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MODERN CONSTITUTIONAL REFORM – REBALANCING THE 3 BRANCHES OF GOVERNMENT FOR GREATER GOVERNANCE EFFICIENCY ON U.S.A EXAMPLE

Rafal Pruchniak*

Abstract: This manuscript presents a more efficient form of democratic governance which, however, maintains very strong checks and balances. Although, legislation could be passed by the executive as well, all legislation would have to be approved by the courts to be economically sound and socially just. Supreme Court would take on the role of a powerful moderator-arbiter efficiently flowing legislative agendas which would be subject to higher standards of review. All of the branches would be electronically elected, ranked and ultimately responsible to voters provided they followed the elevated standards. This novel system has potential to be adopted around the world as it is politically neutral and could quickly catch up with technological advancements. The article contains other multiple governance efficiency enhancements related to free speech and electoral processes.

Keywords: Constitution; Reform; Governance; Efficiency; Electronic

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INTRODUCTION

For various reasons democracy is widely believed to be the best governance system, although not perfect, which is also well understood.[1] This belief is a problem in and of itself and a trap for governments around the world which should at least attempt to improve democracy and its processes. After reading how ineffective, the U.S. most effective senator[2] was, I thought to myself there needs to be a better system and why not make it as close to perfect as possible. Here is what I devised:

1. President would have competing legislative powers to the legislature.

2. Legislature with a small majority 55%[3] of electronically casted votes could veto the president.

3. President could veto the legislature, however also a small majority of 55% could defeat the presidential veto.

4. Supreme Court (one of its multiple panels[4]) could strike down laws that are not "economically sound or socially just."

5. Availability of electronic public referenda on economically sound and socially just topics, and public vote of confidence for the executive.

These simple 5 changes would dramatically improve governance effectiveness, would also bolster diversity, equity and inclusion agenda and could potentially be widely adopted around the world. The broad constitutional requirement that all laws be economically sound and socially just would by its own definition strengthen the need for equity, inclusion and diversity.

While I cannot empirically prove the benefits of these reforms in this article yet, student surveys for example and student moot political proceedings would. The plan going forward is to involve interested students in this research.

In summary, the benefits are as follows, an executive with legislative powers could decidedly cut through typical inefficiencies of agreeing on legislation by multiple parties. However, the legislature being allowed to veto the executive would ensure that the majority interests are still represented. Presumably a more frequent

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[1] A recent poll suggests Congress approval percentage can be as low as 16%. The Economist/YouGov Poll, page 54., January 12-14, 2025. https://d3nkl3psvxxpe9.cloudfront.net/documents/econTabReport_62FWpzz.pdf (Last visited February 6, 2025)

[2] Out of hundreds sponsored bills only handful become laws. For example, Senator Peters most effective lawmaker of 116th Congress sponsored 86 bills with only 10 of them becoming law. Carrie Moore, "The Do-Something Members of 116th Congress: Legislative effectiveness study from Vanderbilt, UVA identifies member success in advancing bills." March 17, 2021. https://news.vanderbilt.edu/2021/03/17/the-do-something-members-of-116th-congress-legislative-effectiveness-study-from-vanderbilt-uva-identifies-member-success-in-advancing-bills/ (Last visited February 6, 2025)

[3] Percent needed to veto the President could be set at of 55% of all votes or 51% of all votes including 25% of non-presidential party minority vote, thus bolstering minority input.

[4] There is a need for at least one more panel of Supreme Court judges in order to make it more efficient. Presumably two panels would make the Supreme Court twice as efficient. Judges should be elected for one 10 year term.

competitive election of such a president would also ensure minority interests are also considered more often. Finally, the Supreme Court would reduce potential duds from the executive or the legislature by basically disallowing legislation that is not economically sound or socially just as calculated by politically neutral Congressional Budget Office (or newly created independent Public Referendum Office). Legislation quality would also thus be improved. Electronic public referenda also on only economically sound and socially just topics or public confidence referenda would provide a backstop to politicians' excesses.

I will attempt in the article to describe more details and the dynamics of other related potential efficiency and fairness changes.[5]

I. CONFLICTING LAWS – PRESIDENT VS. LEGISLATURE

In case of conflicts between presidential law and legislature law, where no vetos were issued, Supreme Court would have the right to merge the laws, alter or invalidate them based on their being more socially fairer[6] and making better economic sense. The Supreme court input would thus keep the legislative process ball rolling.

A question arises whether budget could also be enacted by the president. Multiple solutions come to mind namely, legislature could vote first, or veto requirements of the president budget changes could be lowered to be easier to be issued during enactment of the budget or when conflicting with legislature approved budget.

A. Minority Rule: Efficiency vs. Balance of Power

Legislature's veto on Presidential legislation could also be further enhanced by being valid only with a higher percentage of minority vote for example 51% of all votes including 25% of minority of non-presidential party vote. This would ensure a more traditional balance of power without the risk of its concentration within the office of the president, while at the same time maintaining executive efficiency. The executive here would be more sensitive to the minority political views and this way president's power would be curtailed.

B. Role of Supreme Court in Vetos

Supreme Court could be allowed to increase or decrease supermajority to overcome the veto of the president. The Supreme Court could limit presidential veto in circumstances of repetitive veto abuses especially in narrow majority/minority balance margin in order to strengthen economic sense or social justice of the legislation.

For instance, in a 51/49 divided by party Congress 55% supermajority thresholds could be too high especially where the president over-crowds with its legislation the whole political-legislative agenda disregarding social justice and/or economic sense. An easy to imagine example of such injustice could soon be too rapid AI introduction and its laws or too burdensome climate change mitigation laws which

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[5] Although, U.S. constitution was a first of its kind and was quickly copied by other countries, that, however, does not mean that the balance of power between executive, legislature and judiciary in modern constitutions around the world today is effective or even that it colloquially makes any sense given ineffectiveness of the legislature.

[6] Meaning; more socially just.

are hurting financially car drivers and miners respectively without the government's fair assistance and/or compensation.

In conclusion, the Supreme Court would take on a moderator-arbiter role here by focusing on the effective flow of legislation in a thinner legislative veto threshold of for example 52% from 55%. This would create more flexibility in the governance system, take into account minority view and increase likelihood of a compromise.

