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Manipulative Matchmaking - A Legal and Ethical Assessment of Addictive AI Design in Dating Apps

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Abstract: This paper examines the deployment of manipulative and addictive design patterns in AI-driven dating applications, with particular attention to their legal treatment under the EU Artificial Intelligence Act and the European Convention on Human Rights. It argues that platforms such as Tinder and Hinge utilise emotionally persuasive interface features, ranging from gamified reward systems to algorithmic opacity, that condition user behaviour and compromise decisional autonomy. Drawing on behavioural science, affective computing, and platform governance literature, this article evaluates how manipulative design features in dating apps interfere with rights protected by Article 8 of the ECHR, particularly in relation to informational self-determination and psychological integrity. In parallel, it examines whether such systems could fall within the scope of prohibited manipulative AI under Article 5(1)(a) of the EU AI Act. Through the case study of the 2024 Match Group litigation and an analysis of cumulative design harms, the article contends that dating apps are not merely high-risk AI systems but may, under certain conditions, constitute prohibited AI. It concludes by calling for an intimacy-sensitive framework of algorithmic accountability, capable of addressing structural behavioural manipulation in emotionally charged digital contexts.

Keywords: Manipulative AI, Digital Intimacy, Gamification, AI Act, Cognitive Autonomy.

1 Introduction

Algorithmic systems now orchestrate the conditions of human connection and among the most intimate of these systems are dating applications.[1] These apps mediate romantic engagement not only by offering access to a larger pool of potential partners, but by structuring how individuals perceive, select, and interact with others.[2] However, these platforms are no longer passive intermediaries. Rather, they operate as affective infrastructures that shape user expectations, prolong engagement, and seek to influence decision-making processes.[3] As such, they raise urgent legal and ethical questions about the nature of human autonomy in environments engineered for manipulation.

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1. Sander De Ridder, 'The Datafication of Intimacy: Mobile Dating Apps, Dependency, and Everyday Life' (2022) 23(6) Television & New Media 593

2. Lik Sam Chan, 'Who Uses Dating Apps? Exploring the Relationships Among Trust, Sensation-Seeking, Smartphone Use, and the Intent to Use Dating Apps Based on the Integrative Model' (2017) 72 Computers in Human Behavior 246.

3. Vincent J Cicchirillo, Abby Hendricks Salopek and Jeongmin Ham, 'Quest for Connection: Motives and Gamified Approaches to Continued and Compulsive Dating App Engagement' (2025) Atlantic Journal of Communication 1–16.

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Dating apps are built upon behavioural design choices intended to captivate attention.[4] Some common features such as swiping mechanisms, daily match limits, algorithmically curated suggestions, reward notifications, and time-based incentives are often optimised not for user wellbeing but for continuous interaction.[5] These features leverage well-documented psychological vulnerabilities, including reward anticipation, social validation bias, and compulsion loops via addictive gamification.[6] This creates a fundamental tension, often referred to as the Tinder Paradox, where the users' goal of finding meaningful matches and potentially leaving the app directly conflicts with the platform's incentive to maintain continuous user engagement for revenue purposes.[7] The objective is not merely to connect individuals but to keep them engaged, often without clear disclosure of how their data is used or how decisions are being made on their behalf.[8] When such design techniques become manipulative, they may undermine the legal validity of user consent and impair the ability of individuals to make autonomous choices in digital spaces that influence personal relationships as a consequence.[9]

This harm arises when AI-driven dating applications employ gamified features, such as swipe-based interfaces and intermittent rewards, to foster compulsive usage patterns. These patterns disproportionately affect individuals with pre-existing vulnerabilities, including low self-esteem, social anxiety, or feelings of loneliness.[10] The resultant psychological harm, manifesting as addictive use, increased emotional distress, and impaired decision-making about opting out of using the app, raises significant ethical and legal concerns. According to the European Commission's February 2025 guidelines on prohibited AI practices,[11] AI systems that deploy manipulative techniques resulting in a material distortion of behaviour and significant harm fall under the prohibition outlined in Article 5(1)(a) of the EU AI Act. The guidelines emphasize that such harm encompasses psychological impacts and that the assessment should consider factors like the severity, context, and vulnerability of the affected individuals. Therefore, the manipulative design of these dating applications not only compromises individual well-being but also potentially contravenes established legal standards.

The European Convention on Human Rights (ECHR) provides a layer of protection through Article 8, which guarantees the right to respect for private and family life.[12] This right encompasses not only protection from arbitrary interference by public authorities but also positive obligations on states to secure effective respect for private life in the face of new technological risks. Jurisprudence from the European Court of Human Rights has increasingly recognized that informational self-determination and psychological integrity are core components of privacy.[13] Practices that covertly shape emotional responses or collect intimate data without full transparency may therefore implicate Article 8, especially where they affect an individual's personal development, social relationships, or capacity for meaningful consent.[14]

In parallel, the European Union has begun to respond to these challenges through the Artificial Intelligence

4. Lucien Rochat and others, 'The Psychology of "Swiping": A Cluster Analysis of the Mobile Dating App Tinder' (2019) 8(4) Journal of Behavioral Addictions 804.

5. Ibid.

6. 'What Makes Us Keep Swiping?' (University of Technology Sydney, 22 February 2024) https://www.uts.edu.au/news/2024/02/what-makes-us-keep-swiping

7. Viktor Berger, 'Mediatized Love: A Materialist Phenomenology of Tinder' (2023) 9(4) Social Media+ Society

8. Kath Albury and others, 'Data Cultures of Mobile Dating and Hook-Up Apps: Emerging Issues for Critical Social Science Research' (2017) 4(2) Big Data & Society 1

9. Rick Bigwood, 'Undue Influence: Impaired Consent or Wicked Exploitation' (1996) 16 Oxford Journal of Legal Studies 503.

10. Eleonora Topino, Mark D Griffiths and Alessio Gori, 'A Compulsive Search for Love Online: A Path Analysis Model of Adult Anxious Attachment, Rejection Sensitivity, and Problematic Dating App Use' (2025) International Journal of Mental Health and Addiction

11. European Commission, Commission Guidelines on Prohibited Artificial Intelligence Practices Established by Regulation (EU) 2024/1689 (AI Act) (4 February 2025)

12. Council of Europe, Convention for the Protection of Human Rights and Fundamental Freedoms (European Convention on Human Rights, as amended) art 8.

13. Patrick O'Callaghan, 'Article 8 ECHR as a General Personality Right?: A Commentary on Axel Springer AG v Germany [2012] ECHR 227' (2015) 6(1) Journal of European Tort Law 69.

