Journal of Intellectual Property Rights
Vol 29, November 2024, pp 569-578
DOI: 10.56042/jipr.v29i6.14177

# Protection of Application Programming Interfaces and the 'Idea-Expression' Dichotomy: the Google-Oracle Dispute through a Competition Law and Economics Perspective

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*Received: 4th October 2024; revised: 15th October 2024*

Copyright law has one overarching goal: to promote creativity. Thus, it seeks to protect not the idea itself, but its unique expression, and, since its first exposition in the seminal case of *Baker* v *Selden*, this rule has cemented itself as the guiding principle for determining copyright infringement around the world. In our computer age, the applicability of the rule to software programs has proved both difficult and contentious. In a nascent software market, the problem of locating the idea-expression dichotomy within the context of a software program was accentuated because there existed no clear test which would help demarcate the idea in software from its expression. This encouraged the first entrants into the market to dissuade new entrants by simply copyrighting the interfaces required to develop newer software.

The three – step test evolved in the Altai decision, a newer iteration of the idea-expression rule, had given succour to judicial authorities in determining the extent of protection to be granted to a software program. However, the Federal Court's decision in *Oracle* v *Google* has given short shrift to the idea-expression dichotomy by allowing application programming interfaces (APIs) to be copyrightable. The authors argue that, in light of the U.S. Supreme Court's overturning of this decision, the distortion of the very fabric of the dichotomy, as well as the structure of the software market, has been, for the time being, averted. The aim of this article is to examine the modern contours of the idea-expression dichotomy by juxtaposing its application in Altai vis-a-vis its non-application in *Oracle* v *Google*, both at the Federal Court and Supreme Court, through a competition law and economics perspective, and its broader implications upon the monopolisation of the software market.

**Keywords:** API, Idea-Expression Dichotomy, Competition Law, Economics

One of the primary goals of intellectual property law is to encourage creative expression. Copyright law[1]attempts to achieve this goal by striking a proper balance between the right of a creator to the fruits of his labour and the right of future creators to free expression. This balancing approach can best be evidenced in what is now known as the 'idea-expression' dichotomy. By denying the protection of the idea and assuring to the authors a right over their original expression, law seeks to encourage others to build freely upon the ideas and information conveyed by the author's work.[2] In essence, then, the dichotomy tries to ensure that the owner of the copyright does not enjoy an overarching monopoly on the work in detriment to the public good.[3]

As scholars and judges have opined extensively that, for a work to be original, what is sought is not a new idea, but a new iteration of an older idea.[4]The idea embodied in the prior work is therefore a building block which is used to create new forms of expression. This rationale for denying protection to an idea can best be understood in light of the *Lockean* proviso[5]in so far that to provide monopoly, even for a limited duration, in an idea would lead to a withdrawal of the idea from the commons without leaving enough and as good in the commons for others to use or appropriate. The central principle is thus manifestly clear that there can be no copyright in ideas but only in the expression of these ideas.[6]

From an economic perspective, the dichotomy 'attempts to promote economic efficiency by balancing the effect of greater copyright protection - in encouraging the creation of new works by reducing copying - against the effect of less protection - in encouraging the creation of new works by reducing the cost of creating them.'[7]The goal to be achieved is twofold: to incentivize authors to create new works,[8] such that the expected return from the creation of the work is greater than the costs associated with creating it; and to reduce the social costs imposed upon the

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populace due to the exclusion of others which limits the diffusion of knowledge amongst them.[9] Thus, the traditional economic justification for copyright that creators deserve reward for their labour[10] has been supplanted by a utilitarian 'public goods' justification, such that that the law tries to ensure that authors receive appropriate incentives to create new works without incurring a social cost that reduces the dissemination of new ideas, thereby reducing overall utility.

However, what constitutes idea and what represents an expression is unclear. Scholars have presumed the distinction between the two to be intuitive, in a similar vein to the distinction between right and wrong.[11] Furthermore, even judges, for that matter, have not defined the distinction in clear terms and have instead taken recourse to labelling the distinction to be necessarily vague.[12] Where then does a judge draw a line between an idea and its expression? To leave such a question, which lies at the very crux of the copyright regime, to the whims and fancies of a judge would be tantamount to inviting accusations of arbitrariness and uncertainty upon the whole field of copyright law.

What adds to this uncertainty are the several interpretations that exist of this dichotomy, wherein the dichotomy has sometimes been held to represent the difference between style (idea) and content (expression).[13] Furthermore, judicial dicta have also created another line of reasoning that it is the fixation of an idea onto a tangible medium that is protected under copyright law.[14] The lack of clarity becomes even starker when we put this dichotomy to the rigours of today's world. Software programs, and the algorithms that form the internal architecture of such applications, have been afforded copyright protection even though their functional capabilities distinguish them from other copyrightable works. However, key issues such as 'what should be protected' and the 'standards required for a work to qualify for protection' have been answered in an inconsistent fashion.