C. Polarization vs. Ranked Choice Voting - How and Who Gets Elected Matters

Across the world, many governments whether democratic or nondemocratic are poorly performing due to high cost of living, climate change, and wars. According to a Swedish think - tank half of democracies saw decline in their robustness in forms of nondemocratic pressures[7] - for example in Poland the Supreme court was replaced with ruling political party judicial cronies, U.S. experienced insurrection and many other countries saw reemergence of far-right anti-immigration, anti-trade political narratives. This need to cheat/manipulate by democracies in order to stay in power and their corresponding scapegoating of globalization effects and political polarization requires us to carefully rethink also how and who gets elected in addition to how effectively such representatives vote.

Thus, we will need to tackle primaries polarization and related to it legislative non-performance and risk of power concentration. All these can be mitigated to a significant extent by more frequent and more electorate representative ranked choice voting elections conducted for efficiency purposes electronically. As an example, Estonia utilizes electronic election voting since 2001 and in 2023 over half of the votes were being cast online[8]. In addition, U.S. has a couple jurisdictions that already use ranked choice voting for example New York City[9], State of Alaska[10] and State of Maine.[11]

D. Election Funding - Who Pays for Elections and to Whom Matters

A need for more frequent elections would require correspondingly partially public funding to individual candidates who, however, submitted their political speech narrative and agenda to the courts for prior approval with the constitution by being economically sound and socially just. Since elections would be held twice as often, the first year of the reform public funding could correspondingly pay for half of the previous year election cost. This would be a good rule of thumb to lower the election costs. In future years per individual, per enterprise contribution limits could be rebalanced to be also economically sound and socially just.

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[7] Reuters, "Half or world's democracies in decline, international watchdog says.", Nov. 29, 2022. https://www.reuters.com/world/half-worlds-democracies-decline-intergovernmental-watchdog-2022-11-30/ (Last visited February 6, 2025)

[8] Eesti Rahvusringhaaling, "Estonia sets new e-voting record at Riigikogu 2023 elections." March 6, 2023. https://news.err.ee/1608904730/estonia-sets-new-e-voting-record-at-riigikogu-2023-elections (Last visited February 6, 2025)

[9] New York City Charter, Section 1057-g.

[10] Alaska Statute Section 15.15.350.

[11] Maine Revised Statutes Title 21-A. Section 723-A.

Public election funding would allow outsiders to enter politics more easily just as it would foster new more independent ideas. Again, constitution should only allow speech and political narrative that is more likely than not economically sound and socially just. For example, current narrative of detention camps for undocumented immigrants and mass deportation is clear political populist manipulation making little economic sense given low unemployment and need for laborers.

The remainder private donations should be capped per individual and per enterprise with the limits set to enhance one person one vote rule with economically sound and socially just exceptions for enterprises and not-for-profits of great social importance. For example, these could be various rare disease foundations.

Nevertheless, these private donations should not exceed $200,000 purely to limit the cost of political narrative.

Dealing with AI and income and health inequality we need to give the power back to the individual voters away from special interests and corporations, while allowing for economically and socially constructive free speech.

II. WHAT IS "ECONOMICALLY SOUND AND SOCIALLY JUST" STANDARD?

This standard may be already developed in our culture and could further evolve with that culture's own evolution and hopefully through court rulings.[12] For example, the criminal and civil trials may indicate to us what is each life worth and what is its each individual contribution to the society. We know that each life is equal in value but each individual's contribution is not. These literal values would be necessary for instance to determine the cost of let's say health inequality. Then this inequality could be rebalanced through payments for healthcare or welfare payments all under economically sound and socially just standard.

A. Elected Judges - Who Will Interpret the Law Matters

Voters would have a stronger influence on judicial review, through elected by the public judiciary. Election of entire judicial branch would strengthen importance of public input.

1. Judges Elections and Compensation

In each state and circuit there would be 4 pools of recommended candidates with a law degree and a minimum of 8 years post legal bar experience. Academia pool recommended equally by faculty, staff and students organizations in ranked choice voting ("RCV"), U.S. attorney pool, recommended in RCV by U.S. attorneys and staff equally, U.S. Bar Association pool recommended in RCV by members, judicial pool recommended in RCV by judges and staff.

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[12] Unfortunately, U.S. Supreme Court remains quite ambivalent about judicial review of economic policy stemming from legislation. This is especially troubling in era of social media being used for populistic purposes. See *FCC v. Beach Communications, Inc*., 508 U.S. 307 (1993). *San Antonio Independent School District v. Rodriguez,* 411 U.S. 1 (1973). But see *U.S. Department of Agriculture v. Moreno,* 413 U.S. 528 (1973) or *City of Cleburne v. Cleburne Living Center,* 473 U.S. 432 (1985).

Such candidates would be ranked and those at the first one third of each pool and first one sixth in the attorney pool, would be ranked choice voted again by the general public in that state or circuit to be elected for the office they seek. Supreme Court elections would reduce these pools to first one tenth of the recommended candidates out of which general public would rank choice vote.

Regular judges would be elected for 3 x 5 year terms. Supreme court for 1 x 10 year term. Post term former judges could work anywhere but would be renumerated by the government and the employer and collect extra salary for extra work or continue to collect that salary until death without working.

Combined extra perks typically offered by the academic institution or nonprofit organization such as housing or transportation would have to be reasonable and not exceed 100% of judges previous annual salary. Former judges could be compensated for guest lectures and interviews. Typical reasonable perks such as travel and lodging would be allowed when done together with the lecture or interview but could not exceed 100% of judge previous annual salary. All these items of extra income would be combined.

Former judges could publish multiple books yearly and receive compensation for these books. Former judges could work as attorneys. Former judges' children could obtain college tuition waiver if offered to other employees' children.

Judges and U.S. attorneys, Senators, Representatives salaries and other federal state and local employees, should be competitive with the private sector taking into consideration job security, hours worked, qualifications, perks, stress and other demands. Hours worked should be reported and routinely verified.

Judges would also be evaluated by independent compensation agency which would determine objectively motivating bonuses for example number of cases in a year vs number of successfully appealed cases.

Of course, judges including supreme court judges should recuse themselves from cases they or their family members have interest in or in which their participation could be viewed as impartial. In such cases special appellate judges from a circuit different than case in question could be randomly selected. Such special appellate judges would be elected by the public in normal elections for appellate judges and perform regular duties of appellate judges and the duties of special appellate judges, as described above remotely.

