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IP Protection for Love: Dating App's Feuds and Foes

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IP Protection for Love: Dating App's Feuds and Foes

Cover Page Footnote

J.D. Candidate, 2024, University of Georgia School of Law. Thank you to my friends, family, and mentors for their steadfast support.

***IP PROTECTION FOR LOVE: DATING APP'S
FEUDS AND FOES***

*Meredith Williams**

* J.D. Candidate, 2024, University of Georgia School of Law. Thank you to my friends, family, and mentors for their steadfast support.

TABLE OF CONTENTS

I.	INTRODUCTION	430
II.	BACKGROUND	431
	A. ONLINE DATING: A HISTORY	431
	B. APP OVERLOAD	433
	C. FUTURISTIC DATING: AI MATCHMAKING.....	435
III.	ANALYSIS.....	436
	A. §101’S APPLICATION TO DIGITAL INTERFACE IMPROVEMENTS .	436
	B. SHOULD AI MATCHMAKING PROCESSES BE PATENTABLE?	439
VI.	CONCLUSION.....	443

I. INTRODUCTION

Romantic relationships of yesteryear were born “in the wild.” People met in class, at a bar, coffee shop, or other public settings. Today, the script has changed and—especially for those seeking love in a metropolis— “just get on the apps!” is often-shared advice. Indeed, modern dating and dating apps have become ubiquitous, with nearly 50 percent of 18–29-year old’s reporting use of online dating platforms in their lives.¹ While at the individual level, experiences vary, there is little doubt about the notoriety and success of large companies like Match, Tinder, Bumble, and Grindr.²

It may be unsettling to discuss an app’s profit incentives that facilitate human connection, but these apps are not non-profits. To their employees, shareholders, and managers, it is just another day on the job, and money must be on the table.

Dating apps proliferated after Tinder—in 2012—took the market by storm.³ There are countless dating apps to choose from with an estimated 8,000 options.⁴ Like any competitive industry, these companies must figure out how to distinguish themselves. One method of doing so is intellectual property protection. Since Tinder was an initial rising star, other apps were accused of subsequently mimicking the company’s strategies.⁵

A poignant example of such a distinguishing factor is Tinder’s “swipe right” feature.⁶ It recently has brought rise to litigation and surfaced questions of how the apps can compete without infringing on each other’s intellectual property rights. This Note explores the patentability of dating apps’ digital interfaces and the future of Intellectual Property (“IP”) in dating apps.

¹ Emily A. Vogels, *10 facts about Americans and online dating in 2019*, PEW RSCH. CTR. (Feb. 6, 2020), [https://www.pewresearch.org/fact-tank/2020/02/06/10-facts-about-americans-and-online-dating/#:~:text=1Three%2Din%2Dten%20U.S.,50%20and%20older%20\(16%25\)](https://www.pewresearch.org/fact-tank/2020/02/06/10-facts-about-americans-and-online-dating/#:~:text=1Three%2Din%2Dten%20U.S.,50%20and%20older%20(16%25).).

² Andrej Hadji-Vailev, *25 Online Dating Statistics & Trends in 2023*, CLOUDWARDS (Mar. 16, 2023), <https://www.cloudwards.net/online-dating-statistics/>.

³ Ashley Fetters, *THE FIVE YEARS THAT CHANGED DATING*, THE ATLANTIC (Dec. 21, 2018), <https://www.theatlantic.com/family/archive/2018/12/tinder-changed-dating/578698/>.

⁴ Hadji-Vailev, *supra* note 2.

⁵ Sarah O’Brien, *Tinder sues dating app Bumble*, CNN BUSINESS (Mar. 17, 2018), <https://money.cnn.com/2018/03/17/technology/tinder-bumble-lawsuit/index.html#:~:text=Bumble%20copied%20the%20%22world%2Dchanging,developed%20confidentially%20while%20at%20Tinder.%22>.

⁶ Andy Onopriyenko & Helen Stetsenko, *List of Tinder Features to Consider When Developing a Dating Startup*, KEYUA (Sept. 2, 2021), <https://keyua.org/blog/list-of-tinder-features/>.

II. BACKGROUND

Before diving into the specific feud and legal implications involved with two popular dating apps, some relevant context will be revealed. This section will discuss a brief history of online dating, the explosion of online applications, and an example of what is in store for the future of the dating app world.