The *Altai*[15] judgment, through its novel three-step test, tried to ensure two things: firstly, that programmers may receive appropriate copyright protection for innovative utilitarian works containing expression; and secondly, that non-protectable technical expression remains in the public domain for others to use freely as building blocks in their own work. In other words, through the evolution of the three-step test, the *Altai* court extended the application of the idea-expression dichotomy to computer programs. In the Indian scenario, the *Altai* judgment has not been fully accepted, primarily because the Indian courts have yet to face a challenge as to the copyrightability of a software program, but also because the *R.G. Anand*[16] dicta still enjoys primacy,[17] in so far that the 'look and feel' test is employed as the basic test to determine the distinction between the idea and expression, regardless of the type of work in question.

The aim of this article is to critically analyze the idea-expression dichotomy while keeping in perspective the developments that have taken place in the dynamic field of computer programs and other allied technologies. In the first part, the author shall explain the key elements of the dichotomy; then, an analysis of the dichotomy's application to the literal and non-literal elements of computer programs shall be conducted; finally, the Oracle-Google controversy will be examined from a legal as well as an economic perspective, focusing on whether application programming interfaces, which are interoperable methods of communication and which constitute the basic tools for software developers,[18] should be given copyright protection, or not, keeping in view the monopoly effects that might stem from granting such protection.

## Elements of the Dichotomy

### Features of the Dichotomy

The dichotomy can be said to have four features.[19] Firstly, the quantity of idea and expression varies from work to work and a distinction between them is a matter of degree.[20] Secondly, the dichotomy is invoked primarily in the infringement context; it is of no use to prescribe a precise dividing line between an idea and its expression except when confronted with the question of infringement. Thirdly, this requirement of expression often overlaps with the originality requirement, and finally, the application of the dichotomy will vary with the type of work in issue: ideas underlying a literary work are different from those underlying, for instance, a computer program or even a visual work of art. The boundary line of the dichotomy, for each work afforded copyright protection, acts as a significant policy judgment about the original contributions that creators in a particular field should be allowed to monopolize and that which belong in the public domain.

### *Idea*

A work's unprotectible idea usually is one of three categories; as a concept, as a solution, and as a

building block. The first category of ideas flows from the general conception that such ideas are relatively few and do not warrant monopoly cost as the social cost would exceed such benefits that the monopoly grants. The second category follows the *Baker*[21] ratio and thereby withholds copyright protection from any "procedure, process, system, method of operation....principle, or discovery."[22] It is this conception upon which today's courts have given or denied protection to computer programs,[23]as we shall see. Finally, the third category encapsulates the rule that copyright does not protect the building blocks of creative expression so as to promote the production of the largest number of expressions. Idea is, therefore, a shorthand for a number of non-copyrightable elements in a given work.[24]

***Expression***

When an author elaborates a general concept into a completed work, an idea can be said to have evolved into expression. Expression, then, is not merely a set of basic elements such as the words employed or the visuals depicted; it includes 'subterranean' elements that constitute the non-literal elements within a work. As highlighted previously, the adjudication upon the dividing line between idea and expression is necessarily a matter of degree and judgments will, as held in *Peter Pan Fabrics*, inevitably be *ad hoc*. Thus, an expression can be construed as a "concept fledged out in adequate detail."[25]

***The Merger Doctrine***

When an idea's expression can effectively be made in only one way, a court will not grant copyright to it. The justification is that the work's idea and expression have merged rendering the work in its entirety as unprotectable.[26] This is because a grant of copyright would lead to a monopoly in the very idea; a breach of the fundamental tenet of copyright law would occur. For instance, in the software context, a microcode, dictated by the instruction set for a particular microprocessor where no other alternative ways of programming was available, was said to be an example of merger.[27]

***Scènes à Faire* Doctrine**

This doctrine forecloses protection under copyright to those elements in a work that are preordained by the work's unprotectible ideas. Features that are "so rudimentary, commonplace, standard, or unavoidable"[28] or "other small details....which are inherent in the situation itself"[29] are denied protection.

The merger doctrine focuses on functional and factual works and ensures that an expression dictated by an idea's functionality or factual considerations is free for competitors to use whereas the *scènes à faire* doctrine applies to fictional works and recognizes a wider degree of expressive possibility. Thus, the two doctrines serve the idea-expression dichotomy in different fields. However, as the *Altai* decision tells us, the courts have employed both the merger and the *scènes à faire* doctrines to the computer program problem.

**Framing *Altai* within the Contours of the Dichotomy**

***Altai* syllogism**

That the literal elements in a work are copyrightable is trite law. Further, protection is extended to a work's non-literal elements as well. As held in *Nichols*, "It is of course essential to any protection of literary property . . . that the right cannot be limited literally to the text, else a plagiarist would escape by immaterial variations."[30] In computer programs, bifurcating between literal and non-literal infringements becomes a complex task when an alleged infringer is accused of having copied the structure of the program but by using a different code. What was the essence or fundamental structure duplicated was to be decided using a "total concept and feel"[31] method first applied to computer programs in the *Whelan* decision in order to extend protection beyond the program's literal element to its structure, sequence, and organization (SSO).[32] In Whelan, the test was formulated as follows:

"…the line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question. In other words, the purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea...Where there are various means of achieving the desired purpose, then the particular means chosen is not necessary to the purpose; hence, there is expression, not idea."