B. Congress Persons and Other Federal Employees - Terms, Salaries, Bonuses, Compensation Agency

Similarly, congress persons should be elected for 3 x 5 year terms. Congress persons would be allowed to work in private sector after ending term but would be renumerated by the government and the employer and collect extra salary for extra work.

So, for example if a congresswoman returns to work as sales representative of medical devices after 5, 10 or 15 years her former congress person 300 thousand salary/pension would vest in 50%, 75% and 100% respectively and be paid directly to

her if the employer furnishes a monthly statement that she met her performance targets. Fair market value compensation bonus could be added to the salary for extra sales and would need to be reported to the government. She would also have the option to not take the job or quit her job and collect her previous congress person salary but not bonus.

Congress persons and all other government workers would also be ranked by a specially established independent government compensation agency on their objective performance and paid motivating bonuses. The compensation agency would also monitor if congress persons met their objective hourly work quotas necessary for pensions to vest and not be forfeited.

Naturally terminations and downsizing would have to meet the economically sound and socially just standard which would require doing it for sound economic reasons taking into account output these workers generate, be conducted under a fair policy accounting again for merit, performance over the years etc.

The final decisions should be made by the independent compensation agency after legislation cutting funding and reducing headcount which met the economically sound and socially just standard. This would preclude political terminations while maintaining objective and merit based government workforce.

C. Rankings of Governmental Employees

Yearly rankings and total compensation of governmental employees and elected officials would be public. Each governmental employee and elected official would every year receive an objective point scorecard and be ranked accordingly. This would objectively enhance employee/official performance and strengthen public voting input accuracy.

1. Doubtful Security in Inefficiency of an Unpopular Agenda

The Achilles heel of this reform so far is the risk of electing a president who has power to efficiently do good things as well as "bad things." However, those bad things would need to still meet the economically sound and socially just test, as interpreted by Supreme Court and withstand potential for a legislature veto.

A question logically arises on what else could be done to create an effective emergency break such as vote of non-confidence for a prime minister in some European countries for example, or simply breaking by counting on inefficiency of unpopular agendas as in the U.S.?

This breaking by inefficiency of unpopular agendas needs to be thoroughly surveyed in several foreign countries and U.S. as it seems rather illusory. On a recent example U.S. Congress almost repealed health insurance for millions of citizens in a very unpopular attempt. Another example where popularity meant little would be reversing popular women's reproductive and health rights by the Supreme Court. Thus, instead of fear mongering of any governance innovation and having a cult-like treatment of U.S. archaic constitution let's do some political science research, conduct surveys and decide as voters whether we would be interested in a modern cutting-edge constitution, because our current system of governance is far from being perfect.

What could be a solution and check on the power of the legislating executive is a vote of no confidence for the president by the public in the form of a citizens' referendum for which signatures would need to be collected to meet a certain required threshold. Ideally this would be done online and on the phone both the initial signature threshold vote and the referendum vote. The referendum question would be defined and overseen by the supreme court.

10 million online initial e-signatures and 51% of the e-votes with 20 million casted votes minimum seems a rule of thumb, the first attempt that would require again more political science research, surveys and ultimately contemporaneous supreme court ruling on fairness of those threshold numbers.

Given recent abuses of power by for instance PMs in U.K. and Israel it seems likely the citizens non confidence referendum would be used and tested. Therefore, designing its thresholds would be critical and those thresholds should be small enough to be workable. The referendum question should also be approved by the Supreme Court as fair. Further practically the initial threshold and the minimum casted votes threshold should also be adjusted by the Supreme Court before each vote of confidence referendum to be fair and socially just.

To illustrate what could be the role of Supreme Court in a referendum I will use a not so recent presidential infidelity example; a fair referendum/vote of confidence question could be: "Did lying about extramarital affair to the public and the extramarital affair itself are grounds for removal from the president office of Bill Clinton?" Though given large percentage of statistical infidelity of 71% in the U.S.[13], perhaps the initial vote should be increased to 20 million and minimum casted votes to 40 million as 45 million voted for Bill Clinton in 1992 as a rule of thumb.

It should be also considered whether introductory initial vote of let's say of only 1 million of citizens would trigger Supreme Court review of constitutionality of the to be voted on issue in a referendum and the thresholds for the subsequent initial vote and minimum casted votes. Such a smaller referenda could be utilized in regular governance outside of vote of confidence realm which I will discuss in more detail further in this article.

2. Electoral College Obstacle

Although, Electoral College effectively gives weight/percentage wise more power to swing states reducing somewhat disparity and inequality between largest costal cities and smaller inland agglomerations and rural areas, such division of power seems very inefficient and development wise shortsighted.

As background, electoral college was enacted in 1787, when vast numbers of population were illiterate, and the founding fathers were worried about informed and

[13] PRNewswire Technopedia, "Infidelity Statistics: US Tops the Cheating Charts while 31% of Affairs Involve a Co-Worker"., September 09, 2024. https://www.prnewswire.com/news-releases/infidelity-statistics-us-tops-the-cheating-charts-while-31-of-affairs-involve-a-co-worker-302241988.html (Last visited February 6, 2025)

intelligent voting decision-making.[14] Currently, electors vote in 99% in accordance with their party affiliation[15] and voters have easy access to media.

More research would be needed to prove that a national unified plan for development and spending would be more optimal, in finding more wholistic development projects in the long run versus counting on electoral college relic in mitigating economic development disparities. Besides, the two senators per state allocation seems to somewhat work already in ensuring all state interests are preserved.

Consequently, a long-term, wholistic development strategy would be required for budget decisions to be economically sound and socially just and therefore in accordance with the constitution every day and not only before elections. Such development policy is well functioning in European Union ("E.U."), where taxpayers' funds out of E.U. budget are redistributed to most important policy projects largely escaping local politics in name of common E.U. good through shared multi-level management, general principles of partnership, equality, non-discrimination and sustainable development.[16]

In fact, E.U. cohesion policy reduces regional disparities and promotes economic and social convergence among member states.[17] By extending regional funding and grants to impoverished areas E.U. will have tripled every euro of investment going through the cohesion program by year 2047.[18]

Regarding founding fathers concern about informed voting, we need to rather focus on benefits of the free speech reform described in more detail further below.

III. TWO PARTY OR MULTIPARTY SYSTEM?

Generally, a two-party system is more stable and efficient as the winning party takes all and does not need to form a coalition to govern. For purposes of this reform, counterbalance to strong efficient presidency will be desired by strong two-party centrist legislature.

Conversely, countries with well-functioning multiparty system could rebalance the bigger relatively power of the legislating executive with easier to trigger and administer public referenda.

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[14] Clare Roth, "The Electoral College will determine the winner." DW.com August 22, 2024. https://www.dw.com/en/what-is-the-us-electoral-college/a-69090790 (Last visited February 9, 2025)

[15] *Id*.

[16] Magdalena Sapała,"The European Structural and Investment Funds", Brief, Members' Research Service, European Parliament. Pages 2 and 3. July 2015. https://www.europarl.europa.eu/RegData/etudes/BRIE/2015/565873/EPRS_BRI(2015)565873_EN.pdf (Last visited February 6, 2025)

[17] Joint Research Center, European Commission, "Cohesion policy benefits EU economy and lowers regional disparities." April 11, 2024. https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/cohesion-policy-benefits-eus-economy-and-regions-2024-04-11_en (Last visited February 6, 2025).

[18] *Id.*

A. Need for Public Referenda and its Independent Agency

Online referenda's enhanced accessibility and Supreme Court review of social justice and economic sense, would create more viable governance tools that would decide with more ease contentious topics such as women's right to choose or reparations for the colonial era.

Statistical analysis could be employed here by Supreme Court reducing the initial vote count in a referendum predominately impacting women and not increasing the minimum casted votes in a referendum on reparations despite those would predominately be paid by persons that were not responsible for slavery as examples of pursuing fairer referenda.

However, public referenda would need independent and apolitical pre-referendum analysis to calculate for example damages related to legacy of slavery today be performed. Such calculation would be done in similar manner to Congressional Budget Office score which should be estimated by an apolitical office similar to Federal Reserve which is independent and not at risk of terminations for political purposes.

The expertise and independence of such established "Public Referenda Office" would counterbalance an elected Supreme Court operating under Social Justice and Economic Sense clauses presumably leaving some more leeway in the hands of such well briefed public.

B. Gerrymandering vs. Protecting Voting Rights of Poor Voters

Neither party should be allowed to gerrymander. Voting districts should be periodically reset to give poverty stricken populations adequate to their numbers representation whether in inner-cities or rural areas.

Social justice and economic sense clauses would clearly disallow gerrymandering but the constitution should require resetting districts to fairly represent the poor and disenfranchised. Specifically, inner city predominant renters vs suburbs owners vote should not be diluted. Predominantly, heavily indebted rural areas should also be reset to mitigate any vote dilution effects.

C. Impeachment of the President

Checks and balances of impeachment should be made easier as they would affect and counterbalance a more efficient executive. Thus, all crimes should be potentially impeachable with a simple or small majority. In other words, the executive should be held accountable at a standard like any other citizen.

D. Electronic Voting and Its Impact on Other Countries

US and other nations should fund a non-for-profit independent institution that would help design, implement and monitor standardized independent electronic elections.

The voter identity should be encrypted for the public. However, the encrypted number and vote should be public to enhance the vote credibility.

Private				Public
Public				
Social security number equivalent	->	*encrypted number*	->	*vote*

IV. FREE SPEECH YES BUT NOT REPETITIVE KNOWN MISLEADING STATEMENTS

Courts should have the right to gag individuals and groups including political parties from speech that is known to be unethical, unjust, immoral, unfair, unfeasible, unreasonable, false, manipulative and/or misleading to protect the public and public discourse quality.

For example, using individual act to justify a policy towards a larger group is used by media to get a point across. However, this method is often abused in election manipulation and the courts should establish rules requiring additional statement of relevant statistics or disclosure that individual acts do not define a group etc.

A. Reasonableness Doctrine

The reasonableness doctrine is used in a number of countries, including the United Kingdom, Canada, Australia.[19]

The standard is commonly used by courts there to determine the constitutionality or lawfulness of a given piece of legislation and allows judges to make sure that decisions made by public officials are "reasonable." Statistical research would have to be conducted to determine to what extent unreasonable legislation was prevented in countries with reasonable clause vs. countries without it.

Prevention here could be active or passive where risk of the clause application by the courts on its own raises legislative standards. Reasonable clause scope would also need to be then compared to potential scope of economically sound and socially just clauses which seem to be more directional and finer in its application.

B. Role of Speakers - an Alternative

Speakers could also receive each year a special delegated vote allowing them to vote on behalf of the entire congress or groups of congress persons. The delegation would dramatically increase efficiency of the congress. Such speakers' legislation could be vetoed by the president, or vetoed by congress in a majority vote. The delegation could be withdrawn completely, also with a majority.

A more delicate and flexible change and posture would be to delegate such vote to the speaker and two other congress persons or groups congress persons and allowing withdrawing of such delegation with less than majority vote. For maximum flexibility delegations could encompass a specific reform. A good idea would be to allow citizens in a referendum to block such delegation or veto individual legislation.

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[19] Hadas Gold, Richard Allen Greene and Amir Tal, "Israel passed a bill to limit the Supreme Court's power. Here's what comes next" CNN., July 24, 2023. https://www.cnn.com/2023/07/24/middleeast/israel-judicial-reforms-vote-explained-mime-intl/index.html (Last visited February 6, 2025)

Enhancing speaker powers on its face seems a less radical governance alternative and it could be in theory easier to pass. We as voters and global citizens should rethink the described reform and honestly answer to ourselves whether the proposed reform is that futuristic or rather American constitution is that outdated. Would there be "room" in this alternative for a legislating president? Well, there is room for entire congress voting now thus competition, different perspective and discussion with an effective legislating president in theory should be quite beneficial.

A question emerges again whether each quasi-speaker with delegated 55% of legislators power as described above could veto president's legislation? In my opinion, mutual veto powers could at times lead to a compromise and at times to a tit for tat paralysis. Thus, the role of Supreme Court in raising or lowering required veto percentage in such political impasse would be particularly important. Similarly crucial in such an impasse would be public referenda. Although this seems to add level of complexity and uncertainty to this new system of governance in theory, practically it could infuse dynamism into this system and generate more representative and effective decision making.

V. UNBLOCKING VOTE AND FLOW OF POLITICAL AGENDA

Given naturally easier electronic voting only a larger group of congress persons should be able to submit an issue / proposal for vote. 15 – 20 votes to bring a vote to the floor should suffice as a matter of efficient and representative policy. This would also help maintain a centrist congress.

Furthermore, Supreme Court should be allowed to block or modify any counter vote by the president or the speaker if its purpose was to impact the passed by entire congress legislation. Supreme Court should have similar blocking or modifying rights in reverse situations or conflicting situations with public referenda. In conflict with public referendum the 3 branches could vote to override with majority vote a public referendum result. Presumably, voters would have a chance to electronically vote out of office such branches members in subsequent elections.

A. Electronic Voting at All Legislative Bodies

Remote work opportunities for all legislative bodies including electronic voting are critical to their effectiveness and efficiency and would bring legislators closer to current standards and private citizens productivity.

B. Prosecuting the President, House and Senate Leaders

The risk of electing sociopaths, although diminished by the described earlier free speech and election reforms, would require more opportunities to remove such politicians from office, whether by courts, congress or in a public referendum. The current FBI policy, of not prosecuting a sitting president, proved dangerous in the U.S. and Israel. It simply delays the stick and offers only carrots instead and thus it should also be changed.

C. Judicial Police

To diminish potential for constitutional crisis, judicial branch should have separate enforcement policing powers, with appropriate federal funding, and also co-management powers of shared police force in addition to the above described own judicial force. Such enforcement policing could be used in contempt processes and enforcement of judicial decisions. Co-management of shared police force would be beneficial in large cases needing more personnel.

These specific judicial branch capabilities would bolster checks and balances and coequality among governmental branches.

D. Independent Attorney General

Independent Attorney General similarly to federal reserve would also decrease the potential for constitutional crisis.[20] Currently, the AG is reporting to the president creating conflicts of interest and overly politicizing the Justice Department.

E. Secret Vote on President's Nominees

Congress vote on president's nominees should be cast in secret to maintain stronger congressional oversight and merit based voting eroded currently by risk of political reprisal, autocratic and group think tendencies of many politicians.

CONCLUSION

To sum up we truly need a convenient internet (and phone) form of voting to elect and hold politicians accountable. Otherwise, we will keep living in a not so "free" as often manipulatively advertised society. I hope this article will spur readers interest in constitutional reform currently being obstructed by a dogmatic treatment of the American constitution.

[20]See Fareed Zakaria CNN interview with Rachel Barkow on the brewing constitutional crisis and flaws of the U.S. constitution from Feb 23, 2025. https://www.cnn.com/2025/02/23/politics/video/gps0223-americas-fragile-justice-system (Last visited February 23, 2025).

REGISTRATION OF REAL ESTATE – A COMPARATIVE ANALYSIS OF CHINESE REGULATIONS WITH EUROPEAN TRADITIONS

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Abstract: Real Estate takes in a vital large part of citizen's private property nowadays, especially in big cities where more and more excessive-priced houses boost the significance of Real Estate. In this sense, protecting the owners' all kind of rights and ensuring secure and efficient transaction is coming to the centre place of Real Estate related mechanisms and legislation, among which the registration of Real Estate is a general model to achieve this globally. As to China, the registration of Real Estate system was from both of the Civil law tradition and Common Law tradition, and mostly it was the Civil law tradition of European Continent. However, there exist some specifics between Chinese regulations and European traditions, such as the institution setting and legal effect of registration, which will be the main object of study of this paper. Basically, this paper would firstly give a brief introduction about the registration of Real Estate; then show the Chinese latest institutional arrangements and its history of registration of Real Estate and the legal rationale behind them; thirdly try to analyze the regulations of European Continent, mostly the Germany and France, as to Germany, focusing on its special institution setting, as to France, focusing on its legal effect; fourthly since both of the German tradition and French tradition has substantial influence on Chinese modern civil law including the Real Estate Registration, the comparative analysis of them and what China should reform in the next step would be showed.

Keywords: Real Estate Registration; Civil Code of PRC; European Traditions; French Law; German Law

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INTRODUCTION

A. What Real Estate Is

According to a general legal explanation, the real estate is "property consisting of land and the buildings on it, along with its natural resources such as crops, minerals or water; immovable property of this nature; an interest vested in an item of real property, such as buildings or housing in general. Also: the business of real estate; the profession of buying, selling, or renting land, buildings, or housing."[1] In countries with personal ownership of real property, civil law protects the status of real property in real-estate markets, where estate agents work in the market of buying and selling real estate. The word "real" derives from Latin res ("thing"), which was used in Middle-Age English to mean "relating to things, especially real estate".[2] In English, two words have the similar meaning--estate and property. The paper will use real estate rather than real property in order to conform with terminology habit. Generally speaking, the real estate has the same meaning with real property[3], because both of which could be protected by some forms of real actions, in contrast to personal property or personal estate, where a plaintiff would have to resort to another form of action. The law now broadly distinguishes between real estate (land and anything affixed to it) and personal estate (everything else, e.g., clothing, furniture, money). The related conceptual difference about them was between immovable property, which would transfer title along with the land, and movable property, which a person would retain title to. Basically, real estate has the similar meaning with real property or immovable property; and personal estate has the similar meaning with personal property or movable property. Due to limited length of paper, the article wills not discuss the categories and distinctions of these concepts.

B. Why Real Estate Need Registration

The real estate registration is a legal term used for recording owners' or obligers title, rights and their changes circled with a certain piece of real estate. Real estate registration is a universal practice in the world. Why real estate needs to be registered compared with personal estate? The next is reason analyze. The content of recording is very complex because those rights related with a certain real estate are multiple, which also be called Bundle of Rights.[4] Real estate is unique because there are multiple

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[1] OXFORD ENGLISH DICTIONARY, P. 546 (9th ed. 2011).

[2] *Id,* P. 1192.

[3] Anyway, some differences arising from the different legal traditions and their terminology practices do exist, but this paper will not pay its attention to distinguish the usage of estate and property. However, this paper will mainly use the word of estate to express the certain concept. See POLDEN, P., *Private Estate Planning and the Public Interest,* The Modern Law Review, vol. 49, P.195-213 (1986).

[4] The term, "bundle of rights," came into use during the late 19th century. Prior to that, the idea of property entailed more the owner's dominion over a thing, placing restrictions on others from interfering with the owner's property. "Bundle of rights," however, implies rules specifying, proscribing, or authorizing actions on the part of the owner. See DANIEL, Klein B., and ROBINSON,

"rights" associated with each piece of estate. For example, right to sell, right to lease, right to acquire minerals/gas/oil/etc. within the land, right to use, right to possess, right to develop, etc. These dividable multiple rights are important because the owner of the real property can generally do what he/she chooses with each right. For example, the owner could choose to keep all the rights but lease the right to dig for oil to an oil company. Or the owner could choose to keep all the rights but lease the property to a tenant. In other words, the owner can elect to keep and/or lease and/or sell the rights to his/her land. And a property can simultaneously be "owned" by multiple parties. So, it is hard for the society and third parties to know the true situation of a certain piece of estate, which always is vague and complicated. That is the need to set up a proper record mechanism to show them and their changes out.

In the history, the earliest registration on real estate was in Ancient Roman Law and Tang Dynasty (A.D.618-907) in China. In Tang Dynasty, real estate were transacted through three mechanisms:立契 (Li Qi: When land or house transactions deals, the two parties need to draw the contract under the direction and recording by local government, and taxes need to be paid), 申牒 (Shen Die: Government's registration book on national's real estate mainly in land and houses. A transaction without 申牒 could not be protected by the authority)，过割 (Guo Ge: a kind of transfer and registration procedure when land or houses to be sold or mortgaged or bestowal and any other estate title alteration. During the procedure, taxes need to pay).[5] However, the modern real estate registration was derived from the City Center's Stadtbuch in the north of Germany around 12th century.[6] Nowadays, almost all countries around the world have a specialized public institution being in charge of the registration of its nationwide real estate.[7] So, the real estate registration has developed into a universal system throughout of the world. However, there exist many differences among countries on the real estate registration system because of their different historical and social conditions. Next, the

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John, *Property: A Bundle of Rights? Prologue to the Property Symposium,* Econ Journal Watch, vol.8(3), P.193-204 (2011).
Ownership of land is a much more complex proposition than simply acquiring all the rights to it. It is useful to imagine a bundle of rights that can be separated and reassembled. A "bundle of sticks" - in which each stick represents an individual right – is a common analogy made for the bundle of rights. Any property owner possesses a set of "sticks" related directly to the land. E.g., United States v. Craft, 535 U.S. 274, 278, 152 L.Ed. 2d 437, 446, 122 S.Ct. 1414, 1420 (2002) (describing the "bundle of sticks" as a "collection of individual rights which, in certain combinations, constitute property").

[5] There are detailed provisions on the possession, sale, inheritance and mortgage of land in <the Law of Tang Dynasty>(《唐律疏议》. In the Tang dynasty, there was the book account, so that the people could buy and sell their lands according the books themselves. It recorded the name, age, gender, land area and land area of the people's households. It stipulated that "all sales (land) shall be subject to an registration by the Ministry of Justice(凡买卖（土地）皆须经所部官司申牒)". "if there is no registration to buy or sell, the land shall be returned to the owner(若无文牒辄买卖，财没不追，地还本主)." Every three years the government would renew the registration.

[6] WEN Shiyang(温世扬), LIAO Huanguo（廖焕国）, *Wuquan Fa Tonglun（物权法通论）[General Theory on Property Law]*, People's Court Press, p.139-143 (2005).

[7] The precondition of the real estate registration is private ownership system. That is to say the real estate registration will be no necessity to exist in public ownership system countries where all of the real estate belongs to the state so no need to register.

paper will mainly discuss real estate registration between China and EU.

C. Outline

This article is divided into four sections. Section 1 outlines the definition and general information of real estate registration; section 2 give a brief overview of the history and present situation of China, mainly the historical development of Chinese real estate registration; section 3 provides regulations and institutions design under the European tradition, especially the institution setting in Germany and legal effect of the registration in France; section 4 ends with the comparative analyze between China and European tradition, some inspirations and improvements for China to perfect the real estate registration regulatory mechanism would be explored and makes some conclusions passingly. The purpose of this article is trying to give a whole map of Chinese real estate registration situation and then come up with possible approaches to improve it mirroring European traditions.

I. CHINESE LATEST REGULATIONS AND INSTITUTIONS

A. History Review

1. Before 1912 in Ancient China

China's land-centered registration system has a long history and has been closely linked to land tax since its inception. According to scholars' research, the registration system related with land transaction began in the middle and late Zhou Dynasty (BC1046-BC256).[8] As it has been said above, in the history of China---Tang (618-907) and Song (960-1279) dynasty, Chinese real estate registration in its early form has grown up and developed naturally. Land sales must be reported and registered in writing by the government before they become effective. Otherwise, not only is the deal invalid, but also it is subject to severe sanctions. That is because, at that time, on one hand the centralized authority was eager to enlarge its power and control its people, land and wanted to collect more and more taxes by registering citizens' real estate clearly without omission. On the other hand, the free-market economy was developing and real estate transactions began to appear and be frequent.[9] But, because of huge protests from the landowners and taxers, adding with small-scale peasant economy being popular at that time, there was no true-meaning and efficient real estate registration system before 1900s--the late period of Qing Dynasty (1636-1912).

From the historical evolution of ancient Chinese land registration system, we can see that it was primarily associated with the land taxes. In another words, it was the

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[8] CHENG Xueyang(程雪阳), *Zhongguo Tidu Zhidu de Fansi yu Biange(中国土地制度的反思与变革)[The Reform of Land System in Modern China: Review on the Perspective of Public Law]* (8 Aug 2012) (unpublished Ph.D. dissertation, Zheng Zhou University) (on file with Fa Yuan Library, Cupl).

[9] ZHANG Jinfan(张晋藩), *Zhongguo Fazhi Shi(中国法制史)[The History of Chinese Law]*, Chinese Law Press, P.78-79 (2008).

derivative of the tax system, so its main purpose was to facilitate tax levy. The title deed of land, as to the owner or user of the land, only had collateral effect and cannot be confirmed as title legally. More importantly, the property deed data were held by the government and kept secret from the outside. Ordinary people cannot inquire about the relevant materials, which was far from the requirements of the modern real estate registration system. So, in the history before the Republic of China (1912-1949), there was no truly real estate registration system with publicity as its purpose.

2. In the Pre-Modern Time of China (1912-1979)

However, after Qing Dynasty, the Republic of China (1912-1949) has no powerful and unified central government,[10] and many wars were involved--the civil wars and two times world wars.[11] So it was hard to set up a modern real estate registration system at that time in a big country. But, from the formation and development process of China's modern real estate registration system, in period of the Republic of China, the western legal system has been introduced and accepted. China began to formally establish the modern real estate registration system officially and nationwide. After 1949, the greatest leader of China--Chairman Mao with his CCP unified the whole country, wiped out all of the warlords and set up People's Republic of China. Here the chance came. However, the public ownership and Soviet model were popular in the socialistic China at that time. In the early years of PRC after 1949, the real estate registration system has been built up too. However, as the socialist transformation completed, China totally adopted public ownership economy system, the registration system lost its existence foundation.[12] There was no private real estate ownership, so no real estate registration naturally.[13]

3. Modern Development

After 1979, China carried out the open and reform policy and the private ownership appeared to spread over. From that time, the real estate registration system with modern meaning began to grow up step by step in China. After the reform and opening up, especially after the promulgation of <the Land Management Law of

[10] After the Qing Dynesty, there were several strong regional military powers, such as Zhang Xueliang in the Northeast of China, Chen Jiongming in Guangdong of China, Sheng Shicai in Xinjiang, Yan Xishan in Shanxi and so on.

[11] The wars between the warlords, war between CCP and KMT, war with Japan, World War 1 and World War 2.

[12] After the founding of the People's Republic of China in 1949, the public ownership economy was not established immediately. There was a transitional period. This transition has two stages. The first stage was from 1949 to 1952, during which the main task was to eliminate the remaining forces of the KMD reactionaries, eliminate bandits and bullies from all over the country, and consolidate the new people's regime. The second stage, from 1952 to 1956, was also called socialist transformation of the country. That was to transform a capitalist, small-scale peasant economy into a socialist economy. The goal of reform was to establish a public ownership economy in various industries. By 1956, the public ownership of the means of production was basically realized through foreclosure. See RODERICK, Mac Farquhar, *The Cambridge History of China*, Chinese Social Science Press, P. 56-58 (KING, Faribank John ed., 1998).

[13] See Art. 5,6 of PRC Constitution (1954).

PRC>,[14] it has been recovering and developing gradually from then on.

Even though registration system in China has a long history, but in the true sense as the methods of publicity of real rights has started relatively late, and served the purpose of the land and tax administrative management from its start, with strong administrative color, which making the system cannot play its proper role to maintain the secure and efficient transaction and protect right-holders. So as a conclusion, the history of Chinese modern real estate registration is no more than 32years. It is a baby in infancy.

B. Regulations at Present

1. Regulatory Development

However, the <Land Management Law of PRC>only stipulates the registration of use right and contract right on limited state-owned lands and collective-ownership lands, which is only a tip of the iceberg for the whole real estate rights.[15] And the implementation into practice of the < Land Management Law of PRC > itself took nearly 30 years. In writer's hometown, a rural area in the north of Shanxi Province, the registration of land using-right was made successfully only last year. All of this is due to China's bloated and inefficient administrative system. Therefore, from the central government to the province, then to the city, then to the county, then to the town, and then to the village, the effect of the law has been reduced layer by layer, and finally there is nothing left. So, the real and complete real estate registration, not only land registration, truly began in 2007. On March 16, 2007, the fifth session of the 10th National People's Congress passed the <Property Law of PRC>, which give a special section in the Law providing for a real estate registration system. It clearly stipulates the legal effect, institutions, procedures, types and the compensation liability for the wrong registration. It adopted some advanced legislative experience from western countries and summarized China's past practices also, which established the basic structure of China's real estate registration and provided the overall architecture and train of thoughts for the <Real Estate Registration Law> in the future.[16] This marks a unified real estate registration system in China formally established.

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[14] <The Land Management Law of the People's Republic of China> was deliberated and adopted at the 16th meeting of the standing committee of the sixth National People's Congress on 25 June 1986 and came into force on 1 January 1987. Since then, the law has been amended three times. Article 11 and article 12 and article 13 of the law stipulate the registration procedure of collective land. In addition, article 3 to article 7 of the <Land Management Law Enforcement Regulations of the People's Republic of China>, which is a supporting administrative rule for implementation the law, provide for the procedure of registration of land in detail.

[15] In China, urban land is owned by the state and village land is contracted to farmers. The person on the land only enjoys the right to use and contract. There is no private ownership.

[16] In order to integrate land registration and housing registration, China started the real estate registration reform in 2014 and made adjustments in the legislation and institutional Settings. However, there is no specialized real estate registration law, but only in the form of provisional regulations on

Therefore, we can now summarize China's real estate registration system in two lines. The first is <Property Law of PRC> in 2007, which was integrated into <the Civil Code of PRC> in 2021. Second, it is stipulated in the unified reform of real estate registration since 2014. We will first analyze the real estate registration system in the < the Civil Code of PRC>. China's property law adopts the model of Pandectarum, a typical model of civil law and German law.[17] The Section 2 of < the Civil Code of PRC> is about real estate, divided into four parts: general principles, ownership, usufructuary right and security right. The registration of real estate is stipulated in part I of the general rules. In general rules, there are three chapters which are the first chapter: basic principles; second chapter: the establishment, alteration, transfer and elimination of property rights; and the third chapter: the protection of property rights. The second chapter is mainly about the real estate registration, which takes up 14 articles. So from a large perspective, it's the first time that the provisions of the Section 2 of < the Civil Code of PRC> have the following functions: (1) define the effectiveness of real estate registration; (2) real estate registration procedures are stipulated; (3) the real estate registration types have been improved. (4) Standardizing the liability of the registered parties and the registration authority for compensation.

2. Defects and Problems

a. Stated-Owed Problems

But the real estate registration system stipulated by the Section 2 of the <Civil Code of PRC> in 2021 has many defects. Registration is regarded as the only way to publicize the real estate, for China adopts Registration Effectiveness doctrine.[18] But some contradictions exist in the "Real Estate Section", On the one hand, it stresses the importance of registration-- juristic act of real right cannot take effect without registration.[19] On the other hand, natural resources owned by the state can be unregistered. This contradiction is reflected in article 9. It says, "The establishment,

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real estate registration, a very low and temporary regulation. Promulgated by the state council on November 24, 2014 and effective on March 1, 2015.
According to China's legislation habit, a lot of reforms at first are provisional regulations in the form of administrative law, and will rise to formal administrative regulations or the legal status of special legislation until the time is right running without problems.

[17] The French civil code does not use the word "real estate right", nor does it have the definition of real estate, and there is no concept of real estate. The Italian civil code is similar to this. Therefore, the author says that mostly the Chinese Property Law's choreography and legislative ideas come from Germany, only making some adjustments in line with China's national conditions. See WEN Shiyang(温世扬), LIAO Huanguo（廖焕国）, *Wuquan Fa Tonglun（物权法通论）[General Theory on Property Law*], People's Court Press, p.7-8(2005).

[18] The discussion on the different legal significance of the registration, as the real right publicity, will be carried out in detail below. So, the article does not discuss here.

[19] Art. 14: the establishment, alteration, transfer and elimination of the real right of real estate shall be valid after registered in accordance with the provisions of the law. Art. 15: a contract for the establishment, alteration, transfer and elimination of real property rights between the parties concerned shall come into force upon the establishment of the contract, unless otherwise provided for by law or otherwise stipulated in the contract. Failure to register the real right shall not affect the validity of the contract.

alteration, transfer and elimination of the real right of real estate shall be effective after being registered in accordance with the law. Without registration, it shall not be valid, unless otherwise provided by laws.[20] The ownership of natural resources legally owned by the state may not be registered." This provision makes Registration Effectiveness doctrine a principal rule, except in exceptional cases of law. However, as an exception, the provisions are so vague and the law has a wide meaning, which means that the laws lower than the <Civil Code of PRC> can exclude the application of the <Civil Code of PRC>. There are many other vague exceptions in this provision. And as an emphasis, the article also ends with a special emphasis on that the nature resources owned by the state may be unregistered. Its words are "may be unregistered" rather than "needn't to be registered", which means that register or not to register does not affect the state's ownership of the natural resources. In essence, it excludes the state -- owned natural resources and other circumstances as exceptions provided for by the law from the principle of Registration Effectiveness doctrine. The result of this practice is to make the scope of Registration Effectiveness doctrine extremely narrow, and will be narrower and narrower in the future, eventually become an empty principle. In addition, according to the general explanation, there is no state-ownership in China. State-ownership is only a general expression, because the legal term of it in China can be divided into whole-people-ownership and collective-ownership.[21] Therefore, the Real Estate Section of <Civil Code of PRC> also has the disadvantage of using life language as legal language. Finally, it is difficult to define the natural resources, and whether the most important land is a natural resource.

b. Too General Provisions

In addition, there are other problems existed in the Real Estate Section of <Civil Code of PRC>. Because none of them are as important as the principal problems mentioned above, so I will briefly review them in this paragraph. The first is that the real estate registration system stipulated in it is very illegible and rough. It only makes clear the legal effect of real estate registration, and there are no definite stipulations on system designs, procedure settings and the rights and responsibilities. It says that "the state practices a unified registration system for real estate. The scope of unified registration, registration organs and registration measures shall be prescribed by other laws and administrative regulations."[22] As a result, the real estate registration system stipulated by the "Real Estate Section" is difficult to implement in practice, because there is no specific detailed provisions. Therefore, the significance of Property Law for real estate registration is only at the level of declaring its legal effect, lacking the ability of practical operation. So, it is not a secret to say that the Real Estate Section of <Civil

[20] Means laws, including this law—the property law and other laws.
[21] Article 6 of <Constitution of PRC>: The basis of the socialist economic system of the People's Republic of China is socialist public ownership of the means of production, namely, ownership by the whole people and collective ownership by the working people.
[22] Art 10 of <Property Law of PRC>.

Code of PRC> in 2021 only started an incomplete beginning for the registration of real estate in China. More works need to be done in the future.

c. No Remedy Mechanism

Second, there are insufficient provisions on the scope of authority and responsibility of the registration institutions. What are the remedies available to the applicant when the registration institution fails to perform its obligations properly? The author holds the views that this is a very important part of the real estate registration system, which is very vital to the applicants too. Because according to legal philosophy, real estate registration should be a right of the real estate owner.[23] The procedural setting by the state shall not add any obstacles to the exercise of the rights of the right-holder; otherwise, it will cause substantive infringement on his or her rights. For real estate, the right-holder should enjoy his or her rights to real estate without the recognition of any other third party including the state. As long as it is a right, it exists from its beginning to the end. The activity of registration is only the way to publicize the real estate. The activity of registration does not add nor subtract any significance to the existence of rights. In other words, the right-holder has a real estate right, even if it is not registered; he or she still enjoys the right with no doubt. This is the relationship between the right-holders and the real estate right. The significance of registration is only the claim that the right-holder enjoys the real rights. This is also in line with the original intention of real estate registration -- the main way of real rights publicity. Therefore, the state should provide such convenience to citizens, and avoiding the expansion of administrative power and authority's rent-seeking activities which would cause inconvenience to the right holders in exercising rights and even infringement to their substantive rights.

d. Un-Unified Registration System

Finally, the Real Estate Section of <Civil Code of PRC> in 2021 has not changed China's past practice of distinguishing between housing registration and land registration. The development of real estate registration in China is that practice precedes the system. The earliest practice was about housing registration, which at that time was regarded as the main measure of China's Reform and Opening policy. In 1982, the State Administration of Urban Construction of China promulgated the interim regulations--<On the Management of Real Estate Rights in Cities (Towns)>, which started the registration of real estate ownership nationwide. Subsequently, the <Regulations on the Administration of Urban Private House> by the State Council in 1983, <the Law on the Administration of Urban Real Estate> in 1987,[24] <the Measures

[23] NI Shuyin, LI Xiandong, *Budongchan Dengji Xingzhi de Jieshi Lun Yanjiu (不动产登记性质的解释论研究) [Interpretation Theory Research on Real Estate Registration]*, Land and Resources Information, vol. 10, P.46-56 (2016).

[24] The name of this regulation was related with "real estate", while it is only circled on the urban house other than urban land which belongs to the state according to the constitution.

on the Registration and Administration of Urban House Ownership> by the Ministry of Construction in 1987, and <Property Law> in 2007 which marked the increasingly standardized and legalