagley, "Patent Barbarians at the Gate: The Who, What, When, Where, Why & How of U.S. Patent Subject Matter Eligibility Challenges" Patent Law in Global Perspective (2014).
[75] *D'Arcy* v. *Myriad Genetics Inc*, (HCA 35, 2015).

requirement. Due to the newness of the decision, it is not clear and causes confusion about what the potential implications would happen when patenting of the synthetically created DNA sequences.[76] However, some of the inventions related to synthetic biology remain patent eligible in countries such as Australia. Through the case of "*Arrowhead Research Corporation"* in 2016, "double-stranded synthetic RNA (dsRNA), was a product of patent-eligibility. because it was more than just gene information.[77] Anyway, these cases indicate that most scientists and researchers are trying to seek patent protection for synthetic biologic products. Also, the current exploration scenario balances the IPR utility and open access to research, which ultimately facilitates the growth of research in synthetic biology.

B. **Synthetic biology and copyright**

Some researchers and industrialists see the protection of synthetic biologic products using copyright as the best option other than patents as it may produce more allowed uses of genetic sequences. The time period of copyright protection is larger than patents. For copyright, the time period of protection is the time of the author's life plus 70 years. Patents have only 20 years from the date of filing the patent application. However, the protection of copyright is not as strong as patents.

Different from patents, copyrights have many flaws. They are 'the damages for innocent infringements have limits, copyright infringement has a defence, using independent creation, and the fair use/fair dealing provision of copyright law reasonably defends the use of protected sequences. Effective protection cannot be guaranteed for copyright protection like patents. Furthermore, some people see copyright protection is better than patents to promote an open source life-science regime.[78]

Nevertheless, the copyright protection chance for synthetic biologic products is very small compared to patents. Actually, the copyright only protects the works original to the author and which is fixed as expressions in tangible mediums like literary and musical works, architectural designs, and even in programs on computers.[79] Several proponents of copyright protection advise that, for synthetic biology, copyright may be appropriate protection, because synthetically created genetic sequences meet the originality and expression requirements. Furthermore, for open source advocates, the exclusive freedom given by the provisions of the copyright act could possibly be used to enforce the requirements of sharing on users of the sequence, a move that some in the open software have used in effect with "copyleft" licenses. However, some opponents criticize that copyright is not appropriate for the products of synthetic biology , by saying

[76] Margo Baegly, "Digital DNA:The Nagoya Protocol, Intellectual Property Treaties, and Synthetic Biology" *SBP* 1-37 (2015).
[77] Arrowhead Research Corporation, (APO 70, 2016).
[78] Margo Baegly, "Digital DNA:The Nagoya Protocol, Intellectual Property Treaties, and Synthetic Biology" *SBP* 1-37 (2015).
[79] 17 U.S.C. § 102 (1990).

it is a mere rearrangement of the genetic sequences.

In "*Emergent Genetics India Pvt. Ltd. v. Shailendra Shivam and Ors",* the Delhi High Court rejected the eligibility of copyright in the hybrid seed DNA sequences. However, these hybrid seeds were not produced using genetic engineering techniques, the foundation of the judgement appears to directly deny the copyright protection to any genetic sequences. The High Court also mentioned that even if the selection and its combination process of genetic sequence was real or original, it still would go against the doctrine of merger because the genetic components combining ideas are expressible in short ways."[80] Also, the information from the copyright office has pointed out that genetic sequences are not eligible for copyright. Anyway, that judgement is presently the subject matter of a planned appeal.

Therefore, the protection using copyright does not seem to be a practical choice for genetic sequences in this current situation. Nevertheless, as with computer applications, which the office of copyright really opposed as being disqualified for the protection of copyright, that place may change over time. As an interest information, the "BioBricks Public Domain Chronicle" used the public license, which approves inventors to claim copyright protections including the genomic information for their conclusions, published via the Chronicle. Due to this polar behaviour, experts again emphasized that a sui generis IP regime for synthetic biologic products instead of copyright and patent is needed.

C. Synthetic biology and trademarks

A trademark is a type of mark used in trade, which is used for identifying the goods and services of one trader to another in an appropriate way. This mark can be illustrated as logos, symbols, words, pictures, shape of a container or a product, or a combination or mixture of these. There are exceptions from these marks, which are not permitted are the marks which cause deception to the public, immoral, country symbols, country flags, etc. A trademark helps to understand the good's origin and creates a reputation or goodwill for the owner of the mark. It means that all products have the mark come from a single authority and denote its special quality.[81]

The names of products and packaging of synthetic biology can be protected using trademarks and trade dresses. The motifs of synthetic biology can be used as trademarks and the silent information will be locked up in the mind of researchers. For distinguishing the scientific, technical, technological and research services given by various research institutions, trademarks play an important role in synthetic biology. For example,

[80] *Emergent Genetics India Pvt. Ltd.* v. *Shailendra Shivam and Ors* (AIR 2004. 388)
[81] Rajendra K. Bera, "Synthetic Biology and Intellectual Property Rights" Biotechnology InTech (2015).

consider a registered trademark named BioBricks®. When there is a seeking of biological parts under the "BioBricks" word and logo by various researchers, students or the general public, then there is an expectation of the biological parts will come from the BioBricks foundation, and believes that the "BioBricks" Foundation maintains their superior speciality or their quality. By this way, there is a value in certain services associated with synthetic biology trademarks.[82]

Other examples of trademarks are InCelliGEN/Genes for life ®, Syno®, Synotype®, Synbio-tech/Genes for life®, Syno3.0®, DNA Studio™ etc. The list of the trademark names are the selected symbols of trademarks in Synbio Technologies. Almost all trademarks are protected by international and domestic laws of trademarks; however, there are specific trademarks which are not registered in all jurisdictions.[83]

D. Synthetic biology and trade secrets

Some industrialists sought both trade secrets and patent protection for their DNA design, synthesis services and its developments. Commonly, the law of trade secrets protects the information which gives a competition asset to its proprietor from disseminating the knowledge to the general public and keeping the information as a secret. These providers generally keep the privacy of any genetic information that they produce for their customers. Moreover, the industrial genetic service providers are also making valuable secrets of genetic information databases which gives them a competitive advantage over other commercial entities.

Furthermore, every single researcher might choose not to create genetic sequence information, alternatively, hide it as a trade secret, giving the information only to the faithful researchers on a secret basis. Some synthetic biologists also mentioned that they are not ready to disseminate the genetic sequence information due to the large amount of produced information, and the money and time related to studying and analyzing its importance and value for the scientific competition. This may lead to another type of consequence in the synthetic biology field called 'youthfulness', with the fear of "scooping" the information made by many young researchers, and about having short a time to publish and disseminate the information not directly included in a publication in scientific journals. The practicability of keeping the trade secret protection, the complexity, difficulty, uncertainty, ambiguity and expense creates many issues in trade-secret protection of synthetic biologic products.

[82] "Emerging Policy Issues in Synthetic Biology", OECD Publishing(2014).

[83] Trademarks & License Agreements, Synbio technologies, available at https://synbio tech.com/trademarks-license-statements/ (Visited on September 8, 2023).

Conclusion

Synthetic biology has relation to the IPR protections such as patent, copyright, trademark and trade secrets. The inventions related to synthetic biologic products get patents in many countries. The items prepared using genetic sequence synthesis and their creation also have a chance to qualify as human made real and original “literary and artistic works” and they may be suitable for the protection of copyright. Moreover, a gene is a type of information that has molecules like software of a computer program, which also is a copyright-able subject matter. Likewise, the marks of synthetic biology can be protected as trademarks and its implied information will settle in the minds of researchers and may deserve to receive trade secret protection. This indicates that synthetic biology products are applicable for IP protection. However, there are challenges present in these IP forms for the protection of synthetic biology. Therefore, addressing the challenges is essential in this technological world.

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Copyright and Non- fungible Tokens (NFTs)

- Mitali Rakhecha[84]

Abstract

This article talks about what are NFTs and what role does copyright play in NFT with recent examples and case. Non-fungible Tokens (NFTs) have become extremely popular in 2021, fusing the technological and artistic worlds. These distinctive cryptographic tokens represent ownership of physical or digital assets and are one-of-a-kind, which has caused them to become increasingly popular. Early in the year, generative art and profile image initiatives like CryptoPunks and Bored Ape Yacht Club garnered popularity and even celebrity endorsements, making NFTs into markers of membership in the crypto ecosystem. The value of NFTs has been expanded by digital artists to include more than just speculative trading on secondary markets, which has sparked creative marketing initiatives that include TV shows and other items. NFTs are digitalized replicas of numerous materials, including memes, artwork, and apparel. They are constructed mostly on the Ethereum architecture, using ERC-20 for fungible tokens and ERC-721 for non-fungible tokens, and are tokenized by blockchains with distinctive identifying numbers. On systems like Open Sea and Super Rare, NFTs are digitally represented, tokenized, and issued. NFTs, however, present issues with ownership and copyright. Buyers of NFTs only receive the related metadata and not the actual job, which may cause misunderstandings. Furthermore, because to the open nature of blockchain platforms, anybody with technical know-how may create an NFT, generating issues with bogus ownership claims. NFTs are subject to the same copyright regulations as traditional works of art. The unique rights that copyright owners have over their creations include the ability to base NFTs on their original works. NFTs, however, do not transfer copyright; instead, they just provide the buyer a licence. In the NFT industry, new legal issues involving copyright infringement and right-to-publicity breaches are arising. In conclusion, NFTs represent a unique point where technology and art converge and have major legal and copyright ramifications. While many issues will be settled at the platform level, as NFTs continue to gain popularity, the market is expected to witness an increase in copyright challenges. The lack of explicit legislation for the NFT market necessitates clarity in the interpretation and usage conditions of smart contracts, lowering the danger of copyright infringement.

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Keywords: Non-fungible token, Cyber Squatting, Copyright, Blockchain, Copyright infringement

Copyright and Non- fungible tokens

"In 2021 NFTs, have taken the art and tech world by storm"[85]

Since 2021 there has been a rise in popularity of Non-fungible Tokens (NFTs). Early in 2021, while generative art and profile picture (PFP) initiatives like CryptoPunks and Bored Ape Yacht Club were advertised by celebrities and utilized as a badge of membership in various crypto forums, non-fungible tokens (NFT) gathered popularity. These cryptographic tokens signify ownership of a real or virtual item and cannot be duplicated. While the beginning of the NFT rush has died down, digital artists have sought to raise the value of these goods above speculator commerce on the secondary market. Some initiatives have increased opportunities for commercializing NFT artwork, including TV series and products. 'Everydays: The First 5000 Days' by Beeple, an NFT of a digital work, was sold by the renowned auction house Christie's for USD69.3 million on March 2021. It is difficult to tell if the growing popularity of NFTs is only a passing trend or a really groundbreaking application of blockchain technology which has the potential to fundamentally alter industries, much like cryptocurrencies have.

Recently, Mason Rothchild in late 2021, crated and sold 100 "Meta Birkin" NFTs, these "Meta Birkin" depicted Hermès iconic "Birkin" bags covered in fur rather than leather. In a court battle, the designer Rothchild was accused by the high-end label Hermès of selling "Meta Birkin" NFTs that were $450 apiece and offered royalty on further sales. The main question was whether these NFTs qualified as commercial goods that would confuse customers and violate intellectual property rights, or if they were an example of creative expression covered by the First Amendment. Many customers assumed incorrectly that Hermès was somehow connected to the selling of these NFTs, which sparked worries about possible dilution, unfair competition, and cybersquatting. The basis of Rothchild's defense was the claim that because his works were works of creative expression, they were completely protected by the First Amendment. In the end, the matter proceeded to trial, where a jury was given the difficult challenge of deciding what exactly these "Meta Birkin" NFTs were. However, the jury found in favour of Hermès on every point. They discovered that Rothchild's intention was to deceive potential consumers, even if they acknowledged that the NFTs may be viewed as works of creative expression to some extent. This significant discovery demonstrated that the Constitution's First Amendment could not, in this instance, protect him from legal responsibility. The jury's verdict led to Hermès receiving a damage award of $133,000 as a result. This decision successfully underlined how crucial it is to sell NFTs in a transparent and truthful manner, especially where there is a chance of customer misunderstanding and a chance that intellectual property rights may be violated. In the

[85] WIPO, https://www.wipo.int/wipo_magazine/en/2021/04/article_0007.html (last visited 5th October 2023).

developing world of NFTs, the case serves as a precedent for the need for distinct lines to be drawn between commercial endeavors and artistic expression, ensuring that both the safeguarding of intellectual property rights and First Amendment rights are taken into account within the context of each individual case.

What is NFT and how does it work

NFTs are the digitalized form of assets of underlying works (defined under section 2(y) of Copyright Act, 1957) like meme, gifs, art and even clothes. These are assets that are tokenized by blockchains and are assigned with unique identification codes or metadata which distinguishes them from other tokens. These tokens are a type of digital ledgers that have a programmable digital unit of value and they can constitute of anything such as commodities, share, coins, etc. NFTs can be marketed or can be exchanged for cryptocurrencies, money etc. Fungible goods are exchangeable regardless of the item that is specifically sold or bought like silver, oil etc. while the nonfungible goods are one of a kind like custom made gold anklet, a painting, or an artwork. There are many different types of token standard, and the most common is Ethereum infrastructure. The token standards for fungible tokens are ERC20[86] and for non- fungible tokens are ERC-721[87]. Any work that is digital, including physical good that can be converted into digital form like photo etc. can be turned into a non-fungible token. The first-time use of Ethereum infrastructure in NFT standard was used in characters of Cryptopunks which was a set of pixelated images. Among the various type of NFTs most common is a metadata file which contains information that is being tokenized with an encrypted digital version of the work and the other type is in a blockchain, but as the information form it is expensive to upload so they are less common.

The main elements of an NFT are tokenID that is a number which is generated when a token is created and a contract address which is a blockchain address. The combination of element in a unique form makes a token unique. In a contract there are other elements like wallet address of a creator that can be present this helps in identifying the NFT of an originator. In most of the times the NFTs have a link to where an original work can be found, this is because an NFT is a unique digital signature that is linked to the original work. When a person decides to create an NFT for his work, he has to 'mint' the NFT. Minting[88] means digitally representing a work which is then tokenized. This tokenization means uploading it to a specific platform or marketplace like Open Sea, Super Rare and Bored Ape Yacht Club (these marketplace offers the sale and purchase of NFTs) and then issuance of token for its authenticity.

[86] ERC20 Token Standard, https://ethereum.org/en/developers/docs/standards/tokens/erc-20/ (last visited 5th October 2023).
[87] Ethereum Improvement Proposals, https://eips.ethereum.org/EIPS/eip-721(last visited 5th October 2023).
[88] Open Sea https://opensea.io/learn/what-is-minting-nft (last visited 6th October 2023).

Confusions and problems

Till now we can say that NFTs are mere representation of work and can never be considered as a new work. As they are just a mere representation of a work, they are likely to get copyright protection. Buyers think that when they buy an NFT they acquire all the associated rights with the work, but they are only buying the metadata associate with the work and not the work itself. Due to the large amount spent on the NFTs it is assumed that the buyer has itself bought the original piece but the money was spent on the metadata file, a string of numbers and letters of uncertain artistic value.

NFT as a blockchain can be used as a set of ownership claims, which can be further used for verifying and authenticating. If any person with enough technical knowledge and appropriate tools to generate a token and that token is like that of the authors then this means that there can be an erroneous claim of ownership.
A written code of an agreement between parties that is stored in a blockchain is a smart contract. License can be given for an NFT, but cryptographic smart contract license on form of NFT are not produced by most of the NFT platforms.

A quick scan of NFT markets reveals a wide variety of illegal listings. A few artists have gone to social media to express their displeasure about their works being issued as NFTs without their consent. Even pieces at the Rijksmuseum in Amsterdam's public domain have been transformed into an NFT. The elimination of the token from the auction marketplace has often been the method used to resolve the majority of claimed infringement cases outside of the courts. But one of these instances will eventually get to court, and then the issue of whether the NFT is truly violating the rights of a copyright holder will come up.

Example of this was a case that centers on a cartoon image of a fat tiger receiving a vaccination injection that was one of several pieces of art from the well-known cartoon series "Fat Tiger" that a Chinese artist posted on Weibo, China's most popular social media platform. Shenzhen Qice Diechu Cultural Creativity Co., Ltd. (the plaintiff), the owner of the "Fat Tiger" illustration series' copyrights, filed a lawsuit against Hangzhou Yuanyuzhou Technology Co., Ltd. (the defendant), which controls the Bigverse NFT marketplace, a platform for exchanging digital art. The plaintiff discovered on Bigverse that a user had produced and sold an NFT digital work that was like the in question copyrighted work and even had the artist's Weibo watermark. In Hangzhou Internet Court, the plaintiff therefore filed a lawsuit against the defendant for contributing to copyright infringement. The court held the NFT platform liable for copyright infringement.
We are aware that the production of codes on a blockchain network (such as Ethereum, EOS, Bitcoin Cash, and others) that provides a special ID to the digital asset together with extra fields for ownership information

constitutes the actual minting process. Anyone who gets access to any of these platforms can thus create a new NFT. The digital asset can be marketed or otherwise made available for purchase to purchasers after the NFT has been generated. In the same way that physical wallets are made to hold traditional currencies, buyers of NFTs must have digital wallets that can receive and store such digital assets. They can buy NFTs on platforms like OpenSea, Mintable, and Rarible using cryptocurrencies which can be purchased using credit card payment. Let us consider the example of Andy Warhol Foundation for the Visual Arts has accomplished by producing five digital works that were restored from Andy Warhol's floppy discs and that were initially made in the 1980s on his Commodore Amiga computer. The five NFTs were made with the idea of being auctioned off; no further NFTs were intended to be made. In May 2021, the combined sales of these five NFTs exceeded $3.3 million. The Andy Warhol Museum received annual financing from the sales, while artists who had been affected by COVID-19 received emergency assistance. The demand for "minting" of "NFTs" connected to creative works is growing (NFTs also get minted for projects such as music, gaming assets, and many sorts of videography), and this phenomenon unavoidably raises difficulties about ownership enforcement as well as copyright ownership.