This test, which found prominence in early cases where rival gaming companies were contesting infringement of the games of the respective companies,[33] is an extension of the traditional substantive similarity test,[34], but it is inadequate as computer programs are too technical to be judged solely on instinct.[35] Thus, this test was explicitly rejected by the *Altai* court as unnecessarily broad and based on the inadequate assumption that a program would have only one idea, its purpose.

By construing a computer program as a literary work, the Altai syllogism – *computer programs are protected as literary works; literary works are protected against non-literal infringements; therefore, computer programs are protected against non-literal infringements* – sought to approach the issue from a traditional, closely-calibrated approach. Expanding the *Baker* rationale to computer programs, an analogous relationship could be observed between computer programs and accounting texts as they both are a set of instructions. Going further, the court held that elements necessarily incidental to the program's functions are similarly unprotectable. Legislative intent behind the protection of original works of authorship was highlighted in *Altai* to strengthen the syllogism employed to extend protection, if warranted, to non-literal elements of the computer program. It was observed that, "[w]hile computer programs are not specifically listed as part of the above statutorydefinition, the legislative history leaves no doubt that Congress intended them to be considered literary works." Under Indian law, computer programs are also considered to be literary works.[36]

**Dichotomy as Central to the *Altai* rationale**

The *Altai* court shifted the focus from the program's ultimate purpose as a method of evaluating substantial similarity to the program's structural design. A practical method could then be derived wherein each subroutine, a program in itself, could be assessed individually. First, "reverse engineering on a theoretical plane" would be done to isolate each level of abstraction in a computer program to reach a point where the abstractions are no longer protected. Subsequent judicial developments have identified 'at least six levels of generally declining abstraction: (i) the main purpose, (ii) the program structure or architecture, (iii) modules, (iv) algorithms and data structures, (v) source code, and (vi) object code.'[37] Secondly, each level of abstraction, through a successive filtering method would sieve away the protectible from the non-protectible. The sieve will consist of three levels: considerations of efficiency, which is an unusual instance of the merger doctrine as found in the realm of computer programs in so far that efficiency dictates there are only very few viable choices that are so compelling that others are automatically rejected, would be first; external factors, which determine certain standards that programmers adhere to generally, would be discarded as an instance of the *scènes à faire* doctrine, would be the second; finally, all elements from the public domain would also be non-protectable.

Thirdly, post the removal of all non-protectable elements, it becomes imperative to compare the protectable material in the allegedly infringed program with the infringing program to ascertain if there exists substantial similarity between the two to validate a finding on infringement. Courts have construed the final test as a side-stepping of the traditional audience test, or the ordinary observer test,[38] which suffers from twin problems of the audience, typically the end-users, not being able to understand a program's content and their conceiving of the comparison between programs as a question of aesthetics. The comparison is thus limited to technical similarities[39] and is focused on whether the infringed elements constitute a substantial part of the plaintiffs' program as a whole.[40]

As a result, both literal and non-literal elements could now be separated by the abstraction-filtration-comparison test to distinguish between the protectible and the non-protectible. The journey of the dichotomy from the realms of the literary world to that of computer programs could finally be said to be complete with the exposition of the *Altai* test. Simply put, the *Altai* decision recognized that external factors such as interface specifications, *defacto* industry standards, and accepted programming practices must not be protected under copyright law. The *Altai* test has been followed in a litany of cases,[41] in part, because it has reduced the dichotomy to a series of applicable precepts to reduce the ad hoc nature of deciding what constitutes idea and what constitutes expression. In applying the test, courts tried to ensure that copyright protection would not mutate into a monopolistic tactic to control interfaces and other functional portions of the program so as to allow firms to reap monopoly benefits. The decisions consolidated the view that interoperable interfaces were legitimate, and should not be constrained by providing copyright protection to what is ostensibly a method of operation.

However, the long-running case of *Oracle* v *Google*[42] nearly distorted the dichotomy by obfuscating the line between what can be protected under copyright law and what must rightly be rejected.

**Dichotomy Distortion in *Oracle* v *Google***

Oracle's infringement claims against Google for the use of its Java Programming Language and the

language's API packages in Google's Android Platform was rejected at the district court level but overturned, twice, at the Federal Court of Appeals Level. It was alleged that as many as thirty seven of a hundred and sixty-six API packages were replicated. The district court rejected Oracle's claim on two primary grounds: firstly, that the lines of declaring code of Java were method specifications and were not copyrightable as they were an instance of the merger doctrine, as well as being on the wrong side of the copyright-patent border as established in *Baker*, and therefore no literal infringement could be said to have occurred; secondly, Oracle's argument that the SSO of the APIs should be treated as copyrightable expression and thereby fomenting a case for non-literal infringement by Google was also rejected by the court as the SSO was nothing but a command structure and merely a system or method of operation required to achieve interoperability and it therefore attracted the statutory bar.[43] Thus, the APIs could not be infringed since they were not under the ambit of copyright anyway.