14. Bart van der Sloot, 'Decisional privacy 2.0: the procedural requirements implicit in Article 8 ECHR and its potential impact on profiling' (2017) 7(3) International Data Privacy Law 190.

Act (AI Act). The Act introduces a tiered approach to regulating AI systems based on risk. It classifies certain categories of AI as high-risk and prohibits others outright. The most significant provision in this context is Article 5(1)(a), which prohibits the placing on the market or use of an AI system that deploys subliminal techniques, manipulative or deceptive practices intended to materially distort the behaviour of a person in a manner that impairs their ability to make an informed decision.[15] Although the primary focus of the Act is on areas such as biometric surveillance, critical infrastructure, and employment, its language offers a potential pathway for assessing systems that manipulate emotional or cognitive states, particularly in contexts as sensitive as applications facilitating romantic engagement.[16]

The intersection of these two legal regimes i.e. the regulation of manipulative practices in the AI Act and the rights-based framework of the Convention is especially relevant to digital systems that target emotional vulnerability. It can be argued that dating apps operate within an environment of asymmetrical power. The platform providers possess vast quantities of behavioural data and use this information to refine algorithms that respond dynamically to user preferences, habits, and even psychological states.[17] When these systems are designed to reinforce compulsive behaviours or delay decision-making to prolong usage, they may exceed the boundaries of acceptable design and enter the realm of manipulation. The legal question then becomes whether such systems are properly addressed through existing classifications of high-risk AI, or whether they fall within the scope of outright prohibition.

Therefore, systems must be evaluated through the combined lens of the Artificial Intelligence Act and the European Convention on Human Rights. Specifically, the paper argues that certain mechanisms used by dating applications not only qualify as high-risk under the AI Act but may also possibly meet the threshold for prohibition under Article 5(1)(a), where manipulative design materially distorts behaviour and impairs autonomy. In addition, the exploitation of user vulnerability through covert emotional profiling may constitute an interference with Article 8 rights, requiring a recalibration of the relationship between digital optimisation and fundamental rights.

To ensure conceptual precision, this paper explicitly defines key terms central to the analysis. The term 'manipulation' refers specifically to deliberate and systematic practices designed to influence individuals' decision-making processes covertly, bypassing conscious reflection and explicit consent.[18] This concept is distinguished from 'persuasion', which involves openly presenting arguments or incentives, enabling conscious consideration and informed decision-making, and from 'coercion', which employs explicit threats, pressure, or force.[19] Additionally, 'cognitive autonomy' here denotes an individual's capacity to engage in reflective, voluntary decision-making free from hidden external influence or manipulation, relying on transparency and informed consent.[20] These distinctions build upon broader theoretical debates about cognitive freedom and accountability frameworks underpinning the EU Artificial Intelligence Act.[21]

The following section provides an analysis of the 2024 Match Group litigation in the United States, using it as a comparative case study to highlight significant legal arguments surrounding manipulative design in dating applications. This discussion leads to a detailed examination of the psychological mechanisms and persuasive elements inherent to such manipulative design patterns. Subsequently, the fourth section delivers a compre-

15. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L 2024/1689, art 5(1)(a)

16. Isabel Kusche, 'Possible Harms of Artificial Intelligence and the EU AI Act: Fundamental Rights and Risk' (2024) Journal of Risk Research 1–14

17. Gavin Clarkson, Trond E Jacobsen and Archer L Batcheller, 'Information asymmetry and information sharing' (2007) 24(4) Government Information Quarterly 827.

18. Ilan Kilovaty, 'Legally Cognizable Manipulation' (2019) 34 Berkeley Technology Law Journal 449.

19. Sjors Ligthart, 'Towards a Human Right to Psychological Continuity? Reflections on the Rights to Personal Identity, Self-Determination, and Personal Integrity' (2024) European Convention on Human Rights Law Review *(*advance online publication) DOI: 10.1163/26663236-bja10092.

20. Aimen Taimur, 'Cognitive Freedom and Legal Accountability: Rethinking the EU AI Act's Theoretical Approach to Manipulative AI as Unacceptable Risk' (2025) 1 Cambridge Forum on AI: Law and Governance e20, DOI: 10.1017/cfl.2025.4.

21. Mason Franklin, Paolo Moreira Tomei and Robert Gorman, 'Strengthening the EU AI Act: Defining Key Terms on AI Manipulation' (2023) *forthcoming*

hensive legal analysis of the EU Artificial Intelligence Act, particularly considering the definitions, scope, and practical applicability of prohibited AI under Article 5(1)(a). Building upon this, the fifth section explores the implications of manipulative dating app technologies for Article 8 of the European Convention on Human Rights, emphasizing their effects on informational autonomy and psychological integrity. Following this, section six evaluates existing limitations within EU legal frameworks, with particular attention to challenges associated with cumulative harms and the illusion of meaningful consent. The penultimate section then proposes targeted legal reforms aimed at enhancing accountability, transparency, and liability within emotionally sensitive digital environments. Finally, the concluding section synthesizes the main findings and provides recommendations for future regulatory responses.

2 The Match Group Litigation

In early 2024, a consolidated class action was initiated in the United States against Match Group Inc., the umbrella company behind several leading dating platforms including Tinder and Hinge.[22] The plaintiffs alleged that the applications had been intentionally engineered to foster compulsive engagement rather than meaningful social connection. Their claim rested on the argument that these platforms were designed not as tools for dating, but as behaviourally optimised systems that exploit user vulnerabilities to generate profit through sustained interaction. The case was then sent for arbitration in the following months.[23]

At the heart of the lawsuit is the assertion that the platforms employ affective design features such as intermittent reinforcement, emotionally charged prompts, and opaque algorithmic curation. According to the plaintiffs, these mechanisms were not incidental to user experience but integral to a business model that monetises engagement rather than outcome.[24] While the proceedings remain ongoing and have yet to result in a substantive ruling, the litigation provides a timely illustration of how design-based behavioural influence is increasingly being framed as a legal harm in itself.

Although the lawsuit was brought under consumer protection laws in the United States, its broader implications resonate with the concerns identified under European law. The description of systemic manipulation mirrors the type of design conduct that the AI Act aims to prohibit, particularly where such systems operate outside of conscious awareness and distort user behaviour. It also parallels emerging interpretations of Article 8 of the European Convention on Human Rights, which protects not only against intrusion but also against environments that structurally compromise personal autonomy and psychological integrity.[25]

One notable aspect of the case is the emphasis on platform intent. The claimants argue that the compulsive nature of the platforms is not accidental, but a consequence of deliberate engineering decisions.[26] In the European legal framework, particularly under the AI Act, the requirement is not that a system must be intentionally malicious but that its functioning predictably impairs user autonomy. This aligns with the broader European commitment to design safeguards, such as those outlined in Article 25 of the GDPR,[27] which explicitly enshrines the principles of privacy by design and by default. Nevertheless, evidence of intentional optimisation for dependency would likely strengthen any argument that a platform meets the threshold for prohibited manipulation. Similarly, under the rights-based analysis of the Convention, foreseeability and the structural character of the harm are critical to determining whether state obligations have been engaged.[28]

22. *Oksayan et al v Match Group, Inc*, Case No 3:24-cv-00888 (ND Cal, filed 14 February 2024) https://www.classaction.org/media/oksayan-et-al-v-matchgroup-inc.pdf

23. *Oksayan v MatchGroup Inc* (ND Cal, Case No 3:24-cv-00888-LB, 10 December 2024) Order Compelling Arbitration.