Copyright and its role in NFT

NFTs are a new and unfamiliar kind of art, but copyright law will regard them exactly as many other conventional works of art. A copyright for an artist's new work of art is immediately granted to them. Upon producing a copyrighted work, a copyright owner instantly acquires several rights. Exclusive rights to reproduce, create derivative works, and disseminate copies of the work belong to the copyright owner. Because the "creation of an NFT could be categorized as an imitation or even as a copy of the original work," a copyright owner possesses the exclusive authority to create an NFT according to an original work of art. Let us say, for illustration, that I have the copyright on a well-known work of art. I am given the exclusive authority to duplicate, create derivative works from, and distribute duplicates of the work because I hold the copyright. Like how I would have been able to make and sell a reproduction of the original piece of art, I can build an NFT based on the artwork and sell it without giving up the rights to the original. Since my rights as an artist are exclusive, I may also prevent others from violating them by filing a lawsuit over copyright infringement if someone produces a piece of art, such as an NFT, that violates or copies my copyrighted work.

We know that anything that can be digitalized can be an NFT and the original work of an NFT is only need for the Token ID and contract address, so NFTs has little to do with copyright. But there are a lot of art work that are traded as NFTs are protected under copyright law. This creates a question as to what kind of protection are we getting while buying an NFT. We all know that the author (Section 2(d) of Copyright Act, 1957) of the work is the one who has created the work itself. An author can be the sole owner unless he has

co-authored with another person or the work is created under employment or is commission by other person. Section 14 of Copyright Act, 1957 specifies the provision of the exclusive rights provided to owner of the copyright work. This includes the right to mint the NFT of a work by the way of licensing. For minting, the right of reproduction and communication of the work to public must be possessed by the person, without this he will be infringing the copyright. Therefore, for minting an NFT of a work one should either be an author of the work or obtain the copyright over the work or obtain the specific rights to mint the NFT. NFTs are mostly sold by auction where the seller feels that there is a great demand for their NFTs so they list it on a marketplace for a specific price and can sell it to the buyer on that price. The transaction of NFTs is usually done through Ethereum Cryptocurrency as most of the NFTs are built on Ethereum Blockchain. The seller can sell its NFT for a higher prize as the value of that NFT increases if the NFT if of extremely rare work but, the value of it can only be determined by its demand and hype in the market. When a buyer buys an NFT then it is thought that he got all its accompanying rights and its underlying work of art but they are not buying the work itself rather they are only buying its metadata associated with it. On the Purchase of an NFT the buyer acquires the Non-exclusive license for displaying the NFT in their e-wallet only, this also means that they cannot commercialize the right of displaying the work in any third-party website/product but can use it for personal purpose only. This is because there is no transfer of copyright. Under section 14 (c) of Copyright Act, 1957 the seller can transfer all the copyright of his artistic work. 'Smart Contract' is an agreement, written in code between the parties during the sale of an NFT and stored in a blockchain. This creates a digital signature and helps in tracking the ownership of NFT. License id there in copyright and so the smart contract for the NFT. As the Smart Contract is difficult to edit or standardize, it becomes difficult for the parties to encode its terms and conditions. In Indian laws Section 19 (1) of Copyright Act, 1957 does not permit underlying works of NFT to the buyer by Smart Contract. Most NFTs only conveys the license to the buyer who becomes the owner by buying it. There had been lot of instances where someone had generated an NFT that does not belong to them and by committing the they have infringed the rights of the owner of that copyrighted work. For infringement to take place firstly, the infringer has taken the advantage of the exclusive rights of the author. Secondly, the NFT should be directly copied from the original work and lastly, the work is wholly or substantial part of it is copied. These three points will further help in future. There is a very casual connection between a token and work in case of an NFT which infringes the right to communication to the public, so as it is not a substantial reproduction of code but rather it is a simple code it is not infringing those rights.

In case of Digital Collectibles Pte. Ltd. and Ors. vs Galactus Funware Technology Private Limited and Anr[89]. 'Rario' is a digital collectibles platform built on NFTs that is owned and run by Digital Collectibles

[89] *Digital Collectibles Pte. Ltd. and Ors. vs Galactus Funware Technology Private Limited and Anr,* CS(COMM) 108/2023

Pte. Ltd. The marketplace makes it easier to buy, sell, and trade legally licensed DPCs with cricketers on them. They gave Digital Collectibles Pte. Ltd. an exclusive licence to use their names and pictures on the Rario platform because they are well-known cricket players. These DPCs, which use Rario's private blockchain, include the names, images, and other personality attributes of cricket players and can be purchased, sold, or exchanged for actual money. The popularity and reputation of the individual cricketers have an impact on both supply and demand for each DPC, which in turn affects the cost of each DPC. The owner and operator of the mobile application "Striker," which is listed on the MPL, is another defendant. Galactus Funware Technology Private Limited is an owner and owner of the online fantasy sports platform, MPL. Users of Striker may trade, buy, and sell DPCs much like those of Rario, and Striker uses the technology of NFT to authenticate DPCs on the platform it operates on. The defendants were sued in February 2023 at the Delhi High Court for utilizing players' names, photos, and other characteristics on the platforms they operate without the players' consent or license. In the case, the Delhi High Court acknowledged that the criteria for establishing whether the right to publicity has been violated are consistent with the rules and principles of the tort of passing off. It is clearly obvious that using a celebrity's name, likeness, or other characteristic in a way that might lead to confusion is against their right to privacy. This order highlights the necessity to strike a balance between justly implementing the right to publicity and respecting the fundamental right to freedom of speech and expression while also giving Indian law on the right to publicity more clarity. In addition, the court's ruling could affect how Indian courts perceive the integration of cutting-edge and developing technology into our daily lives. It is yet unclear how the Indian judiciary would follow this pattern of interacting with cutting-edge notions because this area of law is still being developed.

Conclusion

NFTs and copyright will inevitably interact in practice, however most disagreements will be resolved at the platform's level. By promoting the presence of a place where artists may sell the tokens they have created, the market is already serving as a gatekeeper, reducing potential infringement. The NFT area may still see a significant number of copyright conflicts, though, due to the structure of the market and the motivation for high profits. It shall be intriguing to observe how ownership claims and disputes play out in the early stages of a potentially revolutionary technology.

Still there exists no law regulating specifically for the NFT marketplace. If a way to interpret the smart contracts for the buyer and certain terms and conditions are setup for the use of NFT is laid down it will be very helpful. This will reduce the risk of Copyright infringement.

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INTELLECTUAL PROPERTY IMPLICATION OF AI GENERATED CREATIONS

-Agrima Pandey[90]

Abstract

As artificial intelligence (AI) becomes a central role in the production of novel works, the intellectual property environment is going through a significant upheaval. This article examines the complex web of intellectual property implications raised by works produced by AI. It explores the subtleties of AI-driven innovations and their patentability, the difficult issues surrounding inventorship, and the changing ethical and legal parameters that govern this shifting environment.

Keywords: artificial intelligence, intellectual property implications, innovation, patentability, inventorship.

Introduction

We find ourselves on the verge of an enormous upheaval in a time when technology has dominated everything. Artificial intelligence (AI) has rewritten the very rules of creativity in this place, amidst the frenzy of development. It has bravely stepped into the spotlight and assumed the position of creators rather than passively accepting the job of assistants. It do this by testing the limits of human inventiveness and leading us on a deep tour of unexplored territory.

Our journey starts with the birth of artificial intelligence (AI) as an artist—a being that not only comprehends but also produces innovations and creations with a flair that transcends convention. Previously painted entirely by humans, the canvas of invention today showcases the artistic brilliance of AI. The distinctions between creator and creation, which were formerly clearly drawn, are blurred as we watch this evolution take place into a mesmerizing dance between humans and machines.

The ground of intellectual property, where the time-tested tenets of inventorship, ownership, and authorship have long reigned supreme, sits at the centre of our investigation. Now that AI is actively involved in the

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creative process, we are presented with a compelling story that calls into question current legal norms and urges us to reframe what innovation actually is.

The importance of the subject at hand becomes increasingly clear as we keep going because of the rapidly developing field of AI-powered creativity. AI's creative brilliance knows no bounds, from breaking new ground in science and technology to producing works of art and literary wonders. The distinction between the creator and the created, which was previously obvious in this evolutionary narrative, is now a fascinating interaction between human inventiveness and technological prowess.

Beyond the limits of ingenuity and invention, however, the ethereal world of ethics begs us to reflect. Deep questions are on the horizon as AI becomes more creative in its endeavours. We explore how to manage this technical marvel responsibly, the effects on human work and expression, and the moral code that governs our relationships with these sentient systems.

Our expedition sets out on new ground, a world of intellectual property in which the roles of creator, owner, and author experience significant change. They become fluid notions that are fashioned by the subtle dance between human inventiveness and the power of machines and are no longer constrained by traditional rules. As we make progress through this area, we solve puzzles, deal with moral conundrums, and chart a course that balances the traditional notions of intellectual property with the limitless possibilities of AI.
The ideas of inventorship and authorship have served as the sentinel foundations of intellectual property rights in the constantly changing world of innovation. These values have shaped how we perceive creativity and innovation because they are so firmly ingrained in our moral and legal systems. However, the once-clear concepts of invention and authorship today find themselves cloaked in doubt as artificial intelligence (AI) leave its transformational mark on this environment.

Historically, authorship and invention have stood for creativity and originality in humankind. The person who came up with an inventive idea is known as the inventor. People frequently conflate authorship with patent inventorship, or they presume they are synonymous. However, they are separate ideas. On the other side, an author is praised for having the original idea that led to a literary or creative masterpiece. The conventional wisdom that creativity and invention are the results of human effort, vision, and intellect is reflected in these concepts.

In the modern narrative, AI shows itself to be a strong collaborator—a partner that not only offers assistance but also independently produces new ideas and artistic creations. AI's creative portfolio exceeds the limits

of human imagination, from technological and scientific advances to the creation of mind-boggling paintings and resonant symphonies. The question that then emerges is whether we should modify these conventional definitions to include our AI colleagues as co-creators or whether we should redefine inventorship and authorship in this new era?

The rise of AI as a creative force opens the door to a slew of ethical and legal problems. Who should be given the credit for inventions that AI systems independently create? Who is the true inventor —the programmer who created it, the company that owns the AI, or the AI itself? The answers to these concerns are still obscured by the law because copyright and patent laws were created when the idea of machines as creators was still in its infancy.

History

The Act VI of 1856[91], which contained India's first patent law, was later abolished by the Act IX of 1857 since it was passed without the British Crown's consent. Another piece of legislation for the granting of "exclusive privilege" was introduced in 1859. The act in question is referred to as Act XV of 1859[92]. The previous law is modified in a few ways by this legislation, including the restriction of exclusive privileges to valuable discoveries, the expansion of the priority period from six to twelve months, and the exclusion of importers from the category of investors. The Act of 1859 was combined in 1872 to offer protection for designs. Under Act XIII of 1872[93], which was later amended in 1883, the law was titled "The Patterns and Designs Protection Act" and became effective that year.

This law was changed once more in 1888 after remaining in effect for 30 years. All of the earlier legislation were repealed by the Indian Patent and Design Act of 1911[94]. In 1972, the current Patent Act, 1970[95], which further amended and combined the prior law dealing to patents in India, went into effect. The Patents (Amendment) Act, 2005[96] further updated this law by extending the application of product patents to all or any technological disciplines, including those involving food, pharmaceuticals, chemicals, and

[91] Indian Penal Code, 1860, https://www.indiacode.nic.in/repealed-act/repealed_act_documents/A1856-6.pdf (Accessed November 15, 2022).
[92] Indian Penal Code, 1859, https://www.indiacode.nic.in/repealed-act/repealed_act_documents/A1859-15.pdf (Accessed October 15, 2023).
[93] The Indian Evidence Act, 1872, https://www.indiacode.nic.in/repealed-act/repealed_act_documents/A1872-13.pdf (Accessed October 15, 2023).
[94] The Indian Treasure Trove Act, 1878, https://www.indiacode.nic.in/repealed-act/repealed_act_documents/A1911-2.pdf (Accessed October 15, 2023).
[95] The Patents Act, 1970, https://ipindia.gov.in/writereaddata/Portal/IPOAct/1_31_1_patent-act-1970-11march2015.pdf (Accessed October 15, 2023).
[96] The Patents (Amendment) Act, 2005, https://ipindia.gov.in/writereaddata/Portal/IPOAct/1_69_1_patent_2005.pdf (Accessed October 15, 2023).

microorganisms. Provisions relating to Exclusive Marketing Rights (EMRs) were deleted by this amendment, but pre-grant and post-grant opposition as well as the ability to award a compulsory license were added.

The main goal of the patent legislation is to support scientific research. Patents are granted for original creations and models that aid in the nation's continued development. Patents promote innovation as well. Numerous worldwide events have enriched the history of patent law. In this sense, there have been several agreements and accords. Additionally, it is crucial for us to go forward with the world community's approval of the patent laws since when they were first implemented in India, it was still a British colony. India enacted its statute later in 1970. Patent laws were first established in the USA in 1790. More patent laws had been developed internationally than in India.

The main goals of international treaties on intellectual property rights have been to establish global minimum standards for the protection of intellectual property and to prohibit discrimination against foreign right holders. This is the main justification for the significance of these treaties and agreements. The Indian Constitution grants the Union the power to conclude treaties and accords with foreign nations and to carry out treaties, agreements, and conventions with such nations under Schedule VII Entry 14 of List I[97].

The Statute of Ann[98] was drafted by the British congress in 1710. It marked the birth of the narrative. It's seen as a turning point in the development of patent law. It marked the dawn of the narrative. It's seen as a turning point in the development of patent law. The British parliament acknowledged copyright regulation by the authorities and not by private persons for the first time. Due to the need for major patentee rights protection as a result of the industrial revolution, which was taking place at the time.

US Patent Act (1790)[99] – President George Washington inked the legislation on April 10, 1790. It was a turning point in the development of patent law for a number of reasons. for the very first time, patents were recognized as an inventor's right rather than a privilege bestowed by a higher authority. The US Patent Act of 1790 established rigorous requirements for concepts that sought to obtain patent rights by providing a method to assess patents.

Paris Convention (1883)[100]- The earliest and oldest international pact governing intellectual property is the Paris convention. Convention in Paris is also known as the Paris Convention on Industrial Property. The World Intellectual Property Organization oversees this treaty. Patents, utility models, industrial designs,

[97] International Treaties and Agreements: Practice of India (https://www.mea.gov.in/Images/pdf1/S7.pdf) (Accessed October 15, 2023).
[98] Anne: The Statute of Anne (1710)", Copyright History, https://www.copyrighthistory.com/anne.html (Accessed October 15, 2023).
[99] Patent Act of 1790, https://www.ipmall.info/sites/default/files/hosted_resources/lipa/patents/Patent_Act_of_1790.pdf (Accessed October 15, 2023).
[100] Paris Convention for the Protection of Industrial Property 1883, https://www.unido.org/sites/default/files/2014-04/Paris_Convention_0.pdf (Accessed October 15, 2023).

trademarks, etc. are all protected by this convention. The Paris Convention, which is regarded as historical in the context of intellectual property rights, made an integrated effort to defend Industrial Property rights. It not only established the member states' rights to priority but also calmed the coordinated effort to defend patent and intellectual property rights.

Bern Convention 1886[101]- The basic tenet of this agreement was to safeguard and protect creative creations. The Bern Convention of 1886 gave the original authors of the work rights over their creations, according to the WIPO. Today, all other creators own the right over their work, which include authors, poets, artist, musician etc. Now they hold the power on the way their works will be utilized. Only they can determine what terms will allow them to use their work.

World Intellectual Property Organization: A global platform for intellectual property (IP) services, policy, information and cooperation. WIPO is a self- supporting association of the UN with 193- member countries. The ambition of WIPO is to encourage the creation of an effective, practical, and effective transnational system of intellectual property rights that will foster global invention and creativity for the good of all people. The WIPO Convention founded WIPO in 1967. This agreement was ratified in 1970 after being signed in Stockholm on July 14, 1967.

AI as a creative force: Redefining innovation and creativity

In the current digital period, artificial intelligence (AI) has surfaced as a crucial technology that has a significant influence on numerous aspects of life, including creativity and invention. The world around us is changing snappily due to artificial intelligence (AI), and creativity may be no exception. AI has been employed in recent times to produce a wide range of creative works, from music and art, to scientific discoveries and profitable strategies.

Automation of formerly manual work is one of the most significant ways that AI is affecting creativity. This enables creative people to concentrate on more inventive and strategic work. AI may be used, for case, to come up with content ideas, gather information, and make prototypes. This may help artists save a lot of time and trouble, enabling them to explore new ideas and induce better work.

AI is utilized to create new ideas and concepts in addition to automating chores. Several approaches, including machine education, deep learning, and natural language processing, are used to achieve this. AI may be used, for case, to examine enormous databases of textbook, music, or photos in order to spot patterns and trends. also, with this knowledge, one might come up with fresh conceptions for cultural endeavours.

[101] Berne Convention for the Protection of Literary and Artistic Works, https://www.wipo.int/edocs/lexdocs/treaties/en/berne/trt_berne_001en.pdf (Accessed October 15, 2023).

AI is also being employed in creative collaboration with people. There are several approaches to accomplish this, including using co-creation tools, virtual reality, and augmented reality. AI may, for case, help designers in creating 3D models of their creations or musicians in creating new musical compositions. Although AI in creative endeavours is still in its infancy, it has the power to fundamentally alter how humans create. Artificial intelligence (AI) may assist creative workers in producing higher-quality work and exploring new possibilities by automating activities, coming up with ideas, and working with humans.

Current applications of AI in the creative industries:

Art: New types of art, including paintings, sculptures, and music, are being developed using AI. For instance, Deep Dream[102], an AI-powered application, generates abstract visuals by analysing enormous collections of photos and finding patterns[103].

Music: AI is being used to compose new songs, as well as remix and modify music that already exists. For instance, the AI-powered application Jukebox[104] generates original music by examining enormous song files and looking for trends.

Literature: New literary genres including poems, short tales, and essays are being created by AI. For instance, the AI-powered application GPT-3[105] is capable of producing realistic and cohesive writing, such as plays, poetry, and news stories.

Television and film: AI is being used to write screenplays, direct movies, and produce special effects. For instance, Industrial Light & Magic[106], a software driven by AI, was utilized to produce the visual effects for the movie Avatar.

These are but a handful of the numerous applications of AI that are now found in the creative sectors. AI will probably change the way humans produce in much more profound ways as it advances.