In appeal, the Federal Court overturned both grounds of rejection. In the first place, the court used the *Feist*[44] rationale to hold the lines of declaring code as a compilation or a taxonomy, which exhibited a modicum of creativity by Oracle and thus contained protectable expression entitled to copyright protection. In the second place, the court rejected the reasoning that a method of operation ipso facto renders that method incompatible with copyright protection i.e. the *Lotus* rationale, and held that, under 9th Circuit Law,[45] an SSO is copyrightable if it is an expression of an idea and not an idea in itself. In the Court's rationale, an API SSO can be a creative expression worthy of copyright protection. By rejecting the *Altai* test, the Federal Court did not scrutinize the API packages using the merger and *scènes à faire* doctrines, which would have led them to affirm the district court's decision. The rejection of Altai was justified by holding that the test does not help determine copyrightability but only helps in determining those elements that will not be scrutinized in deciding infringement.

However, such an interpretation necessarily distorts both legislative intent as well as the rule embodied in *Baker*. If a method of operation is interpreted as an expression, then, in the name of protecting non-literal elements, the Court will be granting copyright to elements which fall into the domain of patent law. Furthermore, the essence of the dichotomy is to ensure that ideas do not get monopolized and impede the progress of science.[46] By giving protection under copyright to what is ostensibly a method of operation, however original and creative, would be to remove an idea from the commons of ideas without leaving enough and as good for others to use or appropriate. In deciding as it did, the court upturned the long-held position that interfaces do not enjoy copyright protection since they serve as compatible standards which allow development of newer software, thus enabling the market to get enlarged.

The case was remanded back to the District Court to rule upon whether the use of the APIs constituted a 'fair use' exception or not. After a hectic trial phase, the jury returned a verdict in favour of Google, holding that the use of the APIs, while an infringement, was excepted under the 'fair use' doctrine. This was appealed by Oracle, and the Federal Court ruled in its favour once again, holding that 'Google's use of the 37 Java API packages was not fair as a matter of law', and remanded the case back to the district court to rule on damages. Google, thereafter, approached the Supreme Court of the United States, seeking certiorari to the Federal Court for review of its judgment on both copyrightability and 'fair use.'

**The Supreme Court's Solution – Reliance on the 'Fair Use' Doctrine**

The Supreme Court ruled in favour of Google, holding that its use of the APIs did not constitute an infringement of copyright, being a 'fair use' of the material as a matter of law, since it was only those lines of code that were put to use which were

"…needed to allow users to put their accrued talents to work in a new and transformative program."[47]

It is to be noted that the Supreme Court assumed, for argument's sake, that the APIs were copyrightable, and, thus, only dealt with the question as to 'fair use.' Referring to the doctrine as an "equitable rule of reason" that "permits courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster," the Supreme Court found that the doctrine provided a context-based check to keep a copyright monopoly within its lawful bounds.

Thereafter, finding that the doctrine involved a mixed question of fact and law, the Supreme Court ruled that the use of Oracle's APIs by Google would

indeed fall under the fair use doctrine, since its use satisfied the four-pronged test under US copyright law.[48] Furthermore, since Google's use of the code was 'transformative' in nature, inasmuch that the use of the APIs lead to the addition of something new and important, i.e. the creation of a new platform for programmers to readily use, the Supreme Court found the use to be consistent with the constitutional objective of creative 'progress' that lies at the heart of copyright law.

Thus, a 'reimplementation' of the interfaces by Google, thereby furthering the development of new computer programs, was held to be an instance of 'fair use,' since shared programs required the use of common interfaces for these programs to converse with each other. Additionally, the Court ruled in Google's favour on the 'substantiality' factor, stating that

"Google's basic objective was not simply to make the Java programming language usable on its Android systems. It was to permit programmers to make use of their knowledge and experience using the Sun Java API when they wrote new programs for smartphones with the Android platform. In principle, Google might have created its own, different system of declaring code. But the jury could have found that its doing so would not have achieved that basic objective. In a sense, the declaring code was the key that it needed to unlock the programmers' creative energies. And it needed those energies to create and to improve its own innovative Android systems. We consequently believe that this "substantiality" factor weighs in favor of fair use."

Google also succeeded therein on the 'market effects' factor, with the Supreme Court holding that

"The uncertain nature of Sun's ability to compete in Android's market place, the sources of its lost revenue, and the risk of creativity-related harms to the public, when taken together, convince that this fourth factor—market effects— also weighs in favor of fair use."

Thereafter, the Supreme Court remanded the matter. Justice Breyer's majority decision, supported by five of his Associate Judges, was not concurred with by Justice Thomas, who wrote a dissenting opinion, supported by Justice Alito, wherein he ruled that Oracle's APIs were copyrightable, holding that

"Properly considering that statutory text, Oracle's code at issue here is copyrightable, and Google's use of that copyrighted code was anything but fair."