24. Ibid.

25. n (19)

26. Reuters, 'Users accuse Match's dating apps of addictive design' (11 Dec 2024)

27. Regulation (EU) 2016/679 (General Data Protection Regulation) [2016] OJ L119/1, art 25.

28. Vladislava Stoyanova, 'Causation Between State Omission and Harm Within the Framework of Positive Obligations Under the European Convention on Human Rights' (2018) 18(2) Human Rights Law Review 309–346.

The Match Group litigation also illustrates the evidentiary challenges inherent in proving design-based interference. The harms alleged are not isolated incidents, but patterns of emotional exhaustion, decreased agency, and diminished wellbeing that accrue over time. This cumulative nature of harm is central to both the AI Act and Article 8 frameworks, which recognise that the legal significance of manipulation often lies in its duration and consistency rather than its immediacy.[29] The difficulty of quantifying such harms makes their legal articulation more complex but no less urgent.

The Match Group proceedings help clarify the kinds of questions that European regulators and courts may soon face. These include whether psychological dependency constitutes a legally cognizable form of harm, how platforms should be assessed for structural manipulation, and what forms of redress are appropriate where the injury is tied not to discrete acts but to the configuration of an entire digital environment.[30] In considering these issues, the litigation serves as more than a foreign analogue. It provides a live demonstration of how affective design can be legally framed, how patterns of influence can be treated as evidence of structural manipulation, and how user engagement metrics may be reinterpreted as signals of engineered dependency. For European legal actors, it offers a comparative reference point for understanding how law can respond when manipulation becomes embedded not in what users are told, but in how they are made to feel, act, and relate.

The Match Group litigation offers a comparative lens through which to examine manipulative design in dating platforms. While grounded in a different legal system, its core arguments reinforce the growing international recognition that behavioural influence, when systematically orchestrated through digital architecture embedded in popular dating apps, may cross a legal threshold. As litigation remains ongoing, its potential legal implications and outcomes remain speculative. Analogous European cases have yet to arise, but given the evolving regulatory focus on manipulative practices, similar claims under European consumer protection or privacy frameworks are anticipated.As European regulatory and judicial practice continues to evolve, this case helps illustrate how emotional and cognitive autonomy might be protected not only through regulatory classification but also through a more general legal commitment to structural fairness and psychological integrity in the digital sphere.

3 From Swipe to Submission: Understanding Manipulative Design Patterns in Dating Applications

Dating applications today operate not as neutral platforms for social connection, but as engineered environments shaped by data-driven behavioural incentives. These platforms are designed with precision, informed by a deep understanding of user psychology and an economic model that privileges engagement over outcome.[31] The objective is not to optimise for successful relationships but to retain users within a self-reinforcing system of interaction. In doing so, many dating applications deploy a complex set of design patterns that subtly manipulate user behaviour, often in ways that evade detection yet compromise autonomy.

One of the central elements among these is the use of variable reinforcement schedules, a behavioural conditioning method in which rewards are delivered unpredictably. This mechanism is most evident in swipe-based interfaces, which mimic the logic of slot machines by offering users irregular and uncertain emotional gratification.[32] Each right swipe carries the possibility of a match, though the probability remains opaque. The unpredictability of reward leads to prolonged engagement, as users are conditioned to continue interacting in the hope of a desirable response. As Eyal notes, “what draws users in is not certainty, but the thrill of possibil-

29. Ievgeniia Kilovaty, 'Legally Cognizable Manipulation' (2019) 34 Berkeley Technology Law Journal 449.

30. Nina Keese & Mark Leiser, “Online Manipulation as an Interference with Freedom of Thought” (2024 forthcoming, in Cambridge Handbook on Freedom of Thought)

31. Carolina Bandinelli, 'Dating Apps: Towards Post-Romantic Love in Digital Societies' (2022) 28(7) International Journal of Cultural Policy 905.

32. Alexander Ross and David Nieborg, 'Spinning Is Winning: Social Casino Apps and the Platformization of Gamble-Play' (2021) 21(1) Journal of Consumer Culture 84-101.

ity."[33] In this context, the interface ceases to be a neutral medium and becomes a behavioural trap calibrated to user vulnerabilities.[34]

The introduction of 'gamification' intensifies this effect by reconfiguring romantic interaction as a quantifiable and competitive exercise. Users are offered badges, milestones, daily match goals, and visual progress indicators that simulate achievement.[35] Rather than facilitating connection, these features create artificial incentives to remain active. In the context of dating platforms, gamified features such as match streaks, virtual tokens, and time-sensitive visibility boosts are strategically designed to transform emotional interaction into a quantifiable activity, often reframing the pursuit of relationships as a competitive task.[36] Recent studies have shown that these elements shift user motivation away from relational authenticity and toward metrics of success defined by the platform itself.[37] In dating applications, this results in a shift from genuine relational intent to platform-defined success metrics, reinforcing patterns of superficial engagement and emotional habituation.

The influence of these systems is magnified by a lack of transparency. Algorithmic curation, ostensibly based on compatibility, relies on opaque parameters, including inferred emotional states and engagement history.[38] Users are seldom informed about how matches are ranked or suggested, and there is little opportunity for contestation.[39] The European Data Protection Board has emphasised that such opacity undermines users' ability to exercise control over automated decisions, particularly where profiling occurs without meaningful explanation.[40] The cumulative effect is one of informational asymmetry: platforms possess comprehensive insight into user behaviour, while users operate in a partial and curated informational environment.[41]

Beyond the opaque addiction-inducing architectures, dating apps also engage in effective manipulation. Notifications designed to prompt return are often constructed using language that appeals to loss aversion and urgency. Messages such as "you're missing out" or "someone just liked you" are not mere nudges but strategic interventions in users' emotional attention.[42] These cues are delivered in ways that deliberately bypass rational evaluation, leveraging psychological triggers to secure re-engagement. Bandinelli and Bandinelli argue that dating apps function not merely as tools for connecting individuals but as mechanisms that engage and exploit users' desires. They suggest that these platforms operate within a 'libidinal economy,' activating a cycle of anticipation and frustration that keeps users engaged without necessarily leading to meaningful connections.[43] In the emotionally charged context of dating, such techniques risk undermining users' capacity for reflective choice, as the apps stimulate desire while simultaneously deferring its fulfilment.[44]

33. Nir Eyal, 'Hooked: How to Build Habit-Forming Products' (Portfolio 2014) ch 3.

34. Eva Illouz, 'Why Love Hurts: A Sociological Explanation' (Polity 2012) – Discusses the commodification and rationalisation of romantic emotions in contemporary systems.

35. Giulia Ranzini and Christoph Lutz, 'Love at First Swipe? Explaining Tinder Self-Presentation and Motives' (2017) 5(1) Mobile Media & Communication 80

36. Carolina Bandinelli and Alessandro Gandini, 'Dating Apps: The Uncertainty of Marketised Love' Cultural Sociology 16(3) (2022) 423–441.

37. Olga Solovyeva and Alexander V Laskin, 'Gamification, Tinder Effect, and Tinder Fatigue: Dating as a CMC Experience' in Jeremy H Lipschultz, Karen Freberg and Regina Luttrell (eds), The Emerald Handbook of Computer-Mediated Communication and Social Media (Emerald Publishing Limited 2022) 197–211.

38. Christoph Lutz and Giulia Ranzini, 'Where Dating Meets Data: Investigating Social and Institutional Privacy Concerns on Tinder' Social Media + Society 3(1) (2017) 1.

39. Ibid.

40. European Data Protection Board, 'Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679' (6 February 2018)

41. Rowan Wilken, Jean Burgess and Kath Albury, 'Dating Apps and Data Markets: A Political Economy of Communication Approach' Computational Culture 7 (2019) 1–26.

42. Meghan Elisabeth Voll, 'Cupid's Digital Arrows: The Ethics of Algorithms in Mobile Dating Apps' (2023) 8(2) The iJournal: Student Journal of the Faculty of Information

43. Carolina Bandinelli and Arturo Bandinelli, 'What Does the App Want? A Psychoanalytic Interpretation of Dating Apps' Libidinal Economy' Journal for the Psychoanalysis of Culture & Society 26(2) (2021) 181.

44. Ibid.

Moreover, dating applications frequently employ dark patterns which are interface designs that intentionally mislead or manipulate users. Common examples include pre-selected data sharing options, manipulative subscription models (for example the 'Rose Jail' mechanism in Hinge)[45] or even Tinder's Boost or Super Boost features which promise higher profile visibility.[46] These patterns are deliberate strategies to exploit user inertia and induce cognitive fatigue, thereby undermining the normative foundation of informed consent.[47] As highlighted in recent studies, such manipulative designs compromise user autonomy and challenge the effectiveness of existing legal protections. In digital environments engineered to exhaust rather than inform, the legitimacy of any affirmative user action becomes questionable.[48]

These manipulative techniques do not operate in isolation. Rather, they form part of a dynamic system of influence that responds to user behaviour in real time. Each swipe, message, or period of inactivity is datafied and processed through feedback loops that adjust algorithmic predictions. Yeung refers to this as "hypernudging", an architecture of continuous behavioural modulation.[49] Unlike traditional nudges, which are static and context-specific, hypernudges operate on personalised data streams and evolve with user interaction.[50] In dating platforms, this may result in patterns of influence that become increasingly tailored to exploit emotional dependencies and behavioural predictability. The implications of such systems are particularly acute in emotionally vulnerable populations. Users experiencing loneliness, anxiety, or low self-esteem are more susceptible to hyper-persuasive design and less equipped to identify manipulative cues.[51] These groups are not merely passive recipients of influence but are disproportionately targeted by engagement-optimised algorithms.[52]

This raises pressing questions about discriminatory design, particularly considering the AI Act's prohibition of systems that distort behaviour by impairing the capacity to make free decisions. If certain users are systematically exposed to manipulative experiences based on behavioural profiles, the platform may not only engage in unethical practice but in potentially unlawful targeting. Crucially, the intimacy of dating platforms demands a higher standard of ethical and legal accountability. Unlike e-commerce or entertainment services, dating apps mediate the construction of identity, desire, and social acceptance. They extract and process data that reveals not only what users do, but who they are and what they long for.[53] In this environment, the line between engagement and exploitation is easily crossed.

Quantitative evidence further illustrates the extent of addictive behaviours fostered by dating apps. Recent empirical studies indicate that a significant proportion of users develop problematic usage patterns consistent with behavioural addiction, manifesting in compulsive app-checking, persistent feelings of anxiety when not using the app, and diminished overall psychological well-being.[54] For instance, approximately 30% of dating

45. The term "rose jail" is an informal expression used by Hinge users to describe the app's Standouts feature. In this feature, Hinge curates a selection of profiles that align closely with a user's preferences and recent activity. To interact with these Standout profiles, users must send a "Rose," which is a premium feature. This design choice effectively places certain desirable profiles behind a paywall, limiting free user interaction and encouraging the purchase of Roses to engage with these matches. While Hinge doesn't officially use the term "rose jail," it has gained popularity among users discussing the app's mechanics: Hinge Help Center, 'What is Standouts?' https://help.hinge.co/hc/en-us/articles/360057625534-What-is-Standouts

46. Lene Pettersen and Faltin Karlsen, 'Dark Design Patterns and Gamification as the Heart of Dating Applications' Business Models' (2023) AoIR Selected Papers of Internet Research

47. Firya Qurratu'ain Abisono and Risky Apriliani, 'Revisiting Communication in the Digital Age: Unraveling the Confluence of Dating Apps, Advertising Strategies, and Dark Patterns' (2024) 15(1) CoverAge: Journal of Strategic Communication 12–23

48. Pilar Rico-Bordera, Manuel Galán, David Pineda and José A Piqueras, 'Unveiling the Depths of Tinder: Decoding the Dark Tetrad and Sociosexuality in Motives Behind Online Dating' (2024) 18(5) Cyberpsychology: Journal of Psychosocial Research on Cyberspace Article 3

49. Karen Yeung, ''Hypernudge': Big Data as a Mode of Regulation by Design' (2017) 20(1) Information, Communication & Society 118.

50. Isabel Richards, 'Hypernudging: A Threat to Moral Autonomy?' AI and Ethics (2024)

51. Yi-Ting Huang and An-Di Gong, 'Too Vulnerable to Resist: Problematic Use of Dating Apps Associated with Social Appearance Anxiety, Social Interaction Anxiety, and Rejection Sensitivity' Computers in Human Behavior 165 (2025) 108566.

52. Ibid.

53. Esther Weltevrede and Fieke Jansen, 'Infrastructures of Intimate Data: Mapping the Inbound and Outbound Data Flows of Dating Apps' Computational Culture 7 (2019)

54. Christian Montag and others, 'Addictive Features of Social Media/Messenger Platforms and Freemium Games Against the Back-

app users demonstrate clinical symptoms associated with addiction, including heightened rejection sensitivity, anxious attachment styles, and decreased emotional health.[55] Such patterns notably correlate with elevated anxiety and reduced mental health outcomes, underscoring the psychological vulnerabilities exploited by manipulative interface designs.

In sum, the behavioural design of dating applications reveals a deliberate and layered strategy of influence. While individual features may appear innocuous, their interaction produces a structure that systematically biases user behaviour toward continued platform use.[56] These call into question the adequacy of existing regulatory mechanisms and invite closer scrutiny under emerging legal frameworks. With these manipulative techniques in mind, the next section will critically examine whether such systems could indeed constitute prohibited manipulative AI under the EU AI Act.

4 Manipulative AI and the Protection of Cognitive Autonomy in the AI Act

The AI Act (Artificial Intelligence Act adopted by the European Union in 2024) introduces a risk-based regulatory framework that includes a limited set of absolute prohibitions. Among these is the ban on systems that exert certain forms of psychological influence on individuals without their awareness. Article 5(1)(a) of the Act prohibits the placing on the market or use of AI systems that deploy subliminal, manipulative, or deceptive techniques beyond a person's consciousness, where such techniques are intended to materially distort behaviour in a manner that causes or is likely to cause significant harm.[57]

The legal structure of Article 5(1)(a) is designed to regulate the normative conditions under which individual decision-making takes place, rather than the substantive content of those decisions. Its operative focus is on the use of subliminal or manipulative techniques that interfere with a person's capacity to exercise free and informed agency. The provision identifies as legally impermissible those systems which, through design or function, impair the formation of autonomous will by circumventing conscious awareness. This reflects a doctrinal departure from established consumer protection law, which has traditionally centred on misrepresentation, asymmetrical information, or procedural unfairness.[58] In contrast, Article 5(1)(a) articulates a regulatory objective grounded in the protection of cognitive and psychological integrity as an element of human dignity, aligning with the broader teleology of the AI Act and with the Union's constitutional commitment to safeguarding individual autonomy in technologically mediated environments.[59]

The ethical dimensions of manipulative AI design can also be illuminated through Kantian ethics and moral consequentialism. From a Kantian perspective, manipulative dating app designs violate the principle of respect for persons as ends in themselves rather than merely as means. Kant emphasizes autonomy and rational agency as the basis for moral dignity, and any AI system designed to covertly shape user behaviour undermines this moral autonomy.[60] Consequently, manipulative systems conflict with Kant's categorical imperative, which

ground of Psychological and Economic Theories' (2019) 16(14) International Journal of Environmental Research and Public Health 2612; Eliana Topino, Mark D Griffiths and Alessio Gori, 'A Compulsive Search for Love Online: A Path Analysis Model of Adult Anxious Attachment, Rejection Sensitivity, and Problematic Dating App Use' (2025) International Journal of Mental Health and Addiction

55. Ibid.

56. Mark Leiser and Cristiana Santos, 'Dark Patterns, Enforcement, and the Emerging Digital Design Acquis: Manipulation beneath the Interface' (2024) 15(1) *European Journal of Law and Technology*

57. Regulation EU 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L 2024/1689, art 5(1)(a)

58. Mark Leiser, 'Psychological Patterns and Article 5 of the AI Act: AI-Powered Deceptive Design in the System Architecture and the User Interface' (2024) 1(1) Journal of AI Law and Regulation 5–23

59. Huixin Zhong, Eamonn O'Neill, and Janina A. Hoffmann, 'Regulating AI: Applying Insights from Behavioural Economics and Psychology to the Application of Article 5 of the EU AI Act' (2023)

60. Immanuel Kant, Groundwork of the Metaphysics of Morals (Mary Gregor tr, CUP 1998)

prohibits treating individuals merely as instruments for achieving external goals, such as prolonged engagement or profit maximization.

Conversely, from a consequentialist viewpoint, particularly moral consequentialism, the morality of AI-driven manipulation depends on evaluating its overall outcomes or consequences.[61] Manipulative design in dating apps typically results in psychological harm, reduced autonomy, and impaired emotional well-being. When assessed against the consequentialist standard, maximizing overall human welfare, these harms are ethically indefensible. Manipulative AI therefore fails both under Kantian duty-based ethics and under a consequentialist analysis focused on outcomes and societal impacts.

The prohibition in Article 5(1)(a) is composed of three cumulative elements: the deployment of subliminal, manipulative, or deceptive techniques; influence that occurs outside the person's conscious awareness; and a material distortion of behaviour likely to result in harm.[62] Each component is legally significant. The first anchors the provision in the behavioural sciences and distinguishes prohibited systems from persuasive but transparent designs.[63] The second reflects the legal relevance of cognitive bypass, recognising that unconscious influence can impair autonomy even in the absence of overt manipulation.[64] The third introduces a harm-based threshold, requiring that the distortion have an adverse effect or a credible likelihood of causing one.[65] As clarified by the Commission's 2025 guidelines,[66] this threshold specifically captures manipulative practices that materially distort user behaviour, particularly when exploiting psychological vulnerabilities in contexts such as digital intimacy.

In Recital 29, the AI Act clarifies that a distortion is material where it impairs the ability of an individual to make a free and informed decision.[67] This standard does not require an overt violation of physical or mental integrity. It is sufficient that the system impairs decision-making capacity through its design. In dating applications, this may occur through the combination of variable reinforcement schedules, interface gamification, emotionally framed notifications, and design opacity.[68] These mechanisms are often integrated in ways that are subtle and difficult to resist, particularly when engagement is emotionally motivated. The legal rationale for proscribing such systems is strengthened by reference to Gustav Radbruch's theory of justice.[69] Radbruch argued that legal rules must be subject to a minimum standard of substantive justice grounded in human dignity. While originally formulated in response to historical abuses, the principle remains applicable to contemporary regulatory challenges.[70] Where digital systems are designed to exploit psychological vulnerabilities for commercial gain, they may fail to respect the person as a subject of rights. In such cases, the structural features of design become relevant to the legality of the system itself.[71]

However, some challenges arise in the application of Article 5(1)(a). Platforms may argue that user engagement reflects preference rather than manipulation and that their systems are designed to enhance experience rather than distort behaviour. Further, the cumulative nature of influence complicates the production of evidence, as

61. John Stuart Mill, Utilitarianism (Roger Crisp ed, OUP 1998)

62. n 35.

63. Matija Franklin, Philip Moreira Tomei, and Rebecca Gorman, 'Strengthening the EU AI Act: Defining Key Terms on AI Manipulation' (2023)

64. Ibid.

65. Ibid.

66. European Commission (n 11)

67. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L 2024/1689, recital 29.

68. Lene Pettersen and Faltin Karlsen, 'Dark Design Patterns and Gamification as the Heart of Dating Applications' Business Models' AoIR Selected Papers of Internet Research (2023)

69. Gustav Radbruch and others, 'Statutory Lawlessness and Supra-Statutory Law (1946)' Oxford Journal of Legal Studies 26(1) (2006) 1–11

70. Ibid.

71. Sue Anne Teo, 'Human Dignity and AI: Mapping the Contours and Utility of Human Dignity in Addressing Challenges Presented by AI' (2023) 15(1) Law, Innovation and Technology 241

effects emerge over time and may not be attributable to a single design element.[72] However, the AI Act adopts an ex-ante regulatory model. It does not require post hoc proof of harm in individual cases. The standard under Article 5(1)(a) is based on the likely outcome of a design pattern, not the proven consequences in a specific instance.

This precautionary orientation is consistent with broader developments in EU risk regulation, where legal intervention is justified in anticipation of harm rather than solely in response to it.[73] Structural manipulation, particularly in emotionally sensitive environments such as dating applications, may not manifest through acute or measurable harm.[74] Instead, it may gradually erode user autonomy, impair decision quality, or contribute to emotional distress. Where such outcomes are built into the functional architecture of a system, legal intervention is both proportionate and necessary.

The operational success of Article 5(1)(a) depends on the ability of regulators to identify behavioural distortion not as a single act, but as the outcome of design environments configured to shape emotional and cognitive processes over a sustained period of time akin to 'slow violence'.[75] This term refers to harm that is incremental, cumulative, and often obscured by its gradual unfolding, making it harder to detect but no less damaging in its long-term effects.[76] Therefore, this requires a regulatory willingness to interpret autonomy as a condition to be protected through system design constraints, not merely respected in abstract declarations. Moreover, effectively enforcing Article 5(1)(a) requires demonstrating clear causal links between manipulative design and specific psychological harms. Regulators must navigate complexities involved in proving material distortion of behaviour, often dependent on subtle and incremental psychological influences. The unconscious nature of this manipulation further complicates gathering clear and convincing evidence, posing substantial practical challenges for regulatory bodies.

In summary, Article 5(1)(a) of the Artificial Intelligence Act offers a legal framework for prohibiting systems that exert manipulative influence in ways that impair free decision-making. In the case of dating applications, where engagement is affectively charged and psychologically complex, this provision provides a meaningful avenue for regulatory intervention. The next section will examine how similar concerns have been addressed through the rights-based protections under Article 8 of the European Convention on Human Rights.

5 Article 8 ECHR and Informational Autonomy in Emotionally Manipulative Systems

Within Article 8 of the European Convention on Human Rights, there is a guarantee of the right to respect for private and family life, home, and correspondence.[77] Over time, the European Court of Human Rights has developed an expansive interpretation of this right, recognising that it encompasses not only informational privacy but also psychological integrity and the right to shape one's personal identity and relationships free from undue interference.[78]

While Article 8 was initially applied to state action, the Court has established that the state may also have positive obligations to protect individuals from serious harm caused by private actors. This was made clear in

72. Daniel Susser, Beate Roessler and Helen Nissenbaum, 'Online Manipulation: Hidden Influences in a Digital World' Georgetown Law Technology Review 4 (2019) 1.

73. Tuomas Pöysti, 'The Precautionary Approach Design Pattern' Digital Society 3(1) (2024) 5.

74. Christian Montag and others, 'Addictive Features of Social Media/Messenger Platforms and Freemium Games against the Background of Psychological and Economic Theories' International Journal of Environmental Research and Public Health 16(14) (2019) 2612.

75. Rachel Brydolf-Horwitz, 'Embodied and Entangled: Slow Violence and Harm via Digital Technologies' (2022) 40(2) Environment and Planning C: Politics and Space 391.

76. Ibid.

77. European Convention on Human Rights (adopted 4 November 1950, entered into force 3rd September 1953) ETS No 5, art 8.

78. Jan-Christoph Bublitz, 'The Nascent Right to Psychological Integrity and Mental Self-Determination' in Andreas von Arnauld, Kerstin von der Decken and Mart Susi (eds), The Cambridge Handbook of New Human Rights: Recognition, Novelty, Rhetoric (Cambridge University Press 2020) 387–403.

X and Y v the Netherlands, where the Court held that the state must take steps to secure effective respect for private life even in the context of private wrongdoing.[79] These obligations become particularly relevant in the context of technology platforms that exert structural influence on behaviour and emotion.

The Court has also clarified that personal autonomy is not exhausted by formal or singular acts of consent. In *Barbulescu v Romania*, the Grand Chamber held that the scope of Article 8 extends to the context in which individuals communicate and construct aspects of their personal identity.[80] The Court acknowledged that even where individuals engage voluntarily with digital systems, the legal analysis must consider whether the surrounding environment permits genuine autonomy or imposes constraints that render that autonomy ineffective. This principle is especially relevant in evaluating dating applications. These platforms engage users at emotionally vulnerable points and influence not only how they connect with others, but also how they construct self-understanding. Features such as match suggestions, emotional feedback mechanisms, and interface prompts are not merely incidental; they can shape the user's social and affective experience. The platform becomes a space in which private life is structured by data-driven cues and behavioural incentives without fully getting legitimate consent for its far-reaching effects.[81]

The Court's reasoning in *S and Marper v United Kingdom* further supports the view that systemic digital practices cannot be justified solely by reference to consent or public benefit.[82] In that case, the indefinite retention of biometric data from individuals not convicted of a crime was found to be disproportionate, despite state interests in law enforcement. The Court held that such practices could not be reconciled with Article 8, in part because they failed to respect the individual's interest in controlling personal information over time.[83] Applied to digital platforms, this reinforces that interference with autonomy may occur where systems deny users meaningful control over their behavioural data or affective engagement. Furthermore, Article 8 also protects psychological integrity, as confirmed in the Court's reasoning in *Bensaid v United Kingdom*.[84] There, the Court held that psychological harm, even without physical intrusion, could engage Article 8 where it interferes with personal development or dignity.[85] In systems designed to encourage compulsive use or to exploit patterns of emotional vulnerability, this line of reasoning suggests a strong basis for scrutiny under the Convention.

The values protected by Article 8 extend beyond the prevention of surveillance or unauthorized data processing;[86] they encompass the individual's capacity to form relationships, navigate emotional experiences, and construct personal identity free from covert commercial manipulation. This comprehensive understanding of private life aligns with the European Court of Human Rights' recognition that dignity and autonomy are fundamental to free choice.[87] Legally, Article 8 complements the AI Act, which assesses manipulative design through a regulatory framework focused on system classification and risk. In contrast, Article 8 introduces a rights-based analysis that centres on the lived experiences of users. This perspective is particularly pertinent to domains like dating applications, where affective manipulation may elude high-level system categorizations yet still inflict substantive harm.

Some recent developments underscore the EU's commitment to addressing these concerns. The forthcoming Digital Fairness Act aims to tackle manipulative and unethical commercial practices in the digital realm, includ-

79. *X and Y v. the Netherlands* App no 8978/80 (ECtHR, 26 March 1985) para 27.

80. *Bărbulescu v Romania* [GC] App no 61496/08 (ECtHR, 5 September 2017) paras 70–82.

81. Zahra Stardust, Rosalie Gillett and Kath Albury, 'Surveillance Does Not Equal Safety: Police, Data and Consent on Dating Apps' Crime, Media, Culture 19(2) (2022) 274–295.

82. *S and Marper v United Kingdom* App nos 30562/04 and 30566/04 (ECtHR, 4 December 2008) paras 119–122, 125–126

83. Ibid.

84. *Bensaid v United Kingdom* App no 44599/98 (ECtHR, 6 February 2001) paras 46–47.

85. Ibid.

86. Nora Ni Loideain, 'Surveillance of Communications Data and Article 8 of the European Convention on Human Rights' in Serge Gutwirth, Ronald Leenes and Paul De Hert (eds), Reloading Data Protection: Multidisciplinary Insights and Contemporary Challenges (Springer 2013) 183–209.

87. Ibid.

ing the use of 'dark patterns' and addictive design features that exploit user vulnerabilities.[88] This legislation seeks to bridge regulatory gaps identified in the Commission's Digital Fairness Fitness Check, emphasizing the need for ethical design practices that prioritize user autonomy and well-being.[89] Notably, the European Parliament had called for new rules to make digital platforms less addictive, highlighting the importance of fostering ethical design by default and protecting vulnerable populations, particularly children and adolescents, from the psychological harms associated with addictive technologies.[90] These initiatives reflect a growing recognition that protecting psychological integrity and autonomy in digital environments is essential for safeguarding fundamental rights.

6 Rethinking Accountability: Strengthening the EU AI Act and ECHR Synergies

The current wording of Article 5(1)(a) of the EU Artificial Intelligence Act introduces a groundbreaking prohibition on AI systems that deploy subliminal or manipulative techniques beyond a person's consciousness, where such techniques are likely to cause significant harm.[91] While this provision establishes a powerful legal baseline, its effectiveness in consumer-facing digital contexts, especially emotionally charged platforms like dating applications, is not yet fully realised. This section evaluates the capacity of Article 5(1)(a) to address these risks, and proposes targeted reforms to enhance alignment with European fundamental rights law, particularly Article 8 of the European Convention on Human Rights.

6.1 Legal Sufficiency and Structural Limits of Article 5(1)(a)

A strict doctrinal reading of Article 5(1)(a) reveals a tripartite test: first, the deployment of subliminal or purposefully manipulative techniques; second, an operation that circumvents conscious awareness; and third, a material distortion of behaviour that is likely to result in harm.[92] Applied rigorously, this framework could capture the logic of affective and behavioural manipulation embedded in many consumer technologies. In practice, however, enforcement remains limited by conceptual ambiguity and a lack of regulatory precedent.

The provision does not define what constitutes manipulation “beyond a person’s consciousness” in practical terms. In the context of emotionally immersive platforms, such as dating apps, the line between persuasive interface design and unconscious behavioural conditioning is difficult to draw. Techniques like emotionally framed notifications, reinforcement schedules, and curated desirability cues may cumulatively influence users without ever violating a discrete threshold of awareness.[93] This ambiguity may render enforcement vulnerable to inconsistent interpretation across Member States.

Moreover, the current formulation of Article 5(1)(a) applies only to systems “likely to cause” harm.[94] This probability standard, though consistent with the precautionary logic of EU risk regulation, may prove difficult to apply in affective systems where harm emerges incrementally. Structural erosion of autonomy, emotional exhaustion, or prolonged affective engagement may not be easily measured or attributed to a single system. In such cases, legal risk may be dismissed as too speculative to justify intervention, despite clear patterns of behavioural interference.

88. European Commission, ‘Questions and Answers on the Digital Fairness Fitness Check’ (Press Release, 3rd October 2024)

89. Ibid.

90. European Parliament, 'New EU rules needed to make digital platforms less addictive' (Press Release, 25th October 2023)

91. n 35

92. n 36

93. Rostam J. Neuwirth, ‘Prohibited artificial intelligence practices in the proposed EU artificial intelligence act (AIA)’ Computer Law & Security Review 48 (2023): 105798.

94. Nathalie A Smuha, 'Beyond the Individual: Governing AI’s Societal Harm' (2021) 10(3) Internet Policy Review

6.2 Proposals for Reform and Alignment

For Article 5(1)(a) of the AI Act to address the challenges posed by manipulative systems in emotionally sensitive contexts, such as dating applications, the provision must be strengthened both conceptually and structurally. The following proposals aim to refine its practical and normative reach, with a focus on enhancing legal clarity, improving risk classification, and aligning regulatory objectives with fundamental rights.

Firstly, greater clarity is needed around the legal meaning of manipulation in emotionally immersive systems. The current wording of Article 5(1)(a) leaves significant uncertainty as to what constitutes behaviour that is "beyond a person's consciousness" or "materially distorts" decision-making.[95] These terms must be interpreted in a way that reflects not only isolated actions but also the cumulative effects of prolonged exposure to design patterns that exploit psychological vulnerability. In the context of dating apps, where interaction is shaped by data-driven feedback loops, the line between engagement and manipulation often lies not in single features but in how those features work together over time.[96] Acknowledging cumulative influence is essential if the law is to capture the full scope of harm produced by these systems.

Secondly, the classification of risk under the AI Act should more accurately reflect the emotional and psychological stakes involved in certain digital environments. At present, dating platforms and similar services are not categorised as high-risk, despite their capacity to affect identity formation, emotional well-being, and interpersonal decision-making. A more responsive approach would introduce a presumption of high-risk status for systems that operate in domains involving intimacy, relational decision-making, or affective data.[97] This would not result in automatic prohibition, but it would shift the regulatory burden onto developers and providers to demonstrate that their systems do not undermine user autonomy or induce behavioural harm. Such a presumption would reflect the reality that some digital systems carry inherent psychological risks that merit closer scrutiny.

Finally, there is a need to ensure that the AI Act reflects the broader framework of fundamental rights protection, particularly the right to private life under Article 8 of the European Convention on Human Rights. This right has been interpreted by the European Court of Human Rights to include not only informational privacy but also psychological integrity, personal identity, and the ability to form and maintain meaningful relationships.[98]In light of this, the law should require providers to consider the emotional and psychological impact of their systems, especially where design choices are likely to influence vulnerable users. A "dignity-aware" obligation would encourage the development of technologies that respect users not only as data subjects, but as persons with emotional needs, social contexts, and moral agency.[99] Such a reform would better align technological development with the values of human dignity and autonomy that lie at the heart of both EU law and the Convention.

The concept of human dignity in digital environments can also be further enriched by considering Luciano Floridi's approach to informational ethics. Floridi emphasizes the intrinsic worth of informational entities and their moral right to exist without undue interference or manipulation.[100] Within the context of dating applications, Floridi's perspective underscores the importance of safeguarding individual users' dignity not merely through privacy protection, but through preserving their capacity to authentically shape their informational and emotional experiences. Digital dignity, according to Floridi, involves maintaining an environment where individuals can freely develop their identities and relationships without being covertly influenced by manipulative algorithmic structures.[101] Incorporating this broader ethical dimension into regulatory frameworks, particu-

95. n 9

96. Octavian Danut Husoschi, "Eradicating Algorithmic Blackboxing in Dating Apps: The Road to Transparency and Better Connections" (2021)

97. Claudio Novelli, Federico Casolari and Luciano Floridi, 'AI Risk Assessment: A Scenario-Based, Proportional Methodology for the AI Act' (2024) 3(1) Digital Society 13

98. n 69

99. Aleksandre Zardiashvili, 'Power & Dignity: The Ends of Online Behavioural Advertising in the European Union' (PhD thesis, Leiden University 2024)

100. Luciano Floridi, The Ethics of Information (Oxford University Press 2013) 103

101. Ibid.

larly the EU Artificial Intelligence Act and Article 8 ECHR interpretations, could provide a more robust and comprehensive standard for protecting dignity in emotionally sensitive, algorithmically-driven interactions.

Moreover, in line with Article 53 of the EU Charter of Fundamental Rights, the provisions set forth by the EU Artificial Intelligence Act must be interpreted and applied without prejudice to the existing human rights standards recognized by the European Convention on Human Rights and other applicable international treaties.[102] This implies that regulatory actions against manipulative AI systems under Article 5(1)(a) of the AI Act should not only meet the baseline set by the Act itself but should also be consistent with and indeed reinforce the fundamental protections of informational autonomy and privacy guaranteed by Article 8 ECHR.

7 Conclusion

This paper has demonstrated that emotionally manipulative design in dating applications raises significant legal challenges under both the 2024 EU Artificial Intelligence Act and the European Convention on Human Rights. These systems do not simply shape user preferences or foster convenience but they influence the very terms on which individuals form relationships, express desire, and experience affective autonomy. In doing so, they affect legally protected interests that lie at the intersection of regulatory oversight and fundamental rights protection. Where design features bypass reflective decision-making, exploit affective vulnerabilities, or create sustained behavioural dependency, the user's autonomy is not respected but strategically bypassed. In such environments, consent loses its normative meaning, and engagement becomes the product of structural conditioning rather than free will.

The Artificial Intelligence Act represents a vital first step in recognising this risk. By prohibiting manipulative AI systems that distort behaviour beyond consciousness, it articulates a legal threshold for design-based influence. However, as shown throughout this paper, enforcement challenges remain. The difficulty of demonstrating likely harm, the ambiguity of behavioural thresholds, and the diffuse nature of affective manipulation all limit the provision's practical reach. Without clear interpretive guidance and robust institutional enforcement, the protective promise of Article 5(1)(a) may remain unrealised.

In Article 8 of the Convention, there is a crucial supplementation to the AI Act's regulatory tools. It ensures that digital environments are judged not only by their intended function, but by their impact on human dignity, psychological integrity, and the construction of private life.[103] By interpreting manipulative design as a potential interference with these rights, courts can assess whether system-level influence exceeds what is acceptable in a democratic society. In doing so, they shift the burden from user vigilance to institutional responsibility.

While this paper has primarily examined manipulative design within the European context, international comparisons provide valuable perspective. For example, California's Consumer Privacy Act explicitly addresses manipulative interface designs known as 'dark patterns,' emphasizing transparency and consumer autonomy.[104] Unlike the AI Act's specific concern with subliminal or unconscious manipulation, California's legislation targets deceptive user interfaces broadly, highlighting a regulatory trend towards increased accountability for manipulative digital practices beyond Europe.

Although consumer protection laws and the Digital Services Act (DSA) provide important complementary perspectives on manipulative practices in digital environments, this article specifically focuses on the intersection of manipulative AI under Article 5(1)(a) of the EU Artificial Intelligence Act and fundamental rights protections under Article 8 of the European Convention on Human Rights. This deliberate narrowing allows for a focused legal analysis of psychological manipulation and cognitive autonomy in the specific context of dating applications. Taken together, the AI Act and the Convention offer a framework for reasserting legal accountability in technologically mediated emotional spaces like dating apps. But that framework remains incomplete.

102. Charter of Fundamental Rights of the European Union [2012] OJ C326/391, art 53

103. Ekaterina Mateeva, 'The Protection of Human Dignity, Honour and Reputation in ECtHR Case-law Concerning the Right to Respect for Private Life (Article 8 ECHR)' (2022) 11(12) Yearbook of the Law Department 12–57.

104. California Consumer Privacy Act 2018 (Cal Civ Code §1798.100 et seq); Jamie Luguri and Lior Strahilevitz, 'Shining a Light on Dark Patterns' (2021) 13 Journal of Legal Analysis 43.

Further reforms are needed to clarify the scope of manipulation, introduce presumptions for vulnerable user groups, and align regulatory classifications with fundamental rights. However, a more precise regulatory approach could entail prohibiting only those specific design features within dating apps that demonstrably deploy manipulative techniques to materially distort user behaviour, rather than subjecting entire platforms to outright prohibition. The proposed Digital Fairness Act represents a step in this direction by targeting dark patterns and addictive interface design, reinforcing the principle that digital services must respect user autonomy and well-being. These steps will help ensure that emotionally manipulative systems are not shielded by the rhetoric of innovation but held to standards consistent with autonomy and human dignity.

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