The application of artificial intelligence (AI) to the creative and innovative processes has raised the bar for patent law's level of complexity. The once simple principles of inventorship and ownership issues are today clouded by controversy and uncertainty. Who may be acknowledged as the inventor and legitimate owner

[102] Khwab Kalra, DeepDream - KHWAB KALRA, Medium (July 20, 2023), https://medium.com/@khwabkalra1/deepdream-51f42802a4db.

[103] Lauren Goode, What AI-Generated Art Really Means for Human Creativity, WIRED (Nov. 17, 2022), https://www.wired.com/story/picture-limitless-creativity-ai-image-generators/.

[104] Paige Leskin, This AI is creating some surprisingly good bops based on music by Katy Perry and Kanye West — listen to some of the best, BusinessInsider India (May 5, 2020), https://www.businessinsider.in/tech/news/this-ai-is-creating-some-surprisingly-good-bops-based-on-music-by-katy-perry-and-kanye-west-x2014-listen-to-some-of-the-best/slidelist/75544310.cms.

[105] Bernard Marr, What Is GPT-3 And Why Is It Revolutionizing Artificial Intelligence? (Oct. 5, 2020), https://www.forbes.com/sites/bernardmarr/2020/10/05/what-is-gpt-3-and-why-is-it-revolutionizing-artificial-intelligence/?sh=34e0fa59481a.

[106] ILM steps in to help finish 'Avatar' visual effects, CNET (Dec. 19, 2009), https://www.cnet.com/culture/ilm-steps-in-to-help-finish-avatar-visual-effects/.

of AI-generated things becomes a crucial concern as AI plays a more active part in the generation of innovations.

Owner or Programmer? The curious conundrum

If AI is not recognized as an inventor, a complex web of ownership concerns arises, focusing attention on the creator or owner of the AI system. This conundrum results from the fact that AI is fundamentally a tool designed, educated, and managed by humans. It is, in essence, a product of human creativity. This makes us wonder if the owner or the programmer should assert their claim to inventorship rights[107].

But there are certain complications with this idea. The AI system itself acts freely, developing solutions based on its algorithms and data processing, even while the programmer or owner might be considered as supporting AI's creative capacity. This distinction between human engagement and autonomous creative activities by AI raises concerns about the level of human involvement necessary for invention. The distinction between an invention and a tool gets increasingly hazy.

Rethinking ownership norms in the age of AI

There is a ground-breaking argument that AI should be acknowledged as a creator and thus be given ownership rights[108]. This viewpoint is in sharp contrast to traditional ownership standards, which traditionally have only acknowledged human inventors as legitimate intellectual property owners. This perspective pushes us to think about AI as a separate entity that not only generates but also asserts ownership over what it produces.

The consequences of AI acting as a creative go far beyond the purview of intellectual property. Redefining authorship in the domains of art, music, literature, and other creative endeavours, it also redefines the dynamic between humans and machines in the creative process. This reassessment forces us to consider what it means for a machine to have creative autonomy and if it is possible for it to have legal ownership rights.

Human Control: Tipping the Scales

The idea of human monitoring makes identifying the creator and proprietor of ideas produced by AI much more difficult. A key issue in the current discussion is the degree of human involvement or control in the creative process. How much human involvement is necessary for an AI-generated innovation to be

[107] Who Owns an AI-generated Invention? Bird & Bird (Dec. 5, 2019), https://twobirds.com/en/insights/2019/global/who-owns-an-ai-generated-invention.

[108] Blurring the lines: how AI is redefining artistic ownership and copyright, Discover Artificial Intelligence (Nov. 20, 2023), https://link.springer.com/article/10.1007/s44163-023-00088-y.

recognized as having a human creator?[109]

There are many unanswered questions about the delicate balance between autonomous creativity in AI and human direction or control. Determining whether to assign inventorship rights to the AI, its programmer, or owner depends on this balancing. It also makes us reevaluate how we think about creative cooperation and the complex interplay between human creativity and technological prowess[110]

Patentability of AI inventions in India

Novelty

The need of uniqueness is principally covered in Sections 2(1)(l)[111] and 25[112] of the Indian Patents Act, 1970.

Section 2(I) - "New Invention" Definition: The Patents Act's definition of a "new invention" is given in this section. It indicates that an invention is deemed fresh or innovative if it hasn't been utilized in India or anywhere else prior to the date the patent application was filed, nor has it been predicted by publication. The foundation for comprehending what qualifies as a novel invention for the purposes of patentability is laid forth in this section. Innovation is a crucial factor in assessing an invention's possibility for patent protection. A novelty or new invention is defined as "no invention or technology published in any document before the date of filing of a patent application, anywhere in the country or the world", "The complete specification, that is, the subject matter has not fallen into the public domain or is not part of state of the art".

Section 25[113] - It deals with the publishing and examination of patent applications. The uniqueness of an invention is determined throughout the evaluation process. The Indian Patent Office reviews applications after they are submitted to ascertain if an invention satisfies the requirements for patentability, including novelty. The patent application can be turned down if it's determined that the invention is not innovative.

The enormous amount of pre-existing data and previous art that AI systems may access and evaluate is one of the major disputes or issues linked to patenting AI technologies, specifically regarding the novelty criterion. AI systems are able to analyse huge information and find patterns and answers, especially those driven by machine learning and deep learning[114]. Based on data and knowledge already in existence, AI can provide breakthroughs that are patentable.

[109] Artificial intelligence and copyright, (May 3, 2017), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.
[110] Creativity in crisis: are the creations of artificial intelligence worth protecting? (Aug. 12, 2021), https://www.jipitec.eu/issues/jipitec-12-3-2021/5352.
[111] Indian Patents Act, 1970, § 2(1)(l).
[112] Indian Patents Act, 1970, § 25.
[113] Indian Patents Act, 1970, § 25.
[114] The Impact Of Artificial Intelligence In Patent Law, https://www.legalserviceindia.com/legal/article-14289-the-impact-of-artificial-intelligence-in-patent-law.html

An invention must not have been utilized or disclosed to the public prior to the filing date of the patent application in order to qualify as new for patent protection. However, because they frequently rely on evaluating pre-existing data or expertise, AI-generated creations may face challenges in terms of originality.[115]

Some artificial intelligence technologies, such as neural networks and deep learning models, can become incredibly complex and unintelligible. One cannot accurately decide whether or not an innovation is really novel: one simply does not know how the AI has generated its creation/ decision.[116] Another disagreement concerns whether the creator of the AI system should be regarded as the AI system itself or as the human operator of the AI system.[117] The involvement of AI systems affects the traditional patent law attribution of discoveries to human inventors.

Inventive steps

"Inventive step" is defined under Section 2(1) (ja)[118] of the Indian Patents Act, 1970. When analysing the patentability of AI-related innovations, the notion of inventive step is essential. The application of Section 2(1) (ja) to the patentability of AI innovations is as follows:

Technical Advance: For an invention, particularly those relating to AI, to satisfy the inventive step criterion, it must reflect a technical advance above the current level of knowledge. This means that in the context of AI, the innovation should show a non-obvious technological advancement or resolution.[119]

Economic Significance: An AI-related invention should have economic importance in addition to being technically advanced. The need for a useful and practical application is further emphasized by the need that it provides practical advantages or have economic worth.

Non- Obviousness: Inventions, especially those utilizing AI, must not be clear to a person with the requisite expertise. It should entail an original or imaginative step beyond what is currently known in the field.

The evaluation of creative step can be particularly significant in the context of AI inventions. It's critical to show that the innovation is more than just a logical amalgamation of already existing technology or processes since AI technologies frequently entail complicated algorithms, data analysis, and machine learning. AI-related innovations must demonstrate how they offer a novel and cutting-edge fix to a problem.

[115] Student, Ravid.Liu.39.6.5, (July 9, 2018), http://cardozolawreview.com/wp-content/uploads/2018/08/RAVID.LIU_.39.6.5-1.pdf.
[116] Tammy Xu, AI Makes Decisions We Don't Understand. That's a Problem., Built In (July 19, 2021), https://builtin.com/artificial-intelligence/ai-right-explanation.
[117] Nitant Narang, Patently Unpatentable: Can AI Be Considered an Inventor? Relativity Blog https://www.relativity.com/blog/patently-unpatentable-can-ai-be-considered-an-inventor/.
[118] Indian Patents Act, 1970, § 2(1)(ja).
[119] Sonam Singh, What is Inventive Step: An Indian Perspective | HavingIP, HavingIP HavingIP (Oct. 23, 2022), https://havingip.com/what-is-inventive-step-an-indian-perspective-havingip/.

Finding the right balance between recognizing AI's capacity for innovation and ensuring that those innovations actually represent non-obvious advancements is one of the major conflicts and challenges in patenting AI inventions, particularly with regard to the requirement of inventive step (non-obviousness).
Massive datasets may be processed and analysed to find patterns, connections, and potential solutions using AI systems, particularly machine learning and deep learning models. This capacity for analysis can result in the development of original solutions.

An invention must not be obvious to a person competent in the relevant area in order to meet the inventive step criteria for patentability. Nevertheless, there is room for debate with regard to whether the suggested solutions by AI system are novel and how much their basis is in already available information.
However, with the use of artificial intelligence, specifically neural networks and deep learning models, decision making could become complex than humans comprehend. It can be difficult to determine the innovative step since AI systems might be opaque, making it difficult to grasp how an AI came up with a certain innovation.[120]

Analysing the value of human contribution to the creative process can be challenging. AI systems may create innovations on their own in some situations or in conjunction with human operators in others. It might be difficult to assess the degree of human involvement and how it affects the innovative step.[121]
While avoiding the issuance of patents for insignificant, gradual, or obvious advances, it is crucial to guarantee that AI patents protect genuine inventions and developments that benefit society.

Industrial Applicability: Section 2(1) (ac)[122] defines the term "invention" and discusses the need for industrial application in some detail. It asserts that if an innovation can be produced or employed in any industry, it is said to be capable of industrial application. The term "invention" is used to refer to any novel and useful technique, device, production, or composition of materials, as well as any novel and advantageous improvement thereto. The phrase "capable of industrial application" denotes that the innovation should have real-world applications in a business or industrial setting. It ought to be more than simply a theoretical idea; it ought to be practical and beneficial in everyday situations.[123]

This section essentially emphasizes the requirement that an invention serve a useful and defined function in

[120] Dave Gershgorn, We don't understand how AI make most decisions, so now algorithms are explaining themselves, (Dec. 20, 2016), https://qz.com/865357/we-dont-understand-how-ai-make-most-decisions-so-now-algorithms-are-explaining-themselves.
[121] https://academic.oup.com/grurint/article/69/5/443/5854752.
[122] Indian Patents Act, 1970, § 2(1)(ac).
[123] https://law.berkeley.edu/files/Duffy_paper.pdf.

industry or trade. In terms of patentability, an innovation that cannot be used in industry could not be eligible for patent protection making sure that AI-generated discoveries have specific and useful applications in industry or commerce is one of the major issues and problems associated with patenting AI inventions, particularly with regard to the necessity of industrial applicability.

Based on data analysis, AI, in particular machine learning and deep learning models, may produce conceptual answers. Though theoretically novel, these methods might not necessarily have an immediate, useful use in the industrial or commercial setting.

Certain AI algorithms may be quite specialized and created for certain tasks or areas. The immediate industrial application of the answers produced by AI systems to those particular jobs may be constrained by this specialization.

It can be difficult and expensive to incorporate AI-generated innovations into current industrial or commercial operations. It could need more money, a better technical foundation, and modified workflows.

AI-generated inventions should be both industrially applicable and have the potential to be profitable. They ought to provide useful advantages, address certain issues, and be in demand on the market.

AI developments must adhere to industry norms and standards, notably in sectors like healthcare and finance. For AI-generated solutions to be applicable in the industrial setting, it is crucial that they satisfy these parameters.

Subject Matter: Identifying whether the invention corresponds to a patent subject matter is the most crucial factor. The Patents Act lists non-patentable subject matter in Sections 3[124] and 4[125]. The invention is a topic for a patent unless it falls under one of the provisions of the Sections.

Determining the limits of what may be patented and separating patentable from non-patentable components of AI technology is one of the major controversies and obstacles in patenting AI inventions, particularly with regard to the subject matter.Deep learning and machine learning in particular include complicated algorithms and models that may have several parts and functionalities. It might be difficult to decide which features of an AI system are patentable and which are not.

Although AI mainly relies on software and algorithms, patent law frequently disallows the patenting of computer programs, mathematical techniques, and abstract notions. When determining the patentability of

[124] Indian Patents Act, 1970, § 3.
[125] Indian Patents Act, 1970, § 4.

AI-related software and algorithms, this raises a dispute.Patent law normally places more of an emphasis on defending functional parts of innovations than non-functional or abstract ideas. It can be difficult to differentiate functional elements from abstract concepts in AI.[126] Data-driven insights are frequently used by AI to produce solutions. It might be difficult to tell the difference between simple data analysis and truly unique processes that need patent protection.

A further level of complexity develops when comparing human and artificial intelligence inventorship. Should the AI system's human operators or programmers be given credit as the inventors, or should the AI system itself? The decision may have an effect on the patent's subject matter.

Inventors who aren't artificial beings (Natural Persons)

In the context of AI-generated inventions, particularly when AI systems independently produce innovations, the concept of inventorship has grown complex and is still developing.

Natural beings are traditionally considered to be the inventors under patent rules, honouring their creative and intellectual contributions to breakthroughs.[127]

Inventions have traditionally been attributed to natural beings, such as scientists, engineers, researchers, or inventors.

AI as Tool:

The use of AI technology is frequently seen as a tool or instrument that may facilitate and improve the creative process[128]. In this instance, a normal human uses the AI system as a tool to assist in the creation.[129]

AI as a Creative Entity:

Some arguments and points of view contend that AI, especially sophisticated machine learning systems and neural networks, can display some degree of creativity when coming up with answers, designs, or novel ideas.[130]

The question of whether AI systems may be regarded as independent creative creatures has been debated in light of AI's capacity to analyse large datasets, spot patterns, and suggest fresh solutions.

Issues with Attribution:

When AI systems independently produce inventions without direct human involvement, a problem occurs.

[126] https://ttconsultants.com/drafting-patent-applications-for-ai-innovations-navigating-challenges-and-finding-solutions/.

[127] Inc.Com, https://www.inc.com/kit-eaton/only-natural-persons-can-patent-things-in-us-as-ruling-leaves-ai-inventors-out-in-digital-cold.html.

[128] David Bull1, Artificial intelligence in the creative industries: a review, Artificial Intelligence Review (July 4, 2023), https://link.springer.com/article/10.1007/s10462-021-10039-7.

[129] H. James Wilson, How Humans and AI Are Working Together in 1,500 Companies, (July 1, 2018), https://hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces.

[130] How Generative AI Is Redefining Creative Innovation, Venngage (Dec. 19, 2023), https://venngage.com/blog/how-generative-ai-is-redefining-creative-innovation/.

In these situations, it's unclear whether the human operator, the AI system, or another entity should be acknowledged as the creator.[131]

It's possible that traditional patent systems lack provisions that take into account the special inventorship dynamics connected to AI.

Ethical and Policy Considerations:

Beyond the legal implications, there are ethical and political issues surrounding the invention of AI. These factors include concerns about accountability, responsibility, and the effects of AI on human creativity and labor.

AI-Based Innovation: Patentable or Excluded

The first possibility is to deem AI-generated innovations ineligible for patent protection[132]. However, this route is fraught with difficulties and dangers. It requires a precise description of what an "AI invention" is. It would be difficult to define this, and there would be a lot of disagreements over whether some inventions fit this description. The primary motivation behind the patent system, which attempts to promote innovation by offering exclusive rights in exchange for disclosing ideas to the public, might be undermined by the development of disputes since it would add risks and expenses.[133]

Think about the possibility that AI plays a key role in the identification of novel pharmaceuticals that can treat diseases that would otherwise go undetected. Considerations that AI ideas are not patentable may deter pharmaceutical businesses and researchers from investing in AI-driven drug discovery, preventing potentially game-changing medical advances.

The second choice goes in a different direction. It claims that AI shouldn't make an otherwise patentable idea unpatentable on its own.[134] The innovative incentives that support the patent system's existence are protected by this strategy. However, it raises a maze of challenging issues about inventorship.

By granting patents for ideas produced by AI, researchers, businesses, and developers are strongly encouraged to invest in the technology and explore the almost endless potential of innovative AI-driven solutions. The possibility of obtaining exclusive rights to an AI breakthrough might spur innovation in a market that is competitive. It encourages people and businesses to devote considerable resources to AI research and development, promoting a culture of constant advancement and inquiry. The innovation

[131] Solidity Law, Legal Aspects of AI-Generated Virtual Beings: Intellectual Property, Rights, and Personhood, (June 19, 2023), https://www.linkedin.com/pulse/legal-aspects-ai-generated-virtual-beings-intellectual-property/.

[132] Taylor Wessing, Patenting AI-generated inventions – is patent law acting the luddite?, (Sept. 21, 2023), https://www.taylorwessing.com/en/insights-and-events/insights/2023/09/patenting-ai-generated-inventions.

[133] AZLawJet Editorial Board, Why Artificial Intelligence Shouldn’t Be a Patent Inventor - Arizona Law Journal of Emerging Technologies, Arizona Law Journal of Emerging Technologies - Uni (Apr. 29, 2022), https://azlawjet.com/2022/04/v5a5/.

[134] Nicol Turner Lee, Patents and AI inventions: Recent court rulings and broader policy questions, Brookings (Aug. 25, 2022), https://www.brookings.edu/articles/patents-and-ai-inventions-recent-court-rulings-and-broader-policy-questions/.

ecosystem flourishes as more participants enter the market, resulting in ground-breaking advancements in AI technology. The competition to patent AI discoveries pushes the boundaries of what is feasible and leads to major improvements in a variety of fields.

In addition to encouraging research, promoting patent protection for AI advancements also promotes economic growth on several fronts[135]. AI-driven discoveries act as economic growth's catalysts by establishing new markets, industries, and employment possibilities. When cutting-edge AI technologies are used in real-world settings, completely new industries are created.[136] For instance, AI-powered healthcare solutions may give rise to a growing sector that not only advances medicine but also creates jobs. Increased investments, new job creation, and technical innovation are all results of this economic diversification and expansion. Additionally, it raises a country's GDP, which contributes to general economic success.

An essential layer of protection for innovators' intellectual property is provided by the patent system. They may protect their AI-generated ideas, get exclusive rights, and manage their marketing thanks to this. This protection serves as a critical catalyst for further invention and goes beyond simple recognition. Inventors are more likely to devote their time, money, and creative energies to creating novel AI solutions when they are certain that their efforts will be protected from copying and unlawful use. The protection of intellectual property guarantees a conducive environment for more creativeness by inventors and innovators in the world of AI hence increasing inventiveness in the sphere of AI.

Sharing of information regarding the invention, which is one crucial aspect of a patent system, involves revealing everything about an invention. By facilitating public access to knowledge on AI-generated inventions, it greatly adds to the body of collective knowledge. Researchers, scientists, and engineers can benefit greatly from these releases. They share information that may be used to expand on current breakthroughs while providing insights into the most recent developments in AI. As AI-generated patents increase in number, they jointly expand the database of knowledge, increasing the state of the art in AI technology and enhancing society. It's a cycle where greater disclosure leads to more invention, which breeds advancement and enlightenment.

Conclusion

We have investigated the crucial issue of whether AI inventions need to be patentable in the context of the developing landscape of AI-generated works and intellectual property. The argument has many facets and

[135] Kristalina Georgieva, AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity., (Jan. 14, 2024), https://www.imf.org/en/Blogs/Articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humanity.

[136] Andrew Rapacke, The AI Patent Boom: Why companies are racing to protect their artificial intelligence IP, The Rapacke Law Group (Jan. 20, 2023), https://arapackelaw.com/patents/the-ai-patent-boom/.

is characterized by difficult problems and exciting prospects. Key conclusions and insights from our investigation have illuminated the future course.

The patent system and artificial intelligence are friends in advancing innovation, not rivals. A major incentive for academics, businesses, and developers to invest in AI technology is the ability to grant patents for ideas produced by AI. By developing new markets and industries, this investment fosters substantial breakthroughs across a number of sectors and promotes economic growth. Additionally, patent protection protects creators' intellectual property, encouraging them to keep extending the capabilities of AI. Researchers and technologists gain from the mandated disclosure requirement of the patent system, which progressively broadens society's body of collective knowledge.

Accepting AI-generated discoveries into the patent system does present some difficulties, though. AI-related invention determination raises complicated ethical and legal issues that require solutions. It is crucial to strike a compromise between the narrower objectives of innovation and social benefit and intellectual property protection.

In order to overcome these difficulties, it is recommended:

Clarifying Inventorship: Create precise rules for identifying the original creator of AI-generated inventions. This may entail thinking about the roles played by real people in creating the AI and their contributions to the creative process.

Examine possible revisions or additions to the intellectual property rules to account for the distinctive features of works produced by AI. New laws may achieve a balance between encouraging creativity and ensuring that AI technology is used responsibly.

Discuss the ethical ramifications of AI in the invention process in an open and considerate manner. Encourage discussion on the ethical application of AI technology and how it affects human creativity and labor. Collaboration Between Humans and AI: Highlight the significance of human and artificial intelligence (AI) cooperation. Understanding this symbiotic relationship is crucial since AI is a tool that increases human creativity.

Human ingenuity continues to be crucial in the era of technological advancement. AI works with humans as a partner, enhancing and magnifying their creativity. Together, humans and AI have the capacity to transform whole sectors, find new solutions to challenging issues, and build a future full of exciting possibilities. We can make sure that innovation flourishes, society gains, and human creativity keeps thriving by tackling the issues presented by AI-generated works within the framework of intellectual property.

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COMPULSORY LICENSING OF DRUGS: USES AND CHALLENGES

- Khushnoor Kaur[137]

Abstract

Molecules, which are byproducts of chemical reactions, were not patentable in India under the earlier patent regulations. This restriction, along with the restriction on mere admixtures resulting in aggregation of qualities in which the components do not exhibit any synergistic activity, severely limited the goods, which could be patented in India. Even if they had functional qualities, "actives" created through chemical synthesis were not as such patentable in India. In India, typical medicinal formulations in which the constituents act just as admixtures are likewise ineligible for patents. In these circumstances, just the process, or the way the product was made, was patentable.

The Indian patent regime lacked patent protection for products in pharmaceutical and agrochemical industries, this led to a significant development of the pharmaceuticals throughout the country as they soon became experts in reverse engineering of the product which was patentable everywhere in the world except India. With the coming of the new amendment in 2005 in regulation with signing the TRIPS agreement has put a stop on the same.

This was accompanied by introducing a new regime of compulsory licensing which gave the government right to grant license to another company to manufacture, which previously only resided with the patentee. This gave rise to a whole new set of problems. This paper mainly focuses on this new regime of compulsory licensing and its implications on the pharmaceutical industry. On one front it faces the opposition by pharmaceutical industry as it causes them huge losses whereas on the other hand the government remains adamant to grant the same on grounds of public morality to make the drug accessible to the poorest stratum.

Keywords - Compulsory Licensing, TRIPS, Product Patent, Section 3(d), Doha Declaration.

[137] Amity Law School, Amity University Rajasthan

Introduction

Patent is a right given by the government to an invention if it fulfils the basic criteria of novelty, non-obviousness and industrial use. It basically subjugates giving anyone a right to hold monopoly to regulate their market prices as the aforesaid invention cannot be replicated for the time period for which the patent is granted. Patent right prevents the other party from selling, making and using the invention[138]. Patent as such is regarded as one of the most used and abused kind of intellectual property[139]. It is specifically given as an incentive to reward innovators for their creation, but it cannot be overseen that it may be used by patent holder arbitrarily. The situation in case of patent of drugs differs to an extent that before any molecule could not be patented but only the process of procuring the ascertained new molecule could be. Thus, the Indian pharmaceuticals used to obtain patent for drugs that are already patented everywhere else in the world but not in India.

The position shifted completely with the signing of the TRIPS agreement which was formerly implemented in the year 2005. The Paris Convention contains provisions dealing with compulsory licenses[140], which were embodied in the TRIPS Agreement as well.[141]The TRIPS Agreement also lays set of detailed obligations in Article 31 that need to be complied with, if and compulsory licenses to patent are granted[142]."

Now product patents became legal and thus this practice was stopped but it also brought another provision for Compulsory Licensing to tackle monopoly of companies when the demand of a certain drug in the market is not met or cheap medication is required due to national medical emergency or other reasons.

Compulsory licensing is a legal mechanism that allows a government to grant permission to third parties to manufacture, use or sell a patented product without the consent of the patent owner. This mechanism is intended to balance the interests of patent holders and the public by ensuring that essential goods and services are available at affordable prices and that innovation is not hindered.

The use of compulsory licensing has become increasingly important in the context of public health, as it allows governments to override patent protections on pharmaceuticals and other medical technologies in

[138] Gupta R, "Compulsory licensing under TRIPS: How far it addresses public health concerns in developing nations" 15 *JIPR* 357(2010).

[139] Amanpreet Kaur, Rekha Chaturvedi, "Compulsory Licensing of Drugs and Pharmaceuticals: Issues and Dilemma" 20 *JIPR* 297 (2015).

[140] The Stockholm Act ,1967 (as amended in 1969) of the Paris Convention for the Protection Industrial Property, art. 5A.

[141] The TRIPS Agreement 1995, art. 2.1

[142] The TRIPS Agreement,1995, art. 31.

order to address health emergencies or provide access to life-saving treatments. However, the use of compulsory licensing is a complex issue with implications for both intellectual property law and public policy and requires careful consideration of the competing interests involved.

Methodology of pricing the medication

Now, whenever a new drug is introduced in the market it is subsequently priced by the pharmaceutical company exercising their monopoly right obtained through the grant of patent. The pricing, however, is affected through various factors. For example, a breakthrough drug in a particular field would be priced higher than another drug which is just a newer and effective version of the one already available to cure the disease. The companies take various factors into consideration while pricing the drug, as to get certain number of profits that can overcome the money spend on developing and researching for that drug. It essentially includes the cost incurred on the development of the drug, its manufacturing cost in an industry and the market value of the drug. Also considers various other factors like if the drug treats a general disease or is made for a rare disease. Another important factor at hand is the price of the competitive dug present in the market. Thus, companies try to extract the maximum price from the public to gain huge profits, thus the monopoly gained through patent can objectively lead to such high price d drugs that are not affordable by the poorer strata and in case of drugs for rare medicine not even by the middle classes depending on the nation's economy and distribution of wealth in the different categories. There are some drugs that are priced different in different countries according to the economy and buying capacity of the public in general. For instance, a 12.5 mg Sunitinib Malate capsule (used to treat renal cancer and GI tract cancer) costs INR 11,731 in India., INR 82,539 in Australia, INR 1,04,192 in New Zealand, and INR 92,035 in France[143].

The patent holders may yet abuse their patent right to generate profits by either non commercialization of the patented invention as to increase the benefit from their already marketed product present in the market. The reason being the newly made invention would yet again include investing large sums of money for production and manufacturing and lower benefits from the drugs in the market that are of the same nature. Another method it can devise is it can manufacture the product in wealthier countries and thus import it to the low- income based countries, making it inaccessible to a larger stratum of poorer generation. But in India the patentee must fill form no. 27 according to sec. 146(2) and rule 131(1) of the Indian Patent Act to provide information about the commercial usage of the patent within a time frame of 3 months at the end of the year[144].

[143] Government of India, Report: *Price Negotiation for Patented Drugs* (Ministry of Chemicals and Fertilizers, 2013).

[144] Nair G & Fernandez A, "Patent policies and provisions relating to pharmaceuticals in India" 19 *JIPR* 9 (2014).

TRIPS and introduction of compulsory licensing in the international scenario

The compulsory license, often referred to as a non-voluntary license, is a permit given by the government to a third party other than the patent holder that enables him to use or commercialize an invention without the patent holder's approval[145]. "The advantage of having such provisions involving the issuance of compulsory licenses in nation's statutes is that the threat posed by these provisions incites patent owners to give contractual licenses on fair conditions," claims Ladas[146]. When the TRIPS agreement was signed by the country, we came across a fairly new notion of compulsory Licensing, though the term is not explicitly used in the agreement but in certain Article 31, it clearly mentions that the government can pass on the right of the patented invention to either themselves or any organization allowed by the government without permission from the patent holder. The right was provided to keep a check on "use of invention on grounds of public morality"[147]. This right though can only be exercised in fulfilment of certain other conditions like applicant has supposedly already applied for the same; the patentee has not sufficiently commercialized the patent and other conditions. Compulsory licenses are typically non-exclusive and subject to payment of royalties to the patent holder[148].The article at the same time provides rights for the patentee so as not to completely denounce his rights. It has a provision for providing necessary remittance to the patentee *in lieu* of the licensing rights. But the TRIPS agreement had restricted the scope of compulsory Licensing only to the countries that were capable of manufacturing drugs[149] and have the necessary infrastructure, to devoid a major section of the population that live in the either developing and under developing nations of these rights. This was further corrected by Doha Declaration of November 2001 which allowed member nations to allocate compulsory Licensing for export to countries that establish that they are either unable or subpar at the production of drugs in their country.

It can be noted that after this provision came into being, the companies were threatened by governments granting compulsory license of their patent to other companies which would result in immense loss to them. Thus, many companies voluntarily started lowering the prices of their drugs in order to make it affordable to all and also granting licensed to other companies. Some notable examples can be Gilead that announced non-exclusive licensing contracts in September 2014 with seven generic drug producers in India to produce Sofosbuvir and the experimental Ledipasvir/Sofosbuvir single tablet for the purpose of distribution in 91

[145] Philibert Baranyanka, "The inability of compulsory licenses to address the problem of medicines and vaccines access in ldcs in the context of the covid-19 pandemic" 11 *WIPO-WTO COLLOQUIUM PAPERS* 40 (2020).

[146] Pericles Ladas S, Patents, trademarks and related rights: national and international protection 427 (Harvard University Press, vol1,1975)

[148] Carlos M. Correa, "Intellectual Property Rights and The Use of Compulsory Licenses: Options for Developing Countries", 5 *T.R.A.D.E.*8 (1999),

poor nations[150].7 A middle-income nation like Brazil has aggressively utilized compulsory licensing as a threat to reach an agreement to reduce costs for AIDS medications like Roche's proprietary Nelfinavir.The corporation agreed for sale at a 40% extra discount in exchange for Brazil not imposing a compulsory license.[151]

Indian government has also taken the initiative and gave the first compulsory license in the year 2012 to a drug named nexavar. [152]. Many other countries like China, Taiwan etc. have start to grant license for various drugs while numerous others remain restricted in their approach.

The United States of America makes an annual report on nations that have infringed trade practices or the countries which do not act in Favor of protection of IP rights of American companies These are identified under Section 391 of Trade Act of 1974[153]. In the aforementioned report, USA ascertained that India should alter its policies on compulsory licensing and regarding Sec 3(d) of the Patents Act and has been enumerated in the 'Priority Watch List'[154].

Compulsory licensing in Indian patents act

Compulsory licensing dates back to the Indian Patents and Designs Act, 1911, as enacted, contained compulsory licenses[155]. Back then, an interested person could seek either license or revocation of the patent, if the "reasonable requirements of the public with re a patented invention" were not satisfied.[156]then further changes were made to 1911 act in 1950 in line with the UK Patents Act, 1949[157] keeping in mind the remedies available to handle the misuse of monopoly rights by the patentee. The parliament followed many of the recommendations of ayyangar committee while passing the Patents Act in 1970 where they included "reasonable price' and "reasonable requirements" as alternative grounds for the grant of patent.

[150] "Gilead announces generic licensing agreement to increase access to Hepatitis C treatments in developing countries", Gilead Sciences, Business Wire, Sep.15, 2014.

[151] Examples of health-related compulsory licenses, *available at*: http://www.cptech.org/ip/health/cl/recent-examples.html (Last visited on Oct. 14, 2023).

[152] *Bayer Corporation v Union of India,* (2014) Bombay HC.

[153] Froman M, "2015 Special 301 Report" (Office of The United States Trade Representative,2015).

[154] Seth D & Das S, "DIPP defers decision on issuance of compulsory license for cancer drug Dasatinib", *The Economic Times*, Oct.16, 2014.

[155] The Indian Patents and Designs Act, 1911, ss. 22-25

[156] Ibid. s 22(1).

[157] The UK Patents Act, 1949, ss. 37-45.

The TRIPS agreement was implemented in 2005 in India. Before signing this agreement, we had a very different regime in terms of categories of granting patent. Any molecule as such was not patentable and only the process for making was, hence, the Indian pharmaceutical industry flourished as it provided the world with cheap and generic medicines due to no restriction on patent product. But we faced one problem that was no new product could be launched in India only when India became a member to the TRIPS agreement product patent became legal. India is a hub of pharmaceutical companies where it is 3rd in terms of producing Quantity of medication in the world. This unprecedented power could lead to abuse by the patent holders as discussed above. Thus, we have comprehensive sections which define and describe the regime of compulsory Licensing in India. These are-

- **Section 90** deals with the terms and conditions of compulsory license.
  It states that required remuneration should be paid to the patentee keeping in mind the cost that was incurred in the making and manufacturing of the drug. It also states that the drug should be supplied to the public at a reasonable price and the Licensee should commercialize the patent to its full potential. It also states that this right provided to the licensee is not to be re assigned to another. License is provided mainly for the commercial utilization of the product for the Indian market, but it can also be subjected to export. However, import of the same would only be allowed on special permission from the Central Government.
- **Section 84** specifies that in any of the following three circumstances, the patent controller may grant a compulsory license:

a) The public's reasonable expectations regarding the patented innovation have not been met in any of the following situations.
b) The drug is not sold at an affordable price for the public.
c) The invention is not being worked on in India.

- **Section 92** offers a unique requirement for a license. The Controller of Patents can submit an application for a compulsory license in a situation involving a national emergency or situation requiring immediate action or at an instance of non-commercial public use.
- **Section 92A** relates to the requirement of an export license for patented medicinal items. According to this, a CL may only be given for the manufacture and export of medicinal products to underdeveloped nations. Depending on the situation, the Controller General may add additional terms and conditions. Pharmaceuticals with patents include medicines along with the substances required for the production of that medicine and the diagnostic tools.
- **Section 94** relates to the ending of compulsory license. It stipulates that if the conditions that led to the grant are no longer present and are not anticipated to change, the Controller may revoke the compulsory licence. The CL holder is permitted to protest such termination. Also, the CL holder's license may be revoked if he is unable to comply with the conditions for which the compulsory licence was issued.

- **Section 100** offers patents for use by the government. It provides that in exchange for payment to the patentee, the government may purchase the patented invention for its own use. The patent holder must be informed by the government of the usage and scope of the invention. Nonetheless, the patentee may object to such use or the conditions of such use.
- **Section 102** stipulates that a patentable invention may be purchased by the government for public use. The patent holder receives some money in exchange for giving up all the rights to the innovation.

Three conditions for grant of compulsory license

There are three most important requirements that must be met in order to apply for such a compulsory license, these are-

1. The public's reasonable expectations have not been met,
2. The patented innovation is not easily accessible to the public at an affordable price,
3. The invention is not being developed in India.

- The public's reasonable expectations have not been met.

  The court's ruling stance about what comprises "reasonable restrictions" is vague, though it may be persuaded with a subjective approach. It is essential that an applicant should concentrate on the significance of the patent to society. With the court's emphasis on public perspectives, a large number of patients should be able to obtain life-saving medications. This idea is further supported by key precedents like Novartis AG v. Union of India[158], which highlighted the value of public health and equal access to medications. The legal justification for this strategy is unclear, notwithstanding the possibility that this decision may encourage multinational pharmaceutical businesses to adopt differential pricing as recommended in this case.

  Similar to a more recent case, Lee Pharma v. AstraZeneca[159], the applicant was denied compulsory license due to their inability to provide reasonable conditions, emphasising the importance of this criteria.
- The patented innovation is not easily accessible to the general public at a reasonable price.

  No legal definition of "reasonable pricing" exists. As a result, it is standard practise to compare the cost of drug consumption to the income levels of the population depending on it. However, this comparison is frequently insufficient because patients with complex diseases frequently receive multiple prescriptions, and their expenses are not entirely covered by their medications.

  In order to buy a monthly dose of Nexavar, according to Natco, the lowest-paid government worker would

[158] (2013) 6 SCC 1

[159] Lee Pharma v. AstraZeneca AB, C.L.A No, 1of 2015 Patent Office, Jan. 19, 2016.

need to labour for three and a half years and earn INR 2,80,000. (a USD 5700)[160].

Bayer argued that in order for "reasonable price" to be reached, it must be viewed from both the public's and the Patentee's perspective. At the time that Bayer launched a lawsuit for patent infringement against CIPLA, the business was manufacturing a generic version of the medicine. The CoP, however, inclined that the word must be understood in light of the public's needs and came to the conclusion that Bayer's high pricing was not affordable for patients all across the nation. In Cipla Ltd. v. F Hoffmann-La Roche Ltd. & Anr[161]., the court gave public benefit priority while deciding whether there had been patent infringement.

- The invention is not being developed in India.

  The CoP made a connection between Sections 84(1)(c) and 83(b) of the revised Patent Act of 1970 regarding the third ground. S. 83 discusses the idea of an invention "functioning" after it has been granted an Indian patent. According to S. 83(b), patents are not granted only to grant importation monopolies for patented items. The requirement is that the patented innovation be manufactured in India as stated in the Act.

Problems in relation to compulsory licensing

- **Creation of Gray market**

  In several ways, the local availability of patented goods may result in the development of the gray market. It occurs when a company starts selling the drug for lesser than its listed price. This can occur when a company starts selling a drug to an altogether different nation for lesser prices than the original company in that country is offering, this market is referred to as the “Gray market”. Gray marketing might not be considered criminal in compared to black marketing, which promotes fake or illicit items[162]. But certainly, causes substantial Economic loss to a country. Gray marketing has a certain role in the infringement of Patent Rights. In case of compulsory Licensing, it occurs essentially when a company granted the compulsory license to sell the drug at affordable rated does so not only in the country where the right is granted but in the other countries as well. Whenever the right is assigned to make the generic version, other companies who do not have the license to do so also start manufacturing the same.

  One of the ways to tackle the same problem could be by keeping the prices low enough so that customers are not diverted towards gray markets. The batch of every medication should necessarily mention the country in which it is to be sold to or should mention only for export, either or both. This can also be curbed by making of certain symbols or watermarks that are difficult to copy and by voluntarily providing license to

[160] Bayer Corporation v. Natco Pharma Ltd., Order No. 45/2013, (Intellectual Property Appellate Board, Chennai) < http://www.ipab.tn.nic.in/045-2013.htm > (last visited on Apr. 6, 2023).
[161] 2008 (37) PTC 71 (Del).

[162] Christensen K, “Gray Markets”, *Forbes India*, Apr.16, 2012, *available at* <https://www.forbesindia.com/article/rotman/gray-markets/32694/1> (last visited on Apr. 5, 2023).

other companies to meet the demand in the market.

Lastly the government can spread awareness in consumers that the product in gray market would not be as efficient and effective as the original one. For instance, in 2002, non-sterile tap water was used to make counterfeit Procrit®, a medication intended to treat anaemia in cancer and AIDS patients, which led to infection in already frail[163]

- **No Definition of National Emergency**

  There is no defined boundary as to what can be categorized as national emergency and what cannot be. Different countries have different Social, economic and political situations, thus they cannot be put into one definition, as to what may constitute emergency for one might not be for other. Let's take an example that.

  A national emergency may be declared in a nation if 1% of the population is affected by a disease. In a country like India, where 1% of the population equates to **14,172,740** people, national emergency can be contemplated to be declared, but in Canada, where 1% of the population equates to **387,812** individuals it would not amount to national emergency[164],[165].

  In India, the swine flu outbreak in 2014–15 resulted in 2,123 fatalities.34, 656 people were reported to be affected as of April 6th, 2015.[166] This outbreak does not qualify as a national state of emergency in the country because the number of patients corresponds to a relatively small portion of the population and the drug is readily available to them.

- **Apprehensions of The Patent Holder**

  The patent holder has invested heavily in the idea and project to make the invention. It has incurred cost on research and development to make the innovation possible thus it is not just to put the company that has been granted license on the same pedestal as the patentee. There is a fair chance that when a company who is given the right to manufacturing and selling the product without investing into it, would create an apprehension in the mind of the innovator and thus would lead to a situation where innovation stops as there seems no incentive to work on a new drug. Thus, compulsory Licensing must be strictly regulated, and it can only be provided in cases where the patentee is unable to produce sufficient drugs that can meet the demand of the market.

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[163] Yadav D, "Spurious drugs/ counterfeit drugs- An overview", *Pharmatutor*, Ju. 15, 2015, available *at* <https://www.pharmatutor.org/articles/spurious-drugs-counterfeit-drugs-overview> (Last visited on Apr. 5, 2023).

[164] Population of India, *available at*: https://www.worldometers.info/world-population/india-population (last visited on Apr. 3 ,2023).

[165] Population of Canada, *available at*: https://www.macrotrends.net/countries/CAN/canada/population (last visited on Apr. 3 ,2023).

[166] Charles Patrik Davis, "Swine Flu (Swine Influenza A [H1N1 and H3N2v] Virus)", *Medicine Net*, Apr.6, 2015, *available on* <https://www.medicinenet.com/swine_flu/article.htm> (last visited on Apr. 3 ,2023).

One can point out the positive position in this is the patentee gets royalty from the company without bearing the expenses of manufacturing the same.

- **Low Royalty**

  At time of an outbreak of disease, the product is needed in large quantities and at competitive costs so that everyone, regardless of their financial situation, may purchase it. In that instance, it is not possible to grant a very high royalty for a compulsory license, thus the cost should not increase. Yet, the patentee is still paid a royalty according to the contract.

  The amount of royalty is determined by several factors, including the market worth of the product, the amount of product to be marketed, the percentage of clients, the length of the license, etc.

  If marketing is done in large quantities, royalties are typically lower as even 1% of a great quantity is a huge amount of money, and it is also indicative of higher demand for the product. When disease burdens are modest in middle- and high-income countries, royalties can be greater; when disease burdens are large in low-income countries, royalties are significantly lower.

Compulsory licensing and Covid -19

Compulsory license can be granted when there is medical emergency. The idea of compulsory licensing was highlighted during the Covid pandemic where more and more people advocated that not only license be granted for making affordable version of the drug, but people also advocated that no patent be granted to any pharmaceutical whatsoever in case of drugs that cure covid to deal with the ever going pandemic and the impending deaths.

Granting compulsory License is justifiable if it serves to preserve the public interest, such as public health. Because to these factors, epidemic or pandemic ailments, such as COVID-19, can be deemed a national emergency to support the awarding of such licences and thereby address the demands of poor countries in terms of access to medications or vaccines.

It already appears that the 2005 Protocol[167] provision cannot be implemented in reference to the SARS-COV-19 pandemic, which is why many nations, including the United States, France, the BRICS, and the European Union, are in favour of suspending patents on new COVID-19 vaccines to enable developing nations to more affordably obtain the doses required to immunise their populations. Countries who desire to challenge or even suspend the current patent system have done so because they have seen the mechanism put in place by the 2005 Protocol has failed.

Furthermore, it was debated that doing so is not a solution as companies would lose incentive to work in direction of finding a cure and thus that would directly affect the population with no medication.

Even if these actions, such as suspending patents, do not, provide adequate solutions to the issue of patents and access to medicines in developing nations, they at least have the merit of demonstrating that the WTO's current system is not likely to address this issue and that additional steps must be taken to adopt mechanisms that are likely to do so. There are various proposals, it only remains to analyse and adopt them.

Detailed discussion on some landmark judgements

- Novartis AG v. Union of India[168]

  The facts of the case were that one if the biggest pharma companies in the 90's, Novartis filed for patent of a drug named *gilvec* used to treat Chronic Myeloid Leukaemia (CML) and Gastrointestinal Stromal Tumours (GIST). The aforementioned drug was already used patented in other 35 nations. Madras high court did not grant the patent mainly observing that the drug did not satisfy the conditions of novelty and non-obviousness as was anticipated through prior publication and that was further non- patentable under section 3(d) of the patents Act, 1970. Subsequently they filed an appeal to Supreme Court under article 136(SLP).

  The issues were raised on what would constitute known material and defining "Efficacy" in accordance with section 3(d) of the Patent Act of 1970. Another important question was to determine was that whether the "Beta crystalline form of imatinib mesylate" that Novartis claims to have invented more effective than the imatinib mesylate from which it was derived.

  The Supreme Court made it abundantly clear that in reference to medicine, "Efficacy" in section 3(d) only refers to "Therapeutic Efficacy" and that all other drug-related characteristics are irrelevant. Instead, the characteristics that directly relate to efficacy in reference to medicine are its therapeutic efficacy.

  The Supreme Court compared the effectiveness of "Beta Crystalline form of Imatinib Mesylate" with concluding that none of these properties contribute to an increase in therapeutic efficacy in accordance with section-3(d) of the Patent Act, 1970.[169]

  The decision was taken in view to stop the big pharmaceuticals to bag patent for such minor changes in the drug in wake of which the general public has to suffer the consequences of not being able to afford the necessary medicine due to the overprices drugs in the market as a result of the monopoly of the patented drug by the respective pharma company.

- NATCO v. Bayer Corporation

  The facts of the case were that the active pharmaceutical ingredient "Sorafenib," which is used to treat liver and kidney cancer, was patented in India by the Bayer Corporation, a German company. It is advertised as Nexavar. In 2008, the Indian generic firm CIPLA began manufacturing and advertising its generic equivalent

[168] (2013) 6 SCC 1

[169] Mohammad Suleman Palwala, "A Study On: Novartis AG v. Union of India", *Mondaq* 17,2019) *available on;* <https://www.mondaq.com/india/patent/826478/a-study-on-novartis-ag-v-union-of-india> (last visited on Oct. 15, 2023).

under the brand name "Soranib." Before the Indian courts, Bayer accused CIPLA of infringement of its patent rights.

During the ongoing legal battle between CIPLA and Bayer, Natco Pharma Limited filed a request for compulsory licence against Bayer's patent on Sorafenib before the Controller of Patents. Bayer charged 280,438 INR (about US $ 5280) per month at the time of the lawsuit, while CIPLA's generic version was sold for 27,960 INR (about US $ 525) for the same number of tablets.

Another generic producer, Natco Pharma Ltd, submitted a request for a compulsory licence against Bayer's patent on sorafenib before the Controller of Patents during the ongoing litigation between CIPLA and Bayer. The Controller determined that Natco Pharma deserved a compulsory licence since Bayer had not complied with S. 84 of the Patents Act of 1970.The compulsory license's terms and conditions were written by the Controller, who also gave Bayer a 6% profit-sharing fee. The Controller's judgement was challenged by Bayer before the Indian Intellectual Property Appellate Board (IPAB).

The issues that were raised were mainly if the Bayer Corporation had failed to abide by the reasonable requirements of the public with regard to the drug and also that if Nexavar was made available to the public at a reasonably affordable price.

It was held by the court that the reasonable requirements of the public were not being met with regard to this medicine, hence the first criteria stated in Section 84 (1)(a) was not being met.

The second condition stated in Section 84(1)(b) was the main problem because the drug's price was out of reach for most of the population. This is a significant problem to address because affordability is India's biggest issue because only a very small portion of the population is privileged to afford these expensive medicines and benefit from them while the majority of people cannot.

The patented idea had to be used on Indian soil, which was the third criteria listed in Section 84(1)(b) that wasn't met. The controller also heavily relied on Article 5(A)(2) of the Paris Agreement, which states that each country has the power to issue a compulsory licence for the benefit of the public, to support his position.

Conclusion

The patent regime has changed to a greater extent after signing of TRIPS agreement. Earlier the Indian pharmaceuticals have made significant profits in the international market through reverse engineering of products that were protected by patent everywhere else but not in India. After being a member to TRIPS and honoring the international agreement product patents were made possible in India that led to a stop in this practice.

Through this the Concept of Compulsory Licensing was also introduced at around the same time for protection of health rights of people in general and that to stop the abuse of patent rights by the pharmaceutical industry. Pharmaceuticals companies after gaining patent had monopoly rights to decide the

price and production of the product, they used to charge hefty price for their drug due to no competition, thus making the drug inaccessible to the poorer and in case of some rare drugs even to middle class.

Compulsory Licensing has worked to sufficiently threaten the companies to regulate prices on their own and make it available to the major section of population but at the same time it has various drawbacks associated with it, which include emergence of gray market where the licensed companies sell drugs to even nations they are not allowed to. Another it, gives arbitrary power to the government to decide granting of license in case of national medical emergency, the definition for the same has not been propounded.

The use of compulsory licensing has raised concerns among patent holders and the pharmaceutical industry, who argue that it undermines the incentive to invest in research and development. They argue that without the ability to protect their intellectual property, they will be less likely to invest in the development of new drugs, which will ultimately harm patients.

It can be sufficiently concluded that the grant of compulsory licensing is a complex issue that requires a balance between the need to protect intellectual property and the need to ensure access to essential goods and services. While compulsory licensing may undermine the incentive to invest in research and development, it is a necessary tool to ensure access to life-saving drugs, particularly in cases where the patent holder is unwilling to license, or the price is prohibitively high. The use of compulsory licensing should be guided by the conditions set out in TRIPS, to ensure that it is used in a responsible and transparent manner.

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UNVEILING DESIGN INFRINGEMENT: A DUEL BETWEEN CONSUMER WITH INSTRUCTED EYE AND AVERAGE CONSUMER

-Aditya Chib & Akshita Shrivastava[170]

Abstract

The Designs Act, 2000 governs design rights in the IP framework of India, providing for registration and protection of industrial designs from infringement. For a design to be eligible for registration, it must be new and original. If, however, a registered design is used without permission of registered proprietor, the design is said to be infringed. In India, design infringement cases bank on three major tests to determine similarity between designs: the instructed eye, consumer with instructed eye and average consumer eye tests. Inconsistent application of these tests has resulted in absence of clear guidelines on particular usage of each test. This paper, thus, aims to evaluate the effectiveness of these tests in identifying design infringements. A mixed-methods approach is used, including analysis of relevant cases, in determining reliability and accuracy of these tests. We find that, instructed eye test is the most reliable for such cases, but consumer with instructed eye test can be useful in cases involving complex designs where the average consumer is not able to discern similarities or differences which can be attributed to the lack of knowledge and expertise of average consumers, leading to biases and inaccurate judgments. The study concludes that the Indian judiciary should adopt a standardized approach to determine when to use each test and provide clear guidelines on their application. This will lead to consistency in design infringement cases. Moreover, it suggests greater consumer education in improving knowledge and understanding of design infringement, thereby enhancing the reliability of two tests.

Keywords: Instructed eye, average consumer, consumer with instructed eye, design infringement, similarity.

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Introduction

Design as a word may have different interpretations and usages. In IPR particularly, the term design rights are usually the rights over the shapes and decoration of articles.[171] Unique designs, or so to say 'novel' are registered and thus protected since these designs represent in some sort the original creative work of the designers, thus are valuable assets and need to be safeguarded. This aids the designer in preventing the exploitation of his design without permission. There are 'n' number of advantages for why a design is needed to be registered, however, since that is not the scope of this paper, the author has excluded it. In India, design and design rights are governed by the Design Act, 2000. An Act of 1911[172] previously governed the design rights in India, however, after the growth of design-allied litigations in the field, the old Act provided for a very limited scope.

Section 2(d) of the Designs Act, 2000, states that;

"Design means only the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye."[173]

Further in the case of *Bharat Glass Tube Limited v. Gopal Glass Works Limited*,[174] the Supreme Court held that design as under the Act *"means that a feature or a pattern which is registered with the registering authority for being produced on a particular article by any industrial process whether manual, mechanical or chemical or by any other means which appears in a finished article and which can be judged solely by eye appeal."*

Thus, from the statutory meaning alone, it can construe that design firstly, applied to an article, secondly, that article can be two-dimensional or three-dimensional, thirdly, it is applied by any industrial process and lastly, it in the finished article appeal to and is judged solely by eye. The last phrase i.e., the words *appeal to and are judged solely by the eye,* when seen from a microscopic lens may develop a cataract of confusion in the minds of the readers. To comprehend the phrase fully and grasp its true meaning, it is necessary to delve deeper and conduct a comprehensive examination of numerous design rights cases in Indian jurisprudence.

[171] *Jacob, Sir Robin. Guidebook to Intellectual Property. 3rd ed. Oxford: Hart Publishing, 2013.*
[172] Patents and Designs Act 1911, Act No. II of 1911.
[173] Designs Act, 2000 § 2(d).
[174] 2008 AIR SC 2520.

Novelty

A design is registered only when it is novel in character. This is the trend followed in all IPR jurisprudence around the globe. In the United States, a design can be registered and given patent protection only if the design is a *new, original, and ornamental invention.*[175] Novelty is seen at par with a new inventive step in designing. In *Gorham Co. White*,[176] which is one of the most landmark cases in the United States on design patents and novelty, the court held that a design is not *"merely the mechanical result of proportion, form, or configuration of parts"* and it is *"the product of the exercise of the inventive faculty".*

The Copyright, Designs, and Patents Act 1988[177] (CDPA) is the primary law that governs design and infringement in the UK. According to the CDPA, a design must meet the criteria of being both new and original to qualify for protection. When it comes to defining what constitutes a design, the CDPA includes a variety of elements, such as the physical shape, configuration (i.e. how different parts of a design are arranged together), decoration, and color and pattern of a design. In other words, a design can encompass any combination of these elements, and it is the overall combination that determines the uniqueness and originality of the design.