A. ONLINE DATING: A HISTORY

How did online dating pervade our societies? A look into the genesis and development throughout the past few decades provides insight into this question.

Match.com was the first company to introduce the concept of online dating.⁷ They still exist today along with others such as eHarmony. Their methods include, for example, eHarmony using extremely detailed questionnaires.⁸ The eHarmony approach boasts to predict compatibility based on user's answers.⁹ This may work considering "71 percent of female users and 69 percent of male users find their future spouse on eHarmony within their first year on the site."¹⁰ But despite eHarmony's initial popularity and success, new players dominate today. An online dating experience geared toward younger demographics was bound to surface.

By 2013, people in their late teens to early thirties finally used online dating; their number grew by 170 percent.¹¹ Dating apps like Tinder did not use detailed questionnaires, though they employed a swipe.¹²

"Swiping right" is a familiar vocabulary term for the modern dater. But what does it mean? Googling the phrase pulls up the definition "(on the online dating app Tinder) indicate[s] that one finds someone attractive by moving one's finger

⁷ Kayla Kuefler, *Love at First Swipe: The Evolution of Online Dating*, STYLIGHT, <https://www.stylight.com/Magazine/Lifestyle/Love-First-Swipe-Evolution-Online-Dating/#:~:text=In%201995%2C%20the%20world's%20first,the%20form%20of%20Match.com>.

⁸ Ellen Glover, *What Makes 'Swipe Right' Such a Compelling UX Feature?*, BUILT IN (May 3, 2022), <https://builtin.com/design-ux/tinder-swipe-design>.

⁹ Briallyn Smith, *5 Reasons to Take eHarmony's Questionnaire*, MUO (Mar. 15, 2017), <https://www.makeuseof.com/tag/eharmony-questionnaire/>.

¹⁰ *Id.*

¹¹ Glover, *supra* note 8.

¹² Stetsenko & Onopriyenko, *supra* note 6.

to the right across an image of them on a touchscreen.”¹³ This innovative feature revolutionized, or at least drastically changed the online dating world.¹⁴

There are several hypotheses regarding the success of the swiping feature. A compelling explanation explores how the feature interacts with the human brain. The gesture “employs what is called a variable reward schedule. Similar to a slot machine, each swipe builds curiosity, and the brain is intermittently rewarded with dopamine when you get a match.”¹⁵ The game-like aspect of Tinder has created somewhat of an addiction for many users.¹⁶ To put the potential for addiction in context, Tinder boasts 1.6 billion daily swipes.¹⁷ Since billions are difficult to conceptualize, 1.6 billion seconds equates to over 50 years.¹⁸ That is, objectively, an enormous quantity of swipes.

The current bottom line: “[s]wiping singles are big money – it is estimated that the dating market is worth \$12bn [] globally.”¹⁹ So, how does a person select what dating app to use amongst the litanies? Each app is known societally for different features or reputations.²⁰ Tinder is known for the swipe and for those pursuing physical connection.²¹

Bumble, of course, has its own reputation within the dating app sphere. “Bumble was founded by three ex-Tinder’s co-founders, Whitney Wolfe Herd, Chris Gulczynski[,] and Sarah Mick.”²² Bumble distinguishes itself by only allowing women to initiate conversations on the app.²³

¹³ GOOGLE, <https://www.google.com/> (type “swipe right” into the search bar; then press “Enter” to search) (last visited Jan. 12, 2023).

¹⁴ Lydia Adeli, *Infographic Timeline: 10 Years of Tinder*, VISUALCAPITALIST (Aug. 23, 2022), <https://www.visualcapitalist.com/infographic-timeline-10-years-of-tinder/#:~:text=The%20swipe%20feature%20was%20an,was%20introduced%20back%20in%202012.>

¹⁵ Glover, *supra* note 8.

¹⁶ *Id.*

¹⁷ Leah Stodart, *Which dating app should you use? This guide can help you figure it out.*, MASHABLE (Apr. 10, 2023), <https://mashable.com/roundup/best-dating-apps>.

¹⁸ GOOGLE, <https://www.google.com/> (type “how many years is 1.6 billion seconds?” into the search bar; then press “Enter” to search) (last visited Apr. 18, 2023).