**Dichotomy from an Economic Perspective**

There are costs associated with creating intellectual property. These include costs associated with creation, production and distribution of that intellectual property; the latter cost is usually referred to as transaction cost. Then, there are costs associated with the protection of that intellectual property as well. These costs parallel the costs associated with protecting property per se. For intellectual property, transaction and protection costs are high. Transaction costs are high not at the initial stage when the original sale of an intellectual property takes place but when the right to make copies is to be transacted upon.[49] In the case of tangible property, the property is definite, and the transaction costs are straightforward, whereas in the case of intellectual property, confusions arise as to what will constitute the subject matter of the transaction, and whether it is the tangible form of expression of that intellectual property or the intangible 'idea' in the work that is to be protected?

Furthermore, the costs associated with rent seeking are also very acute. Rent seeking is a key motive for intellectual property creators as it is a 'pure profit' for them, a return over and above the cost of generating it. In copyright law, specifically, if ideas are allowed copyright, rent seeking behaviour will be encouraged and resources will be devoted to developing ideas which have only a minimal amount of expression in it, with the copyright owners hoping that authors later in time would pay for the right to use and develop the idea. A copyright equivalent of 'patent races'would then occur where increased investment over and above the optimal amount would be made by publishing houses, or in our case, software leviathans, which may not lead to any increase in social benefit. The excess investment would only be waste.

Additionally, if copyright protection is too extensive, costs associated with creation of new works would increase, and a distortion of the market would be observed. The increase in costs, perhaps due to the licensing of 'ideas' required to create a new work, would decrease the number of works created. The increase would then be passed down to the consumers as the price associated with that work would increase. Limitations provided by intellectual property are aimed towards reducing costs such that the efficiency of rights conferred increases. Requirements of non-obviousness in patent law and denial of protection to functional trademarks are some examples of limitations imposed. In our context,

copyright law tries to achieve this aim, generally, through doctrines such as the idea-expression dichotomy and, in our present context, through the denial of copyright to systems or methods of operation or method specifications, amongst others.

A monopoly grant in such a method of operation or functional expression (which are but subsets of the unprotectable idea) will therefore lead to an increase in costs of creating new works. And, as highlighted previously, if the costs of creation rise then there will be a consequent increase in the price of the new work. This economic analysis is more trenchant than the traditional justifications behind the protection of expression which are based on the vague considerations such as the expected decline in social welfare if protection was extended to ideas.

#### *Oracle* from an Economic Perspective

Landes and Posner formally represent the *Baker* ratio as

$$r = f(s,t) \quad \text{... (1)}$$

where *r* denotes the use of the new bookkeeping system, *s* the system itself, and *t* the blank account forms, and where both *s* and *t* are required to produce *r*. It is clear, therefore, that if Selden controls either *s* or *t*, he gains a monopoly over *r* itself.

If the formal characterization of the Baker ratio is transposed upon the factual matrix of *Oracle*, we can reduce *Oracle* formally as

$$j = f(a,c) \quad \text{... (2)}$$

where *j* denotes the use of the Java Programming Language to develop new programs, *a* denotes the API while *c* denotes the lines of declaring code for Java, and where both *a* and *c* are required to develop a new program. Control over one of *a* or *c* would be enough to create a monopoly in Oracle's favour but by granting control over both *a* and *c* to Oracle, the Federal Court was consequentially granting a complete monopoly to Oracle over the use of Java. However, with the Supreme Court now holding in Google's favour, such a monopolisation of market power relating to APIs has been averted for the time being.

The onus upon the court when trying to solve (1) is to assess the extent to which *s* or *t* constitutes an idea. That the *Baker* court held both to be ideas is an indication that the court did not want the pecuniary benefits over the impugned bookkeeping system to monopolize in one individual. This is a tacit acknowledgment that the consolidation of market power in one entity will be to the detriment of not only the producers in the market, for whom costs of production (creation) would rise due to the lack of access to the means of production, but also consumers, for whom the price will not be governed by the forces of demand and supply, but will be determined unilaterally by the dominant entity, creating an artificial inflexible price. In other words, the delineation of an idea from its expression is but an exercise by the court to limit the grant of monopoly to a level where the market does not get distorted.

A similar onus rests on the court in (2). An analysis of both *a* and *c* should necessarily involve an investigation into the potential effects upon the market when a monopoly is granted in either *a* or *c*. By allowing both to be protected, the Federal Court had given a virtual carte blanche to those firms who seek to restrict end – user interoperable interface development as a proprietary strategy aimed at disallowing their competition to make use of functional tools in developing newer software programs. This is not a new phenomenon by any means. When the software industry was at a nascent stage and up till the decision in Altai, firms sought to control interfaces, as it allowed them to regulate who could enter the market, thereby abusing their dominant positions within the industry.