Further, as mentioned earlier, in India, the law governing the design rights is the Designs Act, of 2000. Section 4 of the said Act states that for a design to be registered it has to be *new and original*[178] or that *it has not been published prior in India or any other country*[179] before the filing of the design application or in short, it should be *novel*. Even though 'publication' is not defined anywhere in the Act, it is widely held that it takes place in two ways- publication by prior use and publication in print.[180] It can also be construed that the design must not be available in the public domain. *Disclosure to an individual who was under no obligation to keep the design secret would constitute publication.*[181] Furthermore, *it shouldn't be disclosed to the public anywhere in India or any other country by publication in tangible form or by use, or in any other way prior to the filing date.*[182]

Novelty is a character that is by far the most fundamental in registering a new design that claims protection. Therefore, the rule in India is that for a particular design to inhibit novelty, it mustn't be made available to the public by either sale, exhibition, use, or otherwise. It should be new and not disclosed to the public in

[175] 35 U.S.C. § 171.
[176] 81 U.S. (14 Wall.) 511 (1872).
[177] Copyright, Designs and Patents Act, 1988, c. 48.
[178] Designs Act, 2000, § 4(a).
[179] Designs Act, 2000, § 4(b).
[180] *The Wimco Limited vs Meena Match Industries*, AIR 1983 Delhi 537.
[181] *Ibid.*
[182] *Bharat Glass Tube Limited v. Gopal Glass Works Limited*, 2008 SCC 10 657.

any form and *secondly*, it should be original. The Act in itself does not mention the word "novel", however, Section 2(g) of the Act defines the term 'original' as *"original, in relation to a design, means originating from the author of such design and includes the cases which though old in themselves yet are new in their application"*[183].

For registration, the article must be original or novel in terms of elements such as shape, configuration, pattern, decoration, or color line composition applied to any article; also, the article must have a visual appeal (i.e., aesthetic appeal).[184] If such novelty is not present or it cannot be ascertained, in such cases the design shall not be registered. Therefore, the crucial aspect of a design is that it must be new with respect to the class of articles to which it is applied.

The Black's Law Dictionary defines novelty as *"So that there may be 'novelty' so as to sustain a patent, the thing must not have been known to any one before; the mere novelty of form being insufficient."* Therefore, novelty should be involved not only in the form or figure of an article but also there must be some novelty in its application. In the case of,[185] it was held that *"mere novelty of form or shape is insufficient. Novelty involves the presence of some element or a new position of an old element in combination, different from anything found in any prior structure."*

Appeal to an eye

As discussed in the previous sections, the Designs Act, of 2000 provides for the basis on which a design is registered. It specifies that in order to be eligible for protection under the Act, a design in question must be new and original and it must have an appeal to the eye.[186] The novelty and originality of a design were discussed in the previous section. *When the novelty of an article is tested against a prior published document, the main factor required to be adjudged is the visual effect.*[187] Under the Act, appeal to an eye refers to the visual appearance of a design.[188]

In *Interlego AG v. Tyco Industries Inc.*[189] the Privy Council said: *"The starting point remains the same as it always was — visual appearance. Nothing is to qualify as a design at all unless it has "features…which appeal to and are judged solely by the eye."* This was further reiterated by the Bombay High Court in

[183] Designs Act, 2000, § 2(g).
[184] *Crocs Inc. v. Liberty Shoes Ltd*., 2018 SCC ONLINE DEL 7107.
[185] 1999 SCC ONLINE DEL 485.
[186] Designs Act 2000, § 2(d).
[187] *Gopal Glass Works Ltd. v. Assistant Controller of Patents and Designs & Ors.*, 2006 SCC ONLINE CAL 442.
[188] *Videocon Industries Ltd vs. Whirlpool of India Ltd*., 2014 SCC ONLINE BOM 565.
[189] 1988 RPC 343.

Photoquip India Limited v. Delhi Photo Store.[190]

It is a visual and subjective test that considers whether a design has an overall visual impression that is substantially different from prior designs or combinations of prior designs. The features of a design should appeal to the eye and should be judged solely by the eye and not by any functional considerations.[191] The visual appeal of a design must be adjudged by the eye of the consumers.[192]

However, the criteria to judge is based on the physical appearance of the design. It could also be understood vis-à-vis novelty and originality in the sense that "features of shape, configuration, pattern, ornament or composition of lines or colours applied" to a previously registered design must not be present in the design which is to be registered i.e. the aesthetic appeal of a design must be distinct. The Act only applies to this criterion on a design, which would have a visual appeal.[193] Hence, only those designs which are original and visually distinctive are granted protection but not the designs which are very similar in visual appeal to the prior published designs.

The conflict of appeal to eye in case of design infringement: Whether average consumer eye or consumer with an instructed eye?

As we discussed above, the definition of design under the Act, it is mentioned that *a design appeals to and is judged solely by eye.* This phrase is indeed a little dim. If a design is to be judged by an eye, whose eye it will be? Especially in the cases of design infringement when the courts look at a design in question, whether the particular design is in infringement to an existing design or not, the court firstly judges the design on its appeal to the eye. The issue at hand pertains to the appropriate standard by which to evaluate a design, namely whether it should be assessed from the perspective of a person possessing specialized knowledge or that of an ordinary consumer seeking to acquire the relevant product. This quandary bears a degree of ambiguity and incongruity, thus necessitating a nuanced and discerning approach to its resolution.

Test of average consumer eye

Firstly, we will discuss the test of the average consumer's eye. The principle behind this test is that the similarity or difference is to be judged through the eye alone and where the article in respect of which the design is applied is itself the object of purchase, through the eye of the purchaser**.** The average consumer, like you and me, is a local buyer who visits the marketplace to buy goods for various purposes. Let's say

[190] 2016 SCC ONLINE BOM 7728.
[191] P. Narayanan, Intellectual Property Law, 2nd ed. (New Delhi: Eastern Law House, 2018), p. 108.
[192] B.L. Wadehra, Law Relating to Intellectual Property, 5th ed. (New Delhi: Bharati Law House, 2016), p. 416.
[193] *Microfibres Inc. v. Girdhar & Co. & Anr. S*, 2009 PTC 40 519.

the buyer wants to purchase a specific air-conditioner model. However, there might be an imitation product with a similar design. The question is whether the buyer can distinguish between the original product and the pirated version. The test aims to determine if the average buyer can identify and differentiate between the two designs. The approach is not identifying individual similarities or dissimilarities. The design as well as the product has to be seen as a whole from the viewpoint of the average consumer. The visual appeal of the product has to be examined and it is to be seen whether the essential that makes the product visually appealing has been substantially copied, rather than the design copied verbatim.[194]

In the landmark case of *Videocon v. Whirlpool*,[195] applying the eye of the average consumer, the court said that it is to be seen whether product manufactured and marketed by Videocon is the design or an obvious imitation of the design registered by Whirlpool, which involves the comparison of both the designs. The court looked at the design of both the washing machine and judged it from the eye of an average buyer and concluded that it was certainly a similar design as Whirlpool.

Further, in *Diageo v. Great Galleon*,[196] the Delhi High Court held three yardsticks for determining infringement of design – *"visual effect, appeal to the eye of the customer and the ocular impression of design as a whole."* Similarly, in the case of *Castrol India Limited v. Tide Water Oil Co. (I) Ltd*.,[197] Calcutta High Court held that *"The task of the judiciary is to judge the difference or similarity through eye alone and that too through the eye of the purchaser."* In this case, the court referred to the case of an English landmark case on *Benchairs Ltd. v. Chair Center Ltd*,[198] where the article to which the registered design was applied was a chair. The English court in this case opined that their task is to observe whether there exist any similarities and differences, to view them both separately and together, and to keep in mind that, in the end, the question of whether or not the design of the defendant's chair is substantially different from that of the plaintiff is to be answered by consideration of the respective design as a whole: and viewed as though through the eyes of the plaintiff, When analyzing the articles simply on their appearance, the Court must determine whether the defendant's version is an obvious or fraudulent copy.

It is indeed essential to keep in mind and take into consideration the buyers who make the purchase of goods by application of their rationally intelligent minds. The Supreme Court in its judgment in *Khoday Distilleries Limited vs. Scotch Whisky Association*,[199] emphasized that the class of purchasers who are likely to buy the goods by their education and intelligence and the degree of care which they are likely to exercise in purchasing or using the goods would be required to be considered. In the case mentioned, the Supreme Court

[194] *Cello Household Products v. Modware India*, 2017 AIR BOM R 3 499.
[195] Supra note 18.
[196] 2022 SCC ONLINE DEL 2350.
[197] 1994 SCC ONLINE CAL 303.
[198] 1994 RPC 429.
[199] (2008) 10 SCC 723.

referred to a previous ruling in the case of *Cadila Health Care Ltd. v. Cadila Pharmaceuticals Ltd*.,[200] wherein the Supreme Court highlighted that the standard applied for determining whether a product is misleading or deceptive may vary based on the class of buyers who are likely to purchase the product. The Court noted that the level of education and affluence of the buyers may impact their level of awareness and understanding of the product, potentially reducing the likelihood of being misled or deceived by advertising claims. In this context, the Court concluded that if the appropriate test had been applied, the outcome may have been different and the court may not have intervened in the matter.

Thus, the test of an eye of an average consumer plays a fundamental role in determining whether a particular design is an infringement or not. It is pertinent to note that the approach taken by the Indian judiciary in such cases of infringement is to judge the similarity or difference between the designs by examining the particular product from an eye of a consumer. It is particular to take into consideration the perspective of the purchaser, who is likely to buy the goods based on their education, intelligence, and degree of care exercised in purchasing or using the goods. The standard applied for determining whether a product is misleading or deceptive may vary based on the class of buyers who are likely to purchase the product. Therefore, in such cases, it is paramount for the courts to keep in mind the buyers' demographics and purchasing behavior while applying the test of an average consumer's eye.

Test of a consumer with an instructed eye

The average consumer, as we know, could be you and me. However, an average person does not have a particular skill and eye as that of an informed or an instructed person. In the words of the European Union Intellectual Property Office (EUIPO), an informed user is defined as "a user of the product concerned who is reasonably well-informed, observant, and circumspect."[201] An informed user is a person who has a particular experience of other like goods and would be discriminatory, further, that person can appreciate enough detail to decide whether an overall impression is made by the particular design or whether the alleged infringement molded a different impression.[202]

The consumer with an instructed eye in legal terminology especially used by the Indian judiciary in cases of design infringement refers to a theoretical person who has specific knowledge in the field of design and is capable of comparing design to determine whether two articles are substantially identical or not. A consumer with an instructed eye possesses trade knowledge as well as an awareness of the prior art. He can identify whether a particular design has taken an inventive step, which makes it new and original. However,

[200] (2001) 5 SCC 73.
[201] European Union Intellectual Property Office (EUIPO), Guidelines for Examination of Registered Community Designs, Part B, Section 3, Chapter 2, 2.2.2.
[202] *Procter Gamble v. Reckitt Benckiser*, (2007) EWCA Civ 936.

incorporating common design elements that are already in use, it would not make the design novel or original when compared to the existing prior art.

In *B. Chawla v. Bright Auto Industries*,[203] a widely quoted judgment in the field of design law in the Indian intellectual property rights jurisprudence, the court referred to *Philips v. Harbro Rubber Company*;[204] in which lord Moulton observed that the question of the understanding of design and its infringement are substances to be judged by eye and eye alone. Further, with regards to the issue of infringement and that of the novelty and originality, should be of an instructed person. The court went on to define instructed person as some with *"common trade knowledge"* and usage in the class of article to which that particle design applies. The incorporation of common trade variants into an existing design does not make it new or unique. The eye should be trained to see through to determine if it is common to trade information or an innovation significant enough to merit registration. A balance must be achieved so that uniqueness and originality receive statutory acknowledgment while simultaneously protecting the interests of trade and the right of people involved in it to share common knowledge. The addition of common trade versions did not make a design unique or innovative. The consumer with an instructed eye, which is cognizant of the prior art, is to be used to determine infringement and novelty.

In *Som Distilleries and Breweries Ltd. v. Carlsberg Breweries*,[205] to assess if a registered design has been infringed, Delhi High Court held that the eye of any instructed person should be used, i.e., he should know what was common trade knowledge and usage in the class of items to which the design relates. Thus, the bench held that the phrase "obvious or fraudulent imitation" was akin to the phrase "identical or deceptively similar" as used in the Trade Marks Act.

Further, on the lines of *the B Chawla case,* recently the Delhi High Court applied this test in a dispute of alcohol packaging regarding a novel design of hipster flask in the *Diageo Brands B.v. v. Alcobrew Distilleries India Pvt. Ltd.*[206] The *prima facie* view of the court in the case was that with regards to piracy of design, the test to be applied is that the particular design has to be examined from the point of view of the instructed eye of a person who is reasonably knowledgeable in terms of the prior art and the person can appreciate enough details. The test from the point of view of an average consumer that *"sees the bottle on a shelf from a distance, would not be the appropriate test to apply".*

[203] AIR 1981 Del 95 (DB).
[204] (1920) 37 RPC 233.
[205] 2017 SCC ONLINE DEL 8125.
[206] 2022 SCC ONLINE DEL 4499.

Furthermore, in the latest judgment in *TTK Prestige Ltd. v. KCM Appliances Private Limited*[207] case, the Delhi High Court has continued its stance on the test of design infringement by upholding that the eye with which it is to be analyzed is that of an instructed person. The Court categorically stated that the test in which a consumer who views the suit design with an instructed eye *"undoubtedly forms the definitive test to assess infringement."* Moreover, it was stated that the Courts should not apply their subjective standards in judging a suit design while examining the ocular appeal, which is the definitive test for a valid design.

Therefore, when analyzing the element of infringement of the suit design by the disputed design, the aspect of uniqueness and originality of the suit design in relation to prior art becomes a relevant factor. An uneducated spectator who is unaware of the state of the previous art and is only comparing the plaintiff's design with the defendant's product cannot, therefore, be the person from whom the aspect of infringement is examined.

Analysis

In the realm of Indian design right jurisprudence, there have been three kinds of test relied upon by the courts for determining instances of design infringement. These include the instructed eye, consumer with instructed eye, and average consumer eye test. Each of these tests is used to evaluate the degree of similarity between the imitated design vis-a-vis the original design. A closer analysis reveals that the application of these tests has been indiscriminate, albeit, the reliability and accuracy of these tests vary significantly.

Instructed eye test involves presenting the impugned design to a person with a trained and discerning eye, who is well-versed and has specialized knowledge of the original design. This person is expected to examine both designs and identify similarities or differences between them. This test is generally employed in cases involving intricate designs where the similarities may not be evident to an untrained eye.

The consumer with instructed eye test necessitates judging a particular design from the eye of a consumer who has specific knowledge of the product. He might be a frequent buyer and has developed a particular degree of expertise, and thus, considered more reliable than the average consumer eye test as the consumer has some knowledge about the original design.

The average consumer eye test, in contrast, involves judging a product solely from the eye of an average consumer who has no prior knowledge of the original design. He is a person, who goes on to buy an article in the market. Will he be able to distinguish between the original and copied article? The court, in this instance, adopts the role of an average layman and evaluates the design based on his perspective.

[207] 2023 SCC ONLINE DEL 2129.

If we look at design infringement cases, the most reliable test is the instructed eye test. However, it doesn't fall within the scope of this research paper, albeit, the focus is on the other two tests- consumer with an instructed eye and average consumer eye, which can be applied based on the complexity of designs. As discussed above, the Indian judiciary has applied these tests haphazardly. There is no right or wrong way of applying these tests, as of now. But they can be judged based on reliability and accuracy.

A consumer with an instructed eye knows the general trade practices, contrary to the average consumer. This test is not based on his memories and perceptions of a design but rather on an objective outlook, meaning his outlook is not affected by his personal biases. On the other hand, an average consumer, since he doesn't have much knowledge or in some cases, no knowledge about a design or general trade practices, might perceive a design based on his biased opinions and outlook, this majorly affects the reliability of that test.

For instance, if the designs are very dissimilar or there are only a few similar features, which are also easily visible and discernible, then an average consumer might be able to identify the design infringement. Or, if the designs are basic and conspicuous, then also an average consumer might identify similarities and differences. However, if the design is complex or has subtle elements, then an average consumer test will fail. In this aspect, a consumer with instructed eye test will come handy. Further, it is essential to note that in design infringement cases, the designs are usually complex and don't vary much, so applying an average consumer eye test wouldn't prove to be fruitful in many instances.

Moreover, a consumer eye test might help gather consumer perception and preference but it is not much reliable and accurate in ascertaining design infringement when compared to the other two tests. The most reliable test can be considered to be the test of instructed eye owing to the rigorous and standardized approach to comparing designs. But, a consumer with instructed eye test is also reliable, though not as much as the instructed eye test, but more than the average consumer eye test.

Conclusion

The test of design infringement in India is mauled with a lot of diverse opinions by the Indian judiciary as to the appeal to eye aspect. We have discussed three tests that have been applied by the Indian judiciary. To put it simply, these include - test of an instructed eye, consumers with instructed eye, and average consumer eye. It is pertinent to note that application of the average consumer eye is not reliable as a standard nor its use can help the judiciary to estimate the existence of imitation in all cases. The consumer with an instructed eye is a better alternative in all cases instead of the average consumer because of its more reliable character. The consumer with an instructed eye knows the market, contrary to the average consumer.

In design infringement cases, the magnitude of complexity and intricate features play a key role in ascertaining which test is to be applied based on the reliability of those tests. Our findings indicate that the most reliable test for design infringement is the consumer with instructed eye test when compared with the average consumer eye test. This test is based on the opinion of a person who has knowledge about general trade practices and is not affected by personal biases. The consumer with an instructed eye test is also reliable, but not as much as the instructed eye test. Instructed eye or the eye of an expert is used in cases where design is highly complex or technical. An expert, therefore, necessarily has more chances of identifying the existence of any imitation. The average consumer eye test is the least reliable, as it is based on the opinion of a person who may be biased or not have enough knowledge about the design or general trade practices. The average consumer eye test might help gather consumer perception and preference but it is not much reliable and accurate in ascertaining design infringement when compared to the other two tests.

Due to no delineated criterion to apply these tests in design infringement cases, the approach of the judiciary had been irregular. As discussed above, different High Courts have applied different tests while ascertaining design infringement. It is imperative to note that facts and circumstances of the cases are important to adjudge which test is to be applied, however, if a standardized approach to determine when to use each test and clear guidelines on their application are provided, then the problem of irregular application can be resolved to a certain extent. Furthermore, at the grassroots level, greater consumer education to improve their knowledge and understanding of design infringement would enhance the reliability of the consumer with instructed eye test and average consumer eye test.