¹⁹ Ammar Kalia, *Newly Single? A beginner’s guide to the best dating apps*, THE GUARDIAN, <https://www.theguardian.com/lifeandstyle/2019/dec/02/newly-single-a-beginners-guide-to-the-best-dating-apps> (last modified Apr. 29, 2020).

²⁰ Stodart, *supra* note 17.

²¹ Kalia, *supra* note 19.

²² Yang Yu, *Match Group (Tinder) v. Bumble: Online Dating Company That Owns Tinder Sues Dating App Founders by Tinder’s Co-Founders*, JOLT (Mar. 26, 2018), <https://jolt.law.harvard.edu/digest/match-group-tinder-v-bumble-online-dating-company-which-owns-tinder-sues-dating-app-founders-by-tinders-co-founders>.

²³ *Id.*

Since Bumble's founding in 2014, it has been a strong competitor to Tinder.²⁴ A 2017 Forbes article listed that "[Bumble] had acquired more than 22 million registered users and achieved a 70 [percent] year-over-year growth, a figure that was ten times larger than Tinder."²⁵ Further, while Match owns dozens of apps, Bumble owns three, including Badoo, "an older app that's more popular in Europe and Latin America, [that] is still the second most downloaded dating app in the world behind Tinder."²⁶

Match, Tinder's parent company, offered to acquire Bumble in 2017, but Bumble declined the offer.²⁷ Some sources believe "the [intellectual property] lawsuit against Bumble may serve as a 'bargaining chip' by Match to pressurize Bumble to return to the negotiation of the previously-declined acquisition deal: The idea is that if Bumble is acquired by Match Group, the lawsuit [would] necessarily be dropped."²⁸

The two companies have a complex relationship. "Today, Bumble's eponymous, female-oriented app is Tinder's closest competitor in the U.S."²⁹

B. APP OVERLOAD

It is important to have an overview of the scope of the online application boom to understand the magnitude of competition between dating apps in today's market.

In the modern age of technology, many entrepreneurs seek to launch their ideas through Apple or Android app stores.³⁰ It should not come as a shock, considering that across all app store platforms (i.e., Google Play and the Apple App Store), around 5.1 million apps are available to download.³¹

²⁴ *Id.*

²⁵ *Id.*

²⁶ Leo Sun, *Could Bumble Become the Next Match Group?*, THE MOTLEY FOOL (Mar. 19, 2022, 11:08 AM), <https://www.fool.com/investing/2022/03/19/could-bumble-become-the-next-match-group/>.

²⁷ Yu, *supra* note 22.

²⁸ *Id.*

²⁹ Sun, *supra* note 26.

³⁰ Danish Raza, *Should I Launch on the Android or iOS App Store First?*, NET SOLUTIONS (Feb. 3, 2023), <https://www.netsolutions.com/insights/launch-app-on-android-or-ios-app-store-first/>.

³¹ L. Ceci, *Number of apps available in leading app stores Q3 2022*, STATISTA (Nov. 8, 2022), <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>.

Like other business ventures, online applications are eligible for many forms of intellectual property protection.³² Their logos can be trademarked, the visual arts created on them can be copyrighted, and their interface can be patented.³³

Aside from the colossal size of the app market, there are other motivations for creating an app. “[T]he invention of software apps can be seen as related to demand-pull and technology-push innovation factors,” but there is little formal research on the factors that drive app production.³⁴ App creators have significant power over consumers and competitors.³⁵ “[S]ellers [can] slow down performance, add more desirable, useful, and expensive features later on, or even discontinue some older versions of apps”³⁶

Apps have also given rise to entirely new industries, “such as UBER, where the firms own few physical assets and their main ‘product’ is the software that drives the apps and their business.”³⁷ Arguably, Tinder and some other dating apps fall into this category because the majority of users utilize the free interface, not a tangible, fungible item available through the app.³⁸

Algorithms are another important method of app differentiation. For instance, dating apps like Tinder used to use an Elo rating system³⁹ and score “to gauge how other profiles interacted with yours[,] [i]n addition to logging your own Likes (right swipes) and Nopes (left swipes)”⁴⁰ Tinder no longer uses this system, and their position is that the more time you spend on the app, the better your chances are of a good match.⁴¹

³² Bryan Wheelock, *A guide for protecting your app with a patent, trademark, or copyright*, APP DEVELOPER MAGAZINE (Dec. 12, 2017), <https://appdeveloper magazine.com/A-guide-for-protecting-your-app-with-a-patent,-trademark,-or-copyright/>.

³³ *Id.*

³⁴ German Blanco, Rajeev K. Goel & Rati Ram, *What Drives the Production and Diffusion of Mobile Apps? An International Investigation*, 44 MANAGERIAL & DECISION ECON. 828, 829 (2022), https://onlinelibrary.wiley.com/doi/epdf/10.1002/mde.3714?saml_referrer.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ Stetsenko & Onopriyenko, *supra* note 6.

³⁹ Raghav Mittal, *What is an ELO Rating?*, MEDIUM (Sept. 11, 2020), <https://medium.com/purple-theory/what-is-elo-rating-c4eb7a9061e0> (a rating system originally used in Chess; the score is inferred from the number of wins, losses, and draws, with the winning player taking points from the losing one).

⁴⁰ Anna Iovine, *How do all the best dating app algorithms work?*, MASHABLE (Oct. 9, 2021), <https://mashable.com/article/tinder-bumble-hinge-okcupid-grindr-dating-app-algorithms>.

⁴¹ *Id.*

“Hinge uses the Gale-Shapely algorithm.”⁴² This algorithm can be explained by a hypothetical group of ten men and ten women.⁴³ “[O]ne group (either the men or women) pick their first choice, and if they get rejected they move on to their second choice. Continue until none of the people left want to get matched anymore.”⁴⁴

While app creators leave us in the dark regarding their deepest motivations, production of apps is a popular way for companies to launch and, as we will see, can rise to intellectual property litigation.⁴⁵

C. FUTURISTIC DATING: AI MATCHMAKING

Even in the backdrop of dating apps’ history and current landscape, the question of what is to come lingers. The possibilities are endless, but this Note will examine one app preparing for its launch.

If online dating does not make the average person uncomfortable, the newest dating app concept might. William Tillman and TOT Partners have announced their advisory status regarding the new dating app, “The Code.”⁴⁶ “The Code is a dating application that uses facial recognition, biometrics, and artificial intelligence to curate and suggest potential matches.”⁴⁷ The concept elevates dating apps to a new scale. Further, the company claims to own intellectual property “related to the use of anthropology, evolutionary biology, and neurophysiology to drive matchmaking.”⁴⁸

The Code’s overarching plan is not necessarily a novel one. The desire to create dating apps that use artificial intelligence comes from the push for *better* matches on apps.⁴⁹ The app Badoo allows people to search for partners who

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ Match Grp., LLC v. Bumble Trading Inc., No. 6:18-CV-00080-ADA, 2018 U.S. Dist. LEXIS 235353, (W.D. Tex. Dec. 18, 2018).

⁴⁶ *William Tillman’s TOT Partners retained to advise first-to-market IP for dating apps*, NEWS DIRECT (July 20, 2022, 5:29 PM), <https://newsdirect.com/news/william-tillmans-tot-partners-retained-to-advise-first-to-market-ip-for-dating-apps-549960925>.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ Andrei Klubnikin, *AI is the new frontier for dating apps. Here’s proof [Updated]*, ITREX GRP. (Sept. 27, 2022), [https://itrexgroup.com/blog/ai-for-dating-apps/#:~:text=Artificial%20Intelligence%20Matchmaker%20\(AIMM\)%20is,introducing%20them%20to%20other%20people](https://itrexgroup.com/blog/ai-for-dating-apps/#:~:text=Artificial%20Intelligence%20Matchmaker%20(AIMM)%20is,introducing%20them%20to%20other%20people).

resemble their favorite celebrity through AI features.⁵⁰ Another app, Artificial Intelligence Matchmaker (“AIMM”) involves a “virtual assistant [that] communicates with a person for at least one week before introducing them to other people.”⁵¹ The app also only provides one match at a time and lets the two people learn some about each other in aim to facilitate more thoughtful decisions.⁵²

In the end, AI and matchmaking are a rapidly growing duo. Yet, there are utilitarian uses for this duo. AI can “flag bot accounts with 99 [percent] accuracy based on [] IP addresses, messages, and stolen images.”⁵³ Match.com’s chatbot can “suggest ideal date locations in your area.”⁵⁴ It can even correct spelling and grammar mistakes, which are high on your date’s wish list.⁵⁵

Many of these AI-driven changes to dating apps are positive. Innovation is a dominant driving factor in a capitalist society, so we can expect the myriad ways to meet others online to continue.⁵⁶ Regardless of personal feelings toward these changes, the legal question of whether the AI algorithm is patentable remains unanswered. This Note will delve into the competing arguments.