These efforts at monopolization were further boosted by the *Whelan* decision, where, as we have seen earlier, the broad analysis expanded copyright protection to the SSO, such that interoperable programs could not be developed as interfaces and networks were also protected. The *Altai* decision, in conjunction with the *Lotus* decision, served as a check on such monopolistic endeavours. By limiting the extent to which a firm could restrict others from using their platform, *Altai*, and subsequent judicial and legislative developments, including the *Google* decision, has allowed the open-source software movement to thrive, ushering in an era of innovation unhindered by property claims.

That era is seemingly at an end, regardless of the fair use exception acting as a bulwark against monopolist claims, because the exception is merely a defence to the infringement, and not an entitlement for open software use. The entitlement to use the APIs has been taken away, replaced by a qualified usage of the APIs, which is still open to infringement claims.

The threat of a lawsuit, especially by behemoth entities, may deter enterprising developers from using these APIs.

Costs rise twofold: firstly, costs of creation increase as the developers will either have to pay the owner of the interface to use the APIs or will have to look at alternative interfaces to use, which may or may not be interoperable enough for the software to succeed in the market; secondly, costs of distribution rise as a result of the lack of interoperability – after all, why will firms market and distribute a new program if it does not work on a platform that is used commonly by the consumers. And where costs rise, prices rise, and the consumer, which in our case is every person who uses a sophisticated device be it smartphones or laptops, is affected negatively, both due to a rise in prices and a decline in choices available. The market distorts, the treasure is hoarded and creation of new works is stifled. Copyright law never was meant to allow such a state of affairs, where competition in the market is hindered by its application.

**APIs at the threshold of Copyright and Competition**

It is presumed that intellectual property laws, and antitrust & competition laws, are at odds in their respective goals; where the former seeks to preserve private interest, the latter seeks to check the same. Thus, it is commonly understood that intellectual property law confers a state accepted monopoly, albeit for a specific period, thereby giving certain exclusionary rights to the holder of the intellectual property, whereas competition law seeks to ensure that the markets are free from distortion and monopolisation. The holder of the intellectual property is, thus, caught between the "Scylla and Charybdis of conflicting policy considerations."[50]

It is seemingly intuitive, then, that when a copyright is granted for an API, both these fields of law will end up in conflict at some stage. However, such conflict may not necessarily arise, for a deeper connection exists – both fields seek to protect the interests of the consumer by enabling innovation, without allowing monopolies to exploit ideas that serve the common good. As the European Commission recognised,

"…both bodies of law share the same basic objective of promoting consumer welfare and an efficient allocation of resources. Innovation constitutes an essential and dynamic component of an open and competitive market economy. Intellectual property rights promote dynamic competition by encouraging undertakings to invest in developing new or improved products and processes. So does competition by putting pressure on undertakings to innovate. Therefore, both intellectual property rights and competition are necessary to promote innovation and ensure a competitive exploitation thereof."[51]

By explicitly holding that the use of the APIs was an instance of fair use, the Supreme Court has provided succour to young developers and other entities by enabling their use of APIs, in order to further the development of computer programs. In other words, the consumer welfare goal of competition law has been met in this case by using a copyright concept, viz. 'fair use,' to diminish the possibility of conferring a monopoly upon Oracle.

**Conclusion**

The idea-expression dichotomy has a basic intuitive appeal in that its core purpose balances, or at the very least, attempts to balance, the author's economic rights to the fruits of his industry with the societal requirement of a free domain of unprotected knowledge upon which other members of society can exercise their innate right to self-actualization by expressing the common knowledge in their own manner.

The dichotomy, as has been shown, resonates very clearly throughout the *Altai* decision, which extended Judge Learned Hand's 'abstraction test' in *Nichols*, itself a landmark test to distinguish between the idea and expression in a given work, to computer programs. Protection of a programmer's right over his program necessarily entails an examination of the protectable and the non-protectable elements within the program, both from a literal and non-literal perspective. The test advanced is not truly a novel, or even, distinct method of extracting what is copyrightable and what is not; it is simply an improvement on prior tests in response to the complexities of a computer program.

With the expansion of copyright law in diverse sectors such as computer technology, news aggregators, search engine formats, and even video games, the idea-expression dichotomy, a fundamental tenet which has guided judges and jurists for more than a century in their attempts to draw out that which is copyrightable from a certain work, still holds relevance, especially in light of the *Altai* interpretation of this dichotomy, in this modern age.

Computer programs are unique works as they serve as a means to achieve various ends, and granting a wide protection may limit others to perform tasks most efficiently. Such consequences are evidenced after the grant of a patent. Thus, the idea-expression dichotomy demarcates the areas upon which copyright has dominion, and to enjoy a lawful monopoly over an idea, one 'must satisfy the more stringent standards imposed by the patent laws.'[52]

However, the non-use of the *Altai* test to justify monopolies in ideas, as done in the earlier proceedings in *Oracle*, would be to destroy the very fabric of copyright law and render it junk. Java APIs constitute building blocks for new inventions and improvements, especially in the smart phone sector, and its use is necessitated by developers primarily due to considerations of interoperability and compatibility with existing platforms. By allowing Oracle to claim monopoly over what is a technical solution to such compatibility issues, the Federal Court had rendered the dichotomy null and void.