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ROLE OF TRADE SECRET IN FOOD MANUFACTURING INDUSTRIES

- Ankit Gupta[208]

Abstract

Trade secrets are essential intellectual property rights that protect businesses from competitors and maintain their unique tastes, textures, and quality. In the food industry, keeping trade secrets private helps businesses maintain their economic worth and success. Restaurants, chefs, and food brands can use trade secrets to safeguard recipes, such as non-disclosure and non-compete agreements, to maintain their monopoly and profit from inventions. Technology has become a trend in protecting trade secrets, with companies using blockchain technology to store and track data about their goods, access histories, and supply chains. Trade secrets can have an economic impact by creating obstacles to market access, resulting in less competition, higher costs, less innovation and prevention from theft. However, trade secret law does not cover all categories of knowledge related to health, and it is unlikely that the release of aggregated data will hurt competition. Trade secrecy has exceptions for public interest which helps to ensure that information can be disseminated to improve public health.

Keywords: Trade Secret, Food production, Competition, Economy, Public health.

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Introduction

Trade secrets are the crown jewels of every firm. A trade secret is a sort of intellectual property right that guard businesses closely. It may be licensed to keep hidden from other, and can be sold on its discretion. A trade secret, in a broader sense, is any knowledge undisclosed to its rivals that offers its owner an advantage over its competitors. If taking the instance of food, in this competitive world, the food sector heavily relies on trade secrets. They can consist of formulas for ingredients, production procedures, and recipes that give businesses a competitive edge. In the food industry, keeping trade secrets private helps businesses maintain their distinctive tastes, textures, and quality that sets them apart from rivals. Additionally, it enables them to profit from their inventions and keep customers. To maintain the economic worth and success of food enterprises, trade secrets must be protected.

Trade Secret in Food Production Industries

Trade secrets can be used to safeguard recipes. Restaurants, chefs, or food brands may want to ask the people who receive the recipe to sign non-disclosure and non-compete agreements and tell them that the recipe is a trade secret. In this context, franchise agreements will contain specific clauses. Chefs and restaurants should decide up front who will own any trade secrets in recipes. If the recipe is properly kept secret and not shared with outside parties, this type of protection can be incredibly effective and endure forever. To keep the throne of monopoly, there must be the trade secrets of the companies.

The industries like the food and beverage, their sector is continually changing. Thus, there will be adjustments made to how businesses safeguard their trade secret or intellectual property (IP). The increased use of technology to protect trade secrets across many industries, including the food and beverage sector, has become a trend in recent years, such as *Coca Cola, invented in 1886 by Dr. John S. Pemberton.* Food Companies are beginning to employ blockchain technology, for instance, to safely store and track data about their goods, access histories, and supply chains. This lowers the danger of trade secret theft or illegal access. Meanwhile, trade secret helps to gain more profit to the companies because of their main trade ingredients. Taking the context of India, its laws does not explain and define the trade secrets. However, India still implies the practices of trade secrets. Food industries sometimes may hide the secret ingredients to prevent the rip off companies. Therefore, maximizing the profit is the only key role aim of the companies. Thus, their main objective is to supersede the market by giving the quality edibles and food.

Impact of trade secret in food industries

Trade secrets can have an economic impact by creating obstacles to market access. It might be difficult for a new rival to enter and compete effectively when a food industry has a distinctive trade secret. This can result in less competition, higher costs, and less innovation in the competitive market. For example, if a food manufacture possesses a secret formula for a product that cannot be easily reverse-engineered, the manufacture can retain a monopoly on that product as long as the trade secret stays a secret, driving up consumer costs. This may hinder technical development by discouraging company collaboration. Interestingly, in the previous five years, the US, Japan, and the EU have updated their trade secret regulations too, for example, increase safeguards and add civil and criminal sanctions for trade secret theft. When you consider that trade secret theft contributes for around 3% of global GDP, it's easy to see why modifications are being made.

However, recognizing that extensive investigations have found that trade secret law, properly interpreted, does not cover many categories of knowledge related to health and that close examination frequently exposes trade secret claims to be improper. When information is revealed can also have an impact on whether it hurts competition. For instance, it would be unlikely to result in a competitive disadvantage to release research and development costs after the relevant food product was released to market. Additionally, it is doubtful that the release of aggregated data will hurt business. A state can establish or enlarge defences against excessively broad trade secret rights in the three areas that need special consideration. First, nations should take precautions to prevent trade secrets from becoming entrenched as human rights or constitutional rights and resist efforts to codify stricter trade secrets law in international law, especially without sufficient and explicit safeguards. Second, states ought to minimize trade secret laws and let them to be disregarded in cases when there are clear benefits to the public's health. Third, nations ought to enact strong protections for informers.

Trade secrecy exceptions for public interest can aid in ensuring that information can be disseminated to improve public health. These exceptions can be codified in at least four different ways: first, states can adopt "balancing tests" that allow the release of trade secrets when the public interest outweighs private harm; second, states can adopt information exclusions from the scope of trade secret protections; third, states can adopt post-hoc techniques like intellectual property laws; and fourth, states can use post-hoc techniques like intellectual property "rights". The public interest may be served by progressive disclosure rules for specific health and safety information. It is possible to carefully balance business interests and public health issues by carefully adjusting the breadth and timing of these disclosure obligations.

Conclusion

Trade secret is important to promote the business in the food industries. It maximizes the profit to the great extent and increases the monopoly in the market. In this competitive world, it could be necessary for the food industries to keep this secret to prevent their other competitors, as they might copy their ingredients to take a position in the market. However, the trade secret may make a harmful impact in the society regarded as public health. Consumers may face problem to identity the main items in the food as seeking the sufficient information are the basic rights. It may take a huge problem for the state to prevent these methods. States might employ to shield themselves from overly broad trade secret regimes. States can protect the pressing public need for collaboration and transparency by guarding against the entrenchment of trade secret law as creating "rights" protected under international and domestic law, by protecting the public interest in confidential commercial information by allowing or mandating data sharing, and by strengthening whistleblower protections. Governments can expand access to medications and promote the right to health by doing so.

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THE INTERSECTION OF GEOGRAPHICAL INDICATIONS AND INTELLECTUAL PROPERTY: A DEEP DIVE INTO PREVAILING LEGAL ISSUES

-Priyadarshini Goenka[209]

Abstract

Geographical Indications (GIs) stand as unique intellectual property rights, spotlighting the relationship between products and their places of origin, embodying traditions, skills, and localities. While GIs act as economic drivers, safeguarding cultural heritage and ensuring product authenticity for consumers, they grapple with multifaceted legal challenges in the ever-evolving intellectual property (IP) landscape. This discourse delves into pressing issues like the conundrum of dual protection under trademarks and GIs, the requisite for standardization and rigorous quality control to preserve GI integrity, and the complexities surrounding their infringement and enforcement. Furthermore, the analysis underscores the nuanced challenges of limiting GI usage, emphasizing the fine line between rightful attribution and undue appropriation. The interplay between GIs and trademarks, especially in terms of co-existence, further accentuates the intricate balance in IP law. As GIs gain global recognition, understanding and addressing these legal intricacies is pivotal for stakeholders, ensuring that both cultural preservation and commercial interests coalesce in harmony.

Keywords: Geographical Indications (GIs), Intellectual Property (IP) Landscape, Dual Protection, Standardization and Quality Control and Co-existence with Trademarks.

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Introduction

In the realm of intellectual property, Geographical Indications (GIs) stand distinct, spotlighting the unique relationship between products and their place of origin. These GIs, which affirm a product's authenticity and intrinsic value based on geographical origins, play a pivotal role in safeguarding traditional knowledge and heritage. However, their interface with the broader intellectual property law framework brings forth a plethora of intricate challenges. From clashes with trademarks to enforcement quandaries, these issues underscore the complexities of ensuring that GIs not only protect regional identities but also harmoniously coexist within the global intellectual property ecosystem.[210]

Definition and recognition

The concept of Geographical Indications (GIs) is anchored in the idea of associating products with a particular geographical region, often signifying quality, reputation, or other characteristics unique to that area. However, the definitional landscape of GIs remains intricate due to variations in interpretations across global jurisdictions. The World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) lays down a definition of GIs. It describes them as "indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin." Yet, how this definition is perceived and implemented varies considerably among countries. For instance, in certain nations, GIs are distinctly recognized and treated as a unique intellectual property right, distinct from trademarks. This clear delineation ensures that GIs are granted protection specifically tailored to their unique nature, safeguarding the interests of local producers and communities. Conversely, in other jurisdictions, GIs fall under the broader category of trademark law, often classified as collective or certification marks. This conflation can sometimes lead to challenges, as the nuances and distinctiveness of GIs may not be adequately addressed within the traditional framework of trademark law. Such discrepancies in definition and recognition underscore the complexities in achieving a universally harmonized approach to GIs. As a result, producers and traders often have to navigate a patchwork of regulations, which can pose challenges, especially when seeking protection in multiple countries.

This detailed examination sheds light on the complexities inherent in the realm of GIs, emphasizing the importance of a nuanced understanding when delving into intellectual property law.

[210] "Geographical Indications,"*available at*: https://www.wipo.int/geo_indications/en/index.html (last visited September 25, 2023).

Dual protection in Geographical Indications

The concept of Dual Protection emerges as a complex facet within the realm of Geographical Indications (GIs). Dual Protection pertains to the simultaneous protection of a product under both the GI and the trademark regime. While GIs are intended to safeguard the uniqueness of products originating from a particular region, trademarks serve to distinguish the goods or services of one entity from others. Both systems coexist, but their convergence can lead to intricate legal landscapes. At the heart of the Dual Protection conundrum is the potential for overlap and conflict. A product might be registered as a GI due to its geographical origin and specific qualities, while concurrently, an entity might seek trademark protection for the same product, emphasizing its brand identity. This parallel existence raises questions: Can a single product enjoy protection under both regimes without causing market confusion? What takes precedence when there's a dispute – the collective heritage represented by a GI or the individual brand identity of a trademark? For producers, Dual Protection can offer enhanced market exclusivity, ensuring both the regional authenticity and the brand's individuality are maintained. However, for competitors and consumers, it may pose challenges. It can lead to market restrictions, potentially stifling competition. For consumers, discerning the genuine attributes of a product becomes intricate when it bears both GI and trademark labels. Jurisdictions vary in their approach to Dual Protection. Some provide a clear demarcation between GIs and trademarks, while others allow a more fluid coexistence. The challenge lies in striking a balance, ensuring that both systems, while cohabiting, foster fairness, clarity, and genuine market value.

This examination sheds light on the multifaceted nature of Dual Protection in GIs and the nuances that come into play in its implementation and interpretation.

Standardization and quality control in Geographical Indications

In the domain of Geographical Indications (GIs), the emphasis on standardization and quality control is paramount. GIs, by their inherent nature, are not merely markers of geographical origin; they are also badges of authenticity, quality, and unique characteristics attributed to that origin. Ensuring consistent quality and maintaining the features that make a product unique becomes essential to uphold the value and trust associated with a GI label. Standardization, in this context, implies the establishment of a well-defined set of criteria that a product must meet to qualify for a GI tag. These criteria might encompass aspects such as production methods, raw material sourcing, and specific characteristics that the finished product must exhibit. By setting clear standards, GIs help preserve the traditional methods and qualities that lend the product its distinctive reputation.[211] Quality control, on the other hand, involves ongoing checks and measures to ensure that the products bearing the GI tag consistently meet the set standards. Without rigorous

[211] Jupi Gogoi, "Locked out, without a GI tag" *The Hindu*, 26 November 2017, section Comment.

quality control mechanisms, there's a risk that products might deviate from the established norms, diluting the prestige of the GI and potentially misleading consumers. However, the process is not without challenges. Balancing the preservation of traditional methods with modern production techniques, ensuring widespread adherence to set standards among varied producers, and maintaining objective and effective quality control mechanisms require meticulous oversight. In the world of GIs, standardization and quality control are not mere regulatory hurdles but are integral to the very essence and credibility of the GI label.
This elucidation underscores the significance and intricacy of standardization and quality control within the framework of Geographical Indications.

Infringement and enforcement in Geographical Indications

The uniqueness and value associated with Geographical Indications (GIs) make them susceptible to infringement. Whether it's the unauthorized use of a GI by producers outside the specified region or the production of goods that fail to meet the established standards within the region, infringements can dilute the essence of the GI and mislead consumers about the product's origin and quality. Infringement typically takes two primary forms. One is outright counterfeiting, where products falsely claim a GI. The other, subtler form involves evoking the characteristics or reputation of the GI without directly using its name, which can still mislead consumers. Effective enforcement mechanisms are crucial for the protection of GIs. However, enforcement poses its challenges. Firstly, it requires clear legislative frameworks that define what constitutes an infringement and stipulate penalties for violators. Regular monitoring is essential to detect infringements promptly. This can be particularly challenging given the vastness of global markets and the myriad ways counterfeiters can imitate or misrepresent GI-tagged products. Another challenge lies in the international domain. While a GI might be protected in its country of origin, ensuring that protection in foreign markets demands international cooperation. Treaties, bilateral agreements, and adherence to international standards play pivotal roles in this respect.
This explanation sheds light on the complexities of enforcing GIs and the importance of robust mechanisms to counter infringements.

Co-existence with Trademarks in the realm of Geographical Indications

Geographical Indications (GIs) and trademarks are both vital intellectual property tools, albeit with distinct objectives. While GIs identify a product's geographical origin and the qualities, reputation, or characteristics attributable to that origin, trademarks distinguish products or services of one enterprise from others. Their co-existence in the legal landscape can lead to potential overlaps and conflicts. One of the main challenges arising from this co-existence is the possibility of a trademark getting registered before a GI. If such a trademark becomes well-established, it could complicate the subsequent registration and protection of a GI.

Conversely, a well-established GI might hinder the registration of a trademark that closely resembles or evokes the GI, even if unintentionally. Another concern is consumer confusion. If a product bears both a trademark and a GI, consumers might be unsure about the product's true origin or the authenticity of its claimed qualities. This could dilute the very essence of GIs, which is to assure consumers about the geographical origin and the inherent quality of the product. To navigate these challenges, legal systems need to establish clear boundaries and precedence between GIs and trademarks. Some jurisdictions have implemented mechanisms where, under specific conditions, a GI can coexist with a prior trademark, and vice versa. Such mechanisms aim to balance the interests of trademark holders with the collective rights of producers in a GI region.

This elaboration underscores the intricacies of the relationship between GIs and trademarks and highlights the need for a balanced approach to their co-existence.

Economic and Commercial Exploitation of Geographical Indications

At the crossroads of tradition and commerce, Geographical Indications (GIs) represent not just a product's origin but also its embedded cultural, historical, and artisanal narratives. When effectively exploited, GIs have the potential to open lucrative commercial avenues, enhancing local economies and strengthening brand identities. Economically, GIs can be transformative for local communities. They provide an opportunity for artisans and producers to command premium prices, given the authenticity and quality assurance GIs offer. Furthermore, they can catalyze local tourism, with regions known for particular GIs becoming destinations for cultural and gastronomic tourism. Darjeeling for its tea or Champagne for its sparkling wine are classic examples of regions benefiting economically from their GI status. However, commercial exploitation isn't devoid of challenges. The very authenticity that GIs vouch for can be a double-edged sword. The stringent criteria that often define a GI product can limit scalability. There's also the danger of over-commercialization, wherein the quest for broader markets might dilute traditional methods, potentially jeopardizing the GI status itself. Another aspect to consider is branding. While GIs inherently provide a branding advantage, consistent and strategic marketing is crucial to fully realize their commercial potential. Regions need to invest in telling their unique stories, thereby connecting consumers globally with the local traditions and craftsmanship that the GI symbolizes. Furthermore, the global recognition of a GI plays a pivotal role in its commercial success. Without adequate international recognition, producers might find their products facing stiff competition from counterfeit or misleadingly labeled products in global markets. In conclusion, while GIs hold immense economic promise, their commercial exploitation requires a judicious blend of upholding tradition, strategic marketing, and vigilant protection against potential dilution or misuse.

This narrative illuminates the economic potential of Geographical Indications and the careful considerations needed for their successful commercial exploitation.

Conclusion

Geographical Indications, rooted in cultural legacy and regional distinctiveness, serve as vital markers in the world of intellectual property. While they bolster local economies and preserve traditional expertise, the intertwining challenges within the larger IP law matrix cannot be overlooked. Addressing issues ranging from trademark intersections to rigorous enforcement mechanisms is imperative to maintain the sanctity of GIs. As the global market continues to evolve, a balanced, informed approach will be paramount in ensuring that Geographical Indications remain robust protectors of regional identity, all while navigating the intricate tapestry of intellectual property rights.

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THE FUTURE OF THE VIRTUAL WORLD: DEMYSTIFYING THE RELATIONSHIP BETWEEN NFTS AND INTELLECTUAL PROPERTY IN THE METAVERSE

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"The metaverse is a vision that is going to span decades, if not centuries. It's going to be a long journey, but it's going to be worth it."

~Mark Zuckerberg

Abstract

The idea that the metaverse may be responsible for bringing about the "Next Internet" or "Web 3.0" is generating a significant amount of enthusiasm among those who use the internet. Having said that, it is vital to analyze the fundamental factors that are causing this increased excitement. This is especially true for those who are interested in using this cutting-edge piece of technological equipment. A number of well-known internet-based companies, such as Meta popularly known as Facebook, have made considerable investments in the Metaverse, which is a developing digital environment. These organizations are devoting their efforts and resources to the research, development, and improvement of "virtual reality" technology. As a direct consequence of the continuing epidemic that is taking place at this crucial time period, metaverses have begun to materialize. Individuals are now in a position to do a broad variety of duties from the comfort of their own homes as a direct consequence of the quick development that has been made in technology as well as the rising tendency towards autonomy that can be seen in current work settings. This idea would have been laughed off a few years ago, but now it is generally regarded as the path that future advances are likely to follow. Nevertheless, we are of the opinion that the metaverse is still in its formative phases and that major shifts are likely to take place in the not-too-distant future. In this paper, we further discuss about how the Intellectual Property Rights would be governed in metaverse, the kinds

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of present and future opportunities available for Non-Fungible Token. This paper also throws light upon the relationship between Trademark Infringement and Non-Fungible Tokens, considering the NFT Ownership and Copyright of the Underlying Asset. In spite of the fact that many of the technological advancements that were discussed in our research are already in the works, it is imperative that a thorough analysis of the legal ramifications associated with the full deployment of the metaverse be carried out before this step can be taken.