III. ANALYSIS

In examining the patentability of past, present, and future dating apps, this Note will first apply Section 101 of the Patent Act and then ponder whether AI Matchmaking changes the game per se.

A. §101’S APPLICATION TO DIGITAL INTERFACE IMPROVEMENTS

Section 101 of the Patent Act outlines patentable subject matter as: “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.”⁵⁷

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ 35 U.S.C. § 101 (2022).

The purpose of §101 is to protect “the useful arts.”⁵⁸ A patent can be granted for “a new means of achieving a useful end or result.”⁵⁹ However, “laws of nature, physical phenomena, and abstract ideas” are not patentable.⁶⁰

The Supreme Court has adopted a two-step test to distinguish between patents that “claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those [respective] concepts.”⁶¹ First, the court inquires whether one of the patent-*ineligible* categories is implicated.⁶² Second, the court “looks more precisely at what the asserted claim elements add—specifically, whether the elements identify an ‘inventive concept’ in the application of the ineligible matter to which the claim is directed.”⁶³

Match Group, LLC v. Bumble Trading Inc., No. 6:18-CV-00080-ADA, 2018 U.S. Dist. LEXIS 235353, (W.D. Tex. Dec. 18, 2018), involved a dispute over the eligibility of two of Tinder’s patents.⁶⁴ Bumble filed a motion to dismiss, claiming “the asserted patents [were] patent ineligible under 35 U.S.C. §101 because they [were] directed to the abstract concepts of matchmaking and picking certain cards out of a stack.”⁶⁵ This motion was ultimately denied by the Texas Western District Court.⁶⁶

Since Tinder and Match are affiliates, “Match prosecuted the Tinder innovations as a continuation-in-part (“CIP”) of the Match.com application.”⁶⁷ These – Tinder’s – patent applications focused on “improving prior art matchmaking systems in two relevant ways: (1) not allowing communication unless and until both sides have indicated a mutual positive preference; and (2) a card-based interface characterized in part by a specific gesture, labeled in the patents as a ‘swipe.’”⁶⁸

The Western District Court of Texas relied heavily on *Alice Corp. v. CLS Bank International*, which analyzed the abstract idea patent ineligibility concept in

⁵⁸ 1 DONALD S. CHISUM, CHISUM ON PATENTS § 1.01 (2022) (citing U.S. CONST. art. I, § 8, cl.8).

⁵⁹ *Id.*

⁶⁰ *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).

⁶¹ *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208 at *217 (2014).

⁶² *Match Grp., LLC*, 2018 U.S. Dist. LEXIS 235353, at *10.

⁶³ *Id.* at *11.

⁶⁴ *Id.* at *5-6.

⁶⁵ *Id.* at *4.

⁶⁶ *Id.*

⁶⁷ *Id.* at *6.

⁶⁸ *Id.* at *6-7.

detail.⁶⁹ In *Alice Corp.*, the Court ultimately decided that an abstract idea can be patentable if the claim transforms the idea into a new and useful end.⁷⁰

The Western District Court in Texas also displays a noteworthy preference in favor of patent protection.⁷¹ “There is a presumption that a patent is valid.”⁷² “The defendant bears the burden of proving invalidity by clear and convincing evidence.”⁷³ Where, as in this case, the defendant alleges ineligible subject matter, “dismissal will generally be unwarranted unless the ‘only plausible reading of the patent [is] that there is clear and convincing evidence of ineligibility.’”⁷⁴

Applying the two-step test from *Alice*, *Match Group* confirmed that “software-based innovations can make ‘non-abstract improvements to computer technology’ and be deemed patent-eligible subject matter” under step one.⁷⁵ “[U]ser interface claims are patent eligible . . . because they ‘recite a specific improvement over prior systems, resulting in an improved user interface for electronic devices.’”⁷⁶