Thankfully, such an interpretation has been rejected by the U.S. Supreme Court, albeit by taking recourse to the 'fair use' doctrine, and not the *Altai* syllogism; if the matter comes up before Indian courts, it would serve the interests of all fledgling Indian developers if the courts adopt the *Altai* test as the torch lighting the future course of copyright jurisprudence within India. After all, computer programmes are literary works within the Indian copyright jurisprudence as well, and the syllogism used in *Altai* should be applicable within India too. In sum, competitive markets, including the software market, must not be allowed to collapse under the weight of leviathan entities, who, by virtue of their dominance, would have a chilling effect upon both competition and innovation within that market, by ostensibly receiving copyright protection for non-protectable elements.

## References


1 U.S. Copyright Act of 1976, 17 U.S.C. § 102 (2012); Copyright Act 1957, Section 13 (India).

2 *Harper & Row, Publishers, Inc.* v *Nation Enterprises*, 471 U.S. 539 (1985) (stating: "Ideas are denied protection to encourage dissemination, and expression is protected to provide incentives for creation.").

3 Kurtz L A, Speaking to the ghost: Idea and expression in copyright, *Miami Law Review*, 47 (1993) 1221, 1223.

4 *Moreau* v *St. Vincent* [1950] Ex.C.R. 198, 12 C.P.R. 32, 3 D.LR. 713 (stating: "It is ... an elementary principle of copyright law that an author has no copyright in ideas but only in his expression of them. The law of copyright does not give him any monopoly in the use of the ideas with which he deals or any property in them, even if they are original. His copyright is confined to the literary work in which he has expressed them. The ideas are public property, the literary work is his own. Every one may freely adopt and use the ideas but no one may copy his literary work without his consent.").

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6 *Designer Guild Limited* v *Russell Williams (Textiles) Limited* [2001] E.C.D.R. 10 (Hoffman LJ) (stating: "Plainly there can be no copyright in an idea which is merely in the head, which has not been expressed in copyrightable form, as a literary, dramatic, musical or artistic work. But the distinction between ideas and expression cannot mean anything so trivial as that. On the other hand, every element in the expression of an artistic work (unless it got there by accident or compulsion) is the expression of an idea on the part of the author. It represents her choice to paint stripes rather than polka dots, flowers rather than tadpoles, use one colour and brush technique rather than another, and so on. The expression of these ideas is protected...").

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9 Merges R P and others, *Intellectual Property in the New Technological Age* (5th ed., Aspen Publishers), 2010, 11 – 16.

10 *Millar* v *Taylor*, (1769) 4 Burr. 230, 238 (Mansfield LJ) (stating: "...it is just, that an author should reap the pecuniary profits of his own ingenuity and labour").

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13 Hettinger E C, Justifying intellectual property, *Philosophy and Public Affairs*, 1989, 18.

14 *Donoghue* v *Allied Newspapers Ltd.* (1937) 3 All ER 503 (Farwell LJ) (stating: "If the idea, however original, is nothing more than an idea, and is not put into any form of words, or any form of expression such as a picture, then there is no such thing as copyright at all").

15 *Computer Assocs. Int'l, Inc.* v *Altai, Inc*. 982 F.2d 693 (2d Cir. 1992).

16 *R G Anand* v *Deluxe Films*, AIR 1978 SC 1613.

17 Abinava Sankar K P&Nikhil CharyL R, The idea-expression dichotomy: Indianizing an international debate, *Journal of International Commercial Law and Technology*, 3 (2008) 129.

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19 Goldstein P, *Goldstein on Copyright*, (3rd ed., Aspen Publishers), 2007.

20 *Nichols* v *Universal Pictures Corp*., 45 F.2d 119, 121 (2d Cir. 1930) (Learned Hand J) (stating: "Upon any work, and especially upon a play, a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may perhaps be no more than the most general statement of what the play is about, and at times mght consist only of its title; but there is a point in this series of abstractions where they are no longer protected, since otherwise the playwright could prevent the use of is "ideas," to which, apart from their expression, his property is never extended. Nobody has ever been able to fix that boundary, and nobody ever can.").

21 *Baker* v *Selden*, 101 U.S. 99(1879) (stating: "To give to the author of a book an exclusive property in the art described therein, when no examination of its novelty has ever been officially made, would be a surprise and a fraud upon the public. That is the process of letters-patent, not of copyright…The fact that the art described in the book by illustrations of lines and figures which are reproduced in practice in the application of the art, makes no difference. Those illustrations are the mere language employed by the author to convey his ideas more clearly. Had he used words of description instead of diagrams (which merely stand in the place of words), there could not be the slightest doubt that others, applying the art to practical use, might lawfully draw the lines and diagrams which were in the author's mind, and which he thus described by words in his book. The copyright of a work on mathematical science cannot give to the author an exclusive right to the methods of operation which he propounds, or to the diagrams which he employs to explain them, so as to prevent an engineer from using them whenever occasion requires.").