Keywords: Metaverse, Assets, Virtual reality, NFT transactions, Intellectual Property Rights

Intellectual Property Rights in Metaverse

The components of intellectual property include patents, trade secrets, trademarks, and copyrights (IP). Copyrighted fictional and nonfictional works, as well as trademarks for all businesses, catchphrases, and patented objects, may all be protected in the metaverse. It is crucial to preserve your intellectual property in the metaverse since it has the potential to earn you a great deal of money. You may take legal action against anybody who steals or otherwise exploits your private information. Another alternative is to sell licenses to others so that they may profit from your intellectual property. Owners of significant intellectual property (IP) may earn a great deal of money via royalties and licensing agreements while retaining their competitive advantage. Due to the complexity of the Metaverse, there will be a great deal of intellectual property theft. Due to the complexity of the transactions, it would be a Herculean undertaking to identify those who violated the law[214]. Therefore, in order to resolve this issue, we must devise novel and cutting-edge strategies to halt the infringement. For instance, when copy-protected NFT artwork is for sale, both authentic and counterfeit copies may be offered. The selling and purchase of virtual products raises additional concerns about trademark infringement. When constructing physical or digital machinery, patents may be violated. It is also possible to steal trade secrets created or shared using virtual platforms. Consequently, trade secrets are the most valuable item in the Metaverse. Registering your brand in advance for all digital goods and services reduces the likelihood that someone will steal your name. If embedded systems continuously monitor for copyright breaches, it may be simpler to locate them online. Virtual investigators, such as people, AI, and automated systems, might be used to detect and remedy any copyright, trademark, or patent infringements.

[214] Efendioğlu, İ.H., 'The Rise of the Non-Fungible Token (NFT) Market in Turkey: The Effect of Social Media Interaction and the Need for Uniqueness on NFT Purchase Intention*', 21 Review of Marketing Science 1 (2023).

Encoding information via Non-Fungible Token

Non-Fungible Tokens are digital assets like as images, music, and films whose ownership can be verified and maintained via a blockchain (NFTs). It may be purchased and sold on several internet marketplaces, where it can also be acquired. Non-fungible tokens are a powerful form of token because they can be used in a variety of ways to represent non-fungible assets on a blockchain. The code of non-fungible tokens contains information on what makes each token distinct. Individual pixels in a digital artwork may be encoded with information, much as tokenized in-game things can be encoded with information that tells the game client which object the player possesses and what its characteristics are[215]. As soon as an NFT is created, its whole transaction history is visible on the blockchain. This implies that each token's legitimacy may be verified independently of its issuer. This is significant for those who already own tokens as well as those who may purchase them in the future. Non-fungible tokens may only be sold if their scarcity value is high. In scientific terminology, this indicates that there are insufficient quantities of something. As a result, asset valuations will remain unchanged and the market will not have to cope with an excessive amount of assets. The majority of NFTs are not divisible, meaning you cannot purchase and sell single units. A non-fungible token cannot be used to purchase something of lesser value, such as a concert ticket or trading card.

As with all other digital assets and tokens based on smart contract blockchains, NFTs are entirely programmable. Both Crypto Kitties and Axie Infinity have built-in mechanisms for their respective currencies to reproduce[216]. It is conceivable that more options may be presented in the future. Therefore, NFTs combine the greatest features of decentralized blockchain technology with the best features of non-tradable assets. In contrast to the majority of digital assets, which are issued and managed by centralized organizations and may be revoked at any moment, you can really own and manage your own NFTs.

The Past, Present and Future opportunities for Non-Fungible Token

In 2017, a tweet discussed the need of "tokenizing assets." This was the first usage of the word NFT. Despite the fact that the foundation was built in 2014, NFT trading did not begin until 2016. In 2021, Merriam-Webster, a division of Britannica, will auction off an NFT with its updated definition of NFT to generate funds for charity[217]. This will increase the digital asset's popularity and acceptance in society. Even while NFT often refers to anything that can only be seen or heard in digital format, the term is becoming more

[215] Ludlow, P. and Wallace, M., The Second Life Herald : The Virtual Tabloid That Witnessed the Dawn of the Metaverse (The MIT Press 2007).

[216] Guidi, B. and Michienzi, A., 'From NFT 1.0 to NFT 2.0: A Review of the Evolution of Non-Fungible Tokens', 15 Future Internet 189 (2023).

[217] Birinci, Y., 'The Role of Effective Protection of IP Rights on Economic Growth', in Innovation Policies and International Trade Rules: The Textiles and Clothing Industry in Developing Countries (Palgrave Macmillan 2009) 51.

prevalent. In March 2021, Christie's sold a 5,000-image digital collage by Mike Winkelmann, also known as Beeple, for $69,346,250. Over 22 million individuals saw the online auction. Later, a former Christie's auctioneer told the BBC that he had difficulty grasping the concept of an NFT because "the thought of purchasing something that doesn't exist is plain strange." NFTs may increase or decrease in value for the same reasons as cryptocurrencies and collectibles do[218]. Beeple even questioned if he had been struck by a bubble. NFTs are projected to gain in popularity as their application in online transactions increases. For example, this technology has already been utilized to transfer certain real estate deeds, and in the future, a car title may also be an NFT[219]. People have argued that the cryptocurrency sector as a whole and NFTs in particular have a major influence on the environment. In May of 2022, it was anticipated that a single Ethereum transaction will consume more than 250 kilowatt-hours of energy, which is roughly nine days' worth of electricity for the typical U.S. family.

To operate the blockchain and produce NFTs, a lot of computing power is required. It's likely that each transaction with a different cryptocurrency demands a different quantity of energy. Cryptocurrency platforms consume a lot less energy currently since they leverage distributed computing and renewable resources. People have also claimed that NFTs are a high-risk technique to speculate on assets whose future prices are hard to anticipate. There will be a steep learning curve when the market finds out the true worth of the millions of NFTs that are currently for sale on various blockchains and marketplaces. The market for NFTs is only beginning to expand. We may not know which NFTs will endure for years.

The Invincible Strings Attached: NFTs and its Relationship with IP Rights

It's not always apparent who owns the IP created by an NFT. In a March blog post, James Grimmelmann, Yan Ji, and Tyler Kell from Cornell University wrote about how challenging it is to adapt NFTs into the present framework of copyright law. Even while the writers recognized that a person who owns an NFT might have a lot of influence over a creative work, they underlined that this sort of power is not a natural aspect of owning such an asset. The inventor must take action in order to defend the legal rights of the NFT owner.

According to the statistics very few of them take all of the fundamental procedures required to make sure that NFT copyrights perform the way community members want them to. Many NFT projects were looked at. In their paper "Demystifying NFTs and Intellectual Property: What You Need to Know," Elizabeth Ferrill, Soniya Shah, and Michael Young state that NFTs "may be susceptible to IP protections, such as

[218] Philpott, J., 'A Handbook of Intellectual Property Management: Protecting, Developing and Exploiting your IP Assets: Hard Rights versus Soft Rights', in A handbook of intellectual property management: Protecting, developing and exploiting your IP assets (2004) 15.

[219] Ruse-Khan, H.G., 'Re-delineation of the Role of Stakeholders: IP Enforcement beyond Exclusive Rights', in Intellectual Property Enforcement: International Perspectives (Elgar 2009) 43.

copyright, design patent, and trademark rights." They argue that when an NFT is manufactured or sold, its ownership and compliance with any regulations that apply to it, like as the conditions of purchase or resale, are handled automatically by a smart contract on a blockchain[220]. This typically implies that the sale of the NFT comes with a license that specifies out the buyer's rights and duties for the NFT. In their study, Ferrill, Shah, and Young contend that the great majority of NFT producers restrict the NFT's economic potential and provide users a license that only enables them "use, copy, and display" the NFT. As evidence, they refer to the fact that Twitter co-founder Jack Dorsey sold his first tweet to a user called Sina Estavi in return for a token that couldn't be used for anything else (NFT)[221]. Even if Dorsey owns the copyright, Estavi is the only one who may use the token that symbolizes the tweet. Estavi can't sell T-shirts with the tweet on them because Dorsey hasn't granted him permission to do so.

Lawyer Jeremy Goldman, who specializes in intellectual property and blockchain technology at Frankfurt Kurnit Klein & Selz, said that copyright is always an "opt-in" system. This implies that NFT artists may choose whether or not to restrict what consumers of their work can do. Tokens may or may not state what sort of license they are, but as an NFT holder, you should know about a number of kinds.

NFT Ownership and Copyright of the Underlying Asset

When an individual purchase an NFT, all they receive is a cryptographically signed receipt that verifies they are the legitimate owner of that specific NFT. There are two typical misconceptions that need to be addressed up[222]. First, the buyer does not obtain the author's original copyright. Second, the buyer does not obtain property rights to every copy of the work that was purchased. One individual, for example, spent hundreds of dollars for the privilege to utilize the Nyan Cat NFT in their own digital cartoon that was developed using animation software. Christopher Torres, who created Nyan Cat, still holds the rights to the initial drawing he did of the cat. Because of the following important points: Each NFT contains a unique serial number or "fingerprint" (hash) that makes it hard to spoof. Since a hash is a cryptographic key produced from a single digital file, it can only ever represent a single copy of that file. But it implies that NFT may not always be a good thing. But this is when agreements and licenses that are signed digitally come in useful.

But when it comes to copyright, the rights won't alter unless the original author gets permission to do so. When copyright is transferred by licensing, the person who acquires it may not be able to produce additional

[220] Townley, B., Roscoe, P. and Searle, N., Creating Economy: Enterprise, Intellectual Property, and the Valuation of Goods (Oxford 2019).

[221] Horky, F. et al., 'Don't miss out on NFTs?! A sentiment-based analysis of the early NFT market', 88 International Review of Economics & Finance 799 (2023).

[222] Sengupta, A., 'Protecting the rights of an IP buyer using cryptosystem-based multivariable fingerprinting', in Frontiers in Securing IP Cores: Forensic detective control and obfuscation techniques (IET 2019).

copies, distribute copies, perform, display, or develop new works based on the original asset[223]. The Indian Copyright Act of 1957 stipulates that those who possess copy rights have a range of rights, including the ability to produce copies and amend them. When a buyer buys an NFT related to a creative work, they also receive a digital copy of the piece (in formats like.jpeg,.pdf, and.mp4). If an individual copy and spread an NFT without the owner's consent, they can be breaching their copyright. This includes duplicating or modifying an NFT without authority[224]. Since ownership of NFTs isn't centralized and blockchain transactions can't be undone, it could be impossible to enforce intellectual property rights against a buyer following an NFT sale. A digital wallet address is commonly connected to an NFT, exactly as a bank account is. However, without excellent digital forensics, it may be impossible to determine out who truly owns the wallet. Using powerful takedown letters might block the NFT from ever being offered to the public.

Relationship between Trademark Infringement and Non-Fungible Tokens

The major reason an entrepreneur comes up with an NFT for an underlying asset is to differentiate oneself apart from competition. But trademark infringement arises when an unauthorized third party mints, sells, or resells an NFT using the registered trademarks of the asset owner without the asset owner's consent[225]. The topic of whether or not a corporation genuinely owns NFTs as opposed to trademarks or the assets being sold is becoming increasingly significant as owners of prominent fashion brands like Tiffany, Louis Vuitton, and Dom Perignon utilize the AURA blockchain to allow buyers examine the legitimacy of their branded NFTs. This issue might be remedied in a large manner if market actors broadened their trademark registrations to include non-fungible tokens (NFTs) in their trademark transfers and classifications. They can also wish to identify their brand with a specific style or kind of work clothing. Design patents need to be considered about when they are required because of how much money, profit, and sales they may bring in.

The owner of an NFT blockchain might utilize patents to license the technology underlying their NFT, enabling its consumers to receive actual collectibles. For example, the world-famous shoemaker Nike has trademarked the notion of "cryptographic digital assets for footwear," which helps purchasers authenticate the validity of their purchases and preserve a digital collectable version of their shoes on a mobile device or digital wallet (Crypto kicks)[226]. It's vital to remember that a patentable concept must be novel and fulfil

[223] Marcelino, J.G., Kusumawardani, N. and Al Hafiedz, A., 'NFT (Non-Fungible Token) Sebagai Jaminan Kebendaan. (Indonesian)', 6 Notaire 19 (2023).
[224] Hasan, H.R. et al., 'Using NFTs for ownership management of digital twins and for proof of delivery of their physical assets', 146 Future Generation Computer Systems 1 (2023).
[225] Kuner, S. and Brennan, D., 'Cryptoassets in the Metaverse: the Risks, Opportunities, and Legal Considerations', 43 Licensing Journal 4 (2023).
[226] Chowdhury, M.A.F. et al., 'NFTs, DeFi, and other assets efficiency and volatility dynamics: An asymmetric multifractality analysis', 87 International Review of Financial Analysis N.PAG (2023).

the standards for a patent.

The Laws and Lacunae on Non- Fungible Tokens and Intellectual Property

Even while NFT transactions have the ability to totally transform the art market by making transactions safer and simpler, there are still doubts regarding whether or not the seller is genuine. People frequently have this issue, as when they "tokenize" a piece of art that isn't theirs and attempt to sell it as if they were the original owner. Under Section 55 or Section 63 of the copyright laws, the owner of the copyright might seek civil or criminal action against the individual who stole their work[227]. We shall utilize the copyright infringement guidelines in Section 51 of the Copyright Act to assess whether there has been an infringement and if it comes under Section 52 of the Copyright Act. According to Section 79 of the Information Technology Act of 2000 and the Intermediaries Guidelines/Rules, NFT markets and platforms shall also be held responsible. Together, these requirements demand that intermediary platforms undertake their research and act fast if there is any hint that their service is being exploited to support criminal activities. If they don't, they face the danger of being sued as a facilitator[228]. There are still difficulties, that's for sure. Even though NFTs are extensively utilized and quite popular, trading in them is not restricted in India. Since NFTs can only be acquired with cryptocurrencies, the lack of clarification regarding the legal status of cryptocurrency in India is likely the main obstacle with NFT trading. With the adoption of the Banning of Cryptocurrency and Regulation of Official Digital Currency Bill in 2019, support for making all cryptocurrencies and NFTs illegal has strengthened. Any usage of digital money, whether directly or indirectly, would be unlawful and might lead to up to 10 years in jail.

In 2018, the Reserve Bank of India (RBI) also sought to ban individuals from utilizing virtual money. However, their actions were less contentious than the legislation that was being debated over. The Internet and Mobile Association of India, together with a few enterprises that manage online platforms for trading crypto-assets and other entities, have filed an appeal against the aforementioned ruling[229]. The Apex Court held that the notice was unreasonable because of how it was employed compared to other comparable measures in India and throughout the globe. The three-judge panel stated that the RBI couldn't restrict individuals from trading bitcoin since there was no legislation that specified people couldn't acquire or sell cryptocurrency. The court concluded that making it impossible for individuals to undertake legal business would go against their fundamental rights. Even while regulatory issues imply that new investors and purchasers of NFTs face an unknown risk, the Indian Copyright Act of 1957 makes it easy to enforce IP

[227] CERES, R.W. and KETTLE, K.C., 'Digitized Design: Navigating IP Rights in the Age of the Metaverse', 69 Federal Lawyer 34 (2022).
[228] Mittendorf, B. and Smith, S.S., 'Riding the NFT Wave', 93 CPA Journal 18 (2023).
[229] Vig, S., 'Intellectual property rights and the metaverse: An Indian perspective', 25 Journal of World Intellectual Property 753 (2022).

rights.

The Pulp Fiction of Ownership of NFT

In the famous case of Miramax, LLC v. Tarantino[230], A few months after RAF sued Dash, Quentin Tarantino and Miramax LLC engaged into a similar NFT issue on the West Coast. Miramax sued Quentin Tarantino in a California district court in November 2021, stating that Tarantino's intentions to sell seven of his movies went against the company's intellectual property rights. "Secret NFTS" threatened to breach an agreement in which Tarantino had committed to provide Miramax all rights to the exclusive moments" from the 1994 movie Pulp Fiction (including all copyrights and trademarks in and to the Film). The auction was announced on the Open Sea NFT platform. It claimed secret and original information that has never been seen or heard before, such as the unedited initial handwritten draughts of "Pulp Fiction" and exclusive bespoke commentary from Tarantino, exposing mysteries about the movie and its creator. In response to Miramax's concerns, Tarantino argued that the planned Secret NFTs are part of the rights that his contract with the firm allows him, such as the freedom to publish scripts. Miramax may or may not win its case against Tarantino based on the facts, but one thing is for sure that the two parties have differing notions about how far Miramax's rights go. Miramax does control a lot of Pulp Fiction rights, but they don't allow them do everything they want. Tarantino has reserved the usage of several film-related assets, which may or may not include the applicable Secret NFTs. This case highlights how vital it is for legal agreements that include intellectual property to state the limitations of the rights being transferred as explicitly as possible. Given how enthused people are about NFTs and how fast their popularity has increased among content owners searching for new methods to generate money, this is of the highest significance.

Conclusion

One of the primary challenges is the fact that the vast majority of people don't have any idea what legal protections apply to them after purchasing an NFT. Although that is not the case, several customers have the misconception that they are also acquiring the actual job[231]. In point of fact, however, customers are not acquiring the item itself; rather, they are purchasing information around the item. The creator of the work is the only person who has the right to make copies, publish the work, lend or lease it, perform it, edit it, share it, or provide permission to others to do any of these things. A link in an NFT may only be in violation of the right to communicate to the public if there is a causal relationship between the token and the work. A non-fungible token (NFT) does not infringe on these rights since it consists only of code and does not

[230] 2:21-cv-08979-FMO-JC (C.D. Cal. Mar. 10, 2022)
[231] Sadorsky, P. and Henriques, I., 'Using US Stock Sectors to Diversify, Hedge, and Provide Safe Havens for NFT Coins', 11 Risks 119 (2023).

reproduce the work in any way that matters[232]. Therefore, digital money in the form of non-fungible tokens (NFTs) will be tied to every copy of the work that is made, coined, and uploaded on blockchains so that it may be sold or transferred. This will allow for the work to be sold or transferred. The Indian Copyright Act of 1957 is very important for the manufacturing, propagating, and transferring of copies of NFTs that have been developed for digital recognition. This is despite the fact that there are no specific limits for NFTs.

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[232] Nobanee, H. and Ellili, N.O.D., 'Non-fungible tokens (NFTs): A bibliometric and systematic review, current streams, developments, and directions for future research', 84 International Review of Economics & Finance 460 (2023).