Since computer-driven inventions generally implicate the abstract idea exception to Section 101, courts move to step two.⁷⁷ Step two has been “described as ‘a search for an inventive concept – i.e. an element or combination of elements that is sufficient to ensure that a patent in practice amounts to significantly more than a patent upon the ineligible concept itself.’”⁷⁸

In the context of Tinder’s ‘023 patent, the Western District Court of Texas classified it as a new user interface.⁷⁹ The interface is a “graphical representation of [a first online dating profile] as a first card in a stack of cards,’ with a processor to ‘detect a gesture,’ the gesture ‘corresponding to a positive preference indication,’ and where the system can detect a ‘right swiping direction’ associated with the positive gesture.”⁸⁰ That constitutes “improve[d] existing interface technology sufficient[] to survive a motion to dismiss.”⁸¹ This classification is anchored in reasoning that when a user performs the swiping gesture, “the interface is modified to both show a new item of information and to

⁶⁹ *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208 (2014).

⁷⁰ *Id.* at 222.

⁷¹ *Match Grp., LLC*, 2018 U.S. Dist. LEXIS 235353, at *21.

⁷² *Id.* (citations omitted).

⁷³ *Id.* (citations omitted).

⁷⁴ *Alice Corp.*, 573 U.S. at 217.

⁷⁵ *Match Grp., LLC*, 2018 U.S. Dist. LEXIS 235353, at *12-13.

⁷⁶ *Id.* at *13 (citations omitted).

⁷⁷ *Id.* at *11; *supra* note 57.

⁷⁸ *Id.* at *11.

⁷⁹ *Id.* at *16.

⁸⁰ *Id.* at *16-17.

⁸¹ *Id.* at *16.

automatically remove the first card. This improvement has been a commercial success because it has increased ‘the speed of a user’s navigation through [potential matches].....’⁸²

The ‘811 Patent is eligible for analogous reasons. ‘811 “describes indicating preferences by use of a ‘swiping gesture,’ and describes removing one profile and showing another profile after receiving such a gesture.”⁸³ This patent survives step one of *Alice* because it is a non-abstract subject matter (user interface) which “describes narrower functionality and more specifics about the flow of the improved interface and system.”⁸⁴

The motion to dismiss was denied without prejudice; thus, the claims could be raised again.⁸⁵ This leaves a possibility that Tinder’s swipe and interface patents might not stay under lock and key forever.

B. SHOULD AI MATCHMAKING PROCESSES BE PATENTABLE?

Artificial intelligence is rapidly entering every corner of modern society, so there are predictably legal implications.⁸⁶ There are important considerations with artificial intelligence-directed patent applications. “First, it is always important to look at the actual language of the claims.”⁸⁷ The language should state the subject matter of the claim precisely for the invention.⁸⁸ “Second, in considering the roles played by individual limitations, it is important to read the claims ‘in light of the specification.’”⁸⁹ The claim should specify what problem it is solving and how discovery of the solution happened.⁹⁰ The fundamental question “is whether the claim is directed to such a basic building block of scientific or technological activity as to inhibit future innovation.....”⁹¹ Alternatively, the claim could be “directed to a tangible application that serves a

⁸² *Id.* at *16, *18.

⁸³ *Id.* at *18.

⁸⁴ *Id.* at *18-19.

⁸⁵ *Id.* at *22.

⁸⁶ Thomas W. Brooke et al., Image-Generating AI: Trends and Legal Challenges, HOLLAND & KNIGHT (Dec. 14, 2022), <https://www.hklaw.com/en/insights/publications/2022/12/imagegenerating-ai-trends-and-legal-challenges>.

⁸⁷ 18A DONALD S. CHISUM, CHISUM ON PATENTS § SCG-1113 (2022).

⁸⁸ *Id.* (citations omitted).

⁸⁹ *Id.* (citations omitted).

⁹⁰ *Id.*

⁹¹ *Id.* (citations omitted).

new and useful end.”⁹² “While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.”⁹³ The bottom line is, “[t]o the extent artificial intelligence inventions – or the present ‘invention’ – involve an inventive concept, they could be patentable even if they have, at their core, an abstract concept.”⁹⁴ So, the search is again for an inventive concept, like in *Alice*.