22 U.S. Copyright Act, 17 U.S. Code § 102(b) (2012).

23 *Lotus Dev. Corp.* v *Borland Int'l, Inc*. 49 F.3d 807, 816 (1st Cir. 1995) (holding: 'A computer program's menu command hierarchy is uncopyrightable as it is a "method of operation".).

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25 *Anil Gupta* v *Kunal Dasgupta* AIR 2002 Del 279.

26 *Herbert Rosenthal Jewelry Corp.* v *Kalpakian* 446 F.2d 738 (9th Cir. 1971).

27 *NEC Corporation and NEC Electronics Inc.* v *INTEL Corporation* WL 67434 (N.D.Cal 1989)

28 *Bucklew* v *Hawkins, Ash, Baptie & Co.*, 329 F.3d 923, 929, 66 U.S.P.Q.2d 1820 (7th Cir. 2003).

29 *Cain* v *Universal Pictures Co.*, 47 F. Supp. 1013, 1017 (S.D. Cal. 1942).

30 See also, *Corelli* v *Gray* (1913) 29 TLR 570 (Serjeant J).

31 *Roth Greeting Cards* v *United Card Co.* 429 F.2d 1106 (9th Cir. 1970).

32 *Whelan Assoc., Inc.* v *Jaslow Dental Lab*., Inc., 797 F.2d 1222, 1229 (3d Cir. 1986). (stating: "Although the Code does not use the terms "sequence," "order," or "structure," it is clear from the definition of compilations and derivative works, and the protection afforded them, that Congress was aware of the fact that the sequencing and ordering of materials could be copyrighted, i.e. that the sequence and order could be parts of the expression, not the idea, of a work.").

33 *Atari, Inc.* v *Amusement World, Inc.*, 547 F. Supp. 222, 226 (D. Md. 1981); Broderbund Software, Inc. v. Unison World, 648 F. Supp. 1127, 1131 (N.D. Cal. 1986).

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35 *Kepner-Tregoe Inc* v. *Carabio* 203 U.S.P.Q. (BNA) 124, 131 (E.D. Mich. 1979) (stating: "...total concept and feel applicable to artistic works, not to useful arts...In cases like this one, more penetrating analysis is called for. Instinct alone will not serve. Unthinking application of the 'substantial similarity' test may produce the wrong result.").

36 Copyright Act 1957, Section 2(o).

37 *Gates Rubber Co.* v *Bando Chemical Industries*, Ltd., 9 F.3d 823 U.S.P.Q.2d 1503 (10th Cir. 1993).

38 *Arnstein* v *Porter*, 154 F.2d 464 (2d Cir. 1946).

39 *Williams Electronics Inc.* v *Arctic International Inc* 685 F.2d 870, 215 U.S.P.Q. 405 (3rd Cir. 1982).

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41 *Engineering Dynamics, Inc.* v *Structural Software, Inc.*, 26 F.3d 31 U.S.P.Q.2d 1086 (9th Cir. 1994) (stating: "...we adopt the Gates Rubber/Altai/Nimmer method to consider EDI's user interface, input formats and output reports."); *Computer Mgmt. Assistance Co.* v *Robert F DeCastro Inc* 20 F.3d 396, 400, 55 U.S.P.Q.2d 1643 (5th Cir. 2000); *Tetris Holding, LLC* v *Xio Interactive, Inc.,* 863 F.Supp.2d 394 (D.N.J. 2012).

42 *Oracle Am., Inc.* v *Google Inc.*, 872 F. Supp. 2d 974 (N.D. Cal. 2012); *Oracle Am., Inc. v. Google Inc.,* 750 F.3d 1339, 1348 (Fed. Cir. 2014); *Oracle Am., Inc.* v *Google Inc.*, No. C 10-03561, 2016 WL 3181206 (N.D. Cal. 2016); *Oracle America, Inc.* v *Google, Inc*., No. 17-1118 (Fed. Cir. 2018).

43 U.S. Copyright Act, 17 U.S. Code § 102(b) (2012).

44 *Feist Publications Inc.* v *Rural Telephone Service Co*., (1990) 499 U.S. 340.

45 *Johnson Controls, Inc.* v *Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175-76 (9th Cir. 1989).

46 U.S. Const. Article l, § 8, cl. 10.

47 *Google LLC* v *Oracle America, Inc.,* 593 U.S. ___ (2021), 141 S. Ct. 1183209 L. Ed. 2d 311 at 35.

48 The four prongs to satisfy the fair use test, as laid down by the Supreme Court in *Campbell* v *Acuff-Rose Music, Inc.*, 510 U. S. 569, are:

i. the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
ii. the nature of the copyrighted work;
iii. the amount and substantiality of the portion used in relation to the copyrighted work as a whole;
iv. and the effect of the use upon the potential market for or value of the copyrighted work.

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