Artificial intelligence is at the core of the new dating app, The Code’s patent.⁹⁵ The detailed description describes “systems and methods for identifying faces with similar facial features and/or other facial characteristics.”⁹⁶ It states:

[A]n artificial intelligence (AI) engine (e.g., implemented as a biometric software application, a hardware device, and/or using a combination of hardware and software), may be utilized, where the artificial intelligence engine performs computer vision to analyze facial images and performs process to enhance or maximize the chance of identifying, for a given identified face, one or more matching (similar) faces in other facial images.⁹⁷

The user employs a process, which simultaneously trains the system, where he or she “selects images of preferred faces from a group of digital images The images may be tagged using an artificial intelligence computer vision system with various identified facial characteristics.”⁹⁸ Some listed characteristics are eye color, lip shape, forehead lines, hair, eyebrow shape, and more.⁹⁹ “The artificial intelligence engine (which may be used by the matching algorithm) can learn or be adjusted so that the prediction of the target user’s match is more accurate based on perceived ‘sexual chemistry’ from the image.”¹⁰⁰

⁹² *Id.* (citations omitted).

⁹³ *Id.* (quoting *Mackay Radio & Tel. Co. v. Radio Corp. of America*, 306 U.S. 86, 94 (1939)).

⁹⁴ *Blue Spike, LLC v. Google Inc.*, No. 14-CV-01650-YGR, 2015 U.S. Dist. LEXIS 119382, at *16-17 (N.D. Cal. Sept. 8, 2015).

⁹⁵ U.S. Patent No. 11,263,436 (filed Dec. 19, 2008); THE CODE, <https://thecodedating.com/> (last visited Mar. 28, 2023).

⁹⁶ *Systems and Methods for Matching Facial Images to Reference Images*, JUSTIA (Aug. 24, 2021), <https://patents.justia.com/patent/11263436>.

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

This methodology is not entirely new. Match.com previously used facial recognition technology on its platform.¹⁰¹ The company, in partnership with Three Day rule, another dating service, uses this technology.¹⁰² They offered the program at \$5,000 for six months.¹⁰³ This technology focused on face shape; users would send in photos of their exes, and the technology would calculate their type this way.¹⁰⁴ Information is not readily accessible regarding whether Match still participates in this partnership and uses this technology. Enter, The Code. But how would a patent infringement suit over AI-dominated matchmaking be analyzed in a court of law?

This Note argues that a court should apply the two-step Alice test to an AI-oriented patent. The Code dating app's patent application, however, contains some troubling terminology. First, under Alice, we ask if the patent is directed at a patent-ineligible subject matter.¹⁰⁵ On the one hand, it could be seen as an improvement to existing interface technology, as the court found in *Match v. Bumble*.¹⁰⁶ The possibility of the invention's categorization as "abstract" and thus patent-ineligible looms, however.

The Code must prove an inventive concept, even if its AI is using an abstract idea at its core. The patent application is not precise on why the similarity in facial features are the basis for matching. There is a basis, however, for the argument that people are attracted to those who look similar to themselves. "In one 2013 study in PLOS ONE journal, people were shown edited images of their partners' faces that included features from either a stranger's face or their own. Overall, people consistently preferred the edited face that most closely resembled their own."¹⁰⁷ Further, "[a] study from 2017 in PLOS Genetics looked at gene similarities in white couples and found that many couples shared ancestry" ¹⁰⁸ Maybe The Code is onto something, but genetic sexual attraction on its

¹⁰¹ *Why is dating website Match.com using facial recognition?*, GOV'T TECH. (June 11, 2014), <https://www.govtech.com/question-of-the-day/question-of-the-day-for-061214.html>.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ Samantha Murphy, *With Facial Recognition Partnership, Match.com Users Can Find Dates Based on Exes*, MASHABLE (June 10, 2014), <https://mashable.com/archive/match-facial-recognition>.

¹⁰⁵ *Alice Corp.*, 573 U.S. at 208.

¹⁰⁶ *Match Grp., LLC*, 2018 U.S. Dist. LEXIS 235353, at *13.

¹⁰⁷ Meg Walters, *The Reason We're Attracted to People Who Look Like Us*, GIDDY (Mar. 8, 2022), <https://getmegiddy.com/attracted-to-people-who-look-like-us#:~:text=It's%20true%3A%20Feeling%20attraction%20toward,erie%20resemblance%20to%20each%20other>.

¹⁰⁸ *Id.*

face seems to be a natural, patent-ineligible, phenomenon. I argue that attraction is similar to “a new mineral discovered in the earth or a new plant found in the wild [and] is not patentable subject matter.”¹⁰⁹ The occurrence of attraction between humans is largely understood to be genetic.¹¹⁰ Following that understanding, discovery of attraction does not constitute something new; there is nothing to protect.¹¹¹

The Supreme Court has identified laws of nature, natural phenomena, and abstract ideas as patent ineligible.¹¹² The Code claims to predict sexual attraction and chemistry through its patented technology.¹¹³ This begs the question of whether the company is trying to patent the underlying natural phenomenon of attraction. That argument would fail since “[t]he Supreme Court has explained that . . . ‘a novel and useful structure created with the aid of knowledge of some scientific truth’ is patentable.”¹¹⁴

In The Code’s patent application, one of the cited references is an article about the future of online dating.¹¹⁵ This article grapples with the limbo that dating apps are in: they have solved the problem of volume but not of quality control.¹¹⁶ One problem that Dawoon Kang, co-founder and co-CEO of Coffee Meets Bagel, perceives is that people are not in tune with what they want.¹¹⁷ “Better machine-learning could tailor your matches to your actions, rather than your stated desires.”¹¹⁸

In the United Kingdom, a dating app uses AI to match people “based on personality traits it decodes from their tweets.”¹¹⁹ Yet, many dating app corporate directors hope that their apps will never crack the AI code.¹²⁰ “The

¹⁰⁹ Diamond, 447 U.S. at 309.

¹¹⁰ Jackie Mansky, *The Dubious Science of Genetics-Based Dating*, SMITHSONIAN MAGAZINE (Feb. 14, 2018), <https://www.smithsonianmag.com/science-nature/dubious-science-genetics-based-dating-180968151/>.

¹¹¹ *Can genes be patented?* MEDICINEPLUS, <https://medlineplus.gov/genetics/understanding/testing/genepatents/#:~:text=Myriad%20Genetics%2C%20Inc.%2C%20the,so%20patents%20cannot%20be%20granted.> (last visited Apr. 18, 2023).

¹¹² *Alice Corp.*, 573 U.S. at 208.

¹¹³ THE CODE, *supra* note 96.

¹¹⁴ *What is Section 101 Rejection?*, BITLAW, <https://www.bitlaw.com/guidance/patent/what-is-section-101-rejection.html> (last visited Apr. 2, 2023).

¹¹⁵ U.S. Patent No. 11,263,436 (filed Dec. 19, 2008); THE CODE, <https://thecodedating.com/> (last visited Mar. 28, 2023).

¹¹⁶ Brittany L. Beckman, *What will online dating be like in 2030?*, MASHABLE (Feb. 14, 2019), <https://mashable.com/article/future-online-dating>.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

dating industry has zero incentive to create this perfect matching algorithm If the AI is too good, potential daters will leave platforms, depriving the apps of the customers they need to make money.”¹²¹

Several companies were already using DNA in 2019 to make matches.¹²² “The gene-matching evangelists propose that certain genes connected to your immune system, known as the major histocompatibility complex (MCH), govern who you’re attracted to.”¹²³ Unlike *The Code*, the companies using MHC results follow the line of thought and old cliché that opposites attract.¹²⁴

VI. CONCLUSION

Dating app interface features should be patentable so long as they meet the two-prong test established in *Alice*.¹²⁵ When dating apps utilize algorithms and features cushioned in artificial intelligence, we must ensure that future innovation remains easily facilitated. Allowing *The Code* to patent technology premised on such natural phenomena as a person’s physical attributes pushes the boundaries of protection afforded by patent law. A court would likely hold that their methods amount to using the abstract idea of attraction to a new and useful end. The thought of machine learning eventually being able to accurately predict who a person will be attracted to is unsettling yet exciting, considering multitude of factors determining the occurrence of attraction.¹²⁶ Yet, we must protect the use of a natural phenomenon (attraction) if coupled with an inventive concept under patent law.

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Alice Corp.*, 573 U.S. at 217.

¹²⁶ Brittany Loggins, *What Determines Sexual Attraction?*, VERYWELLMIND (Jan. 26, 2022), <https://www.verywellmind.com/what-determines-sexual-attraction-5199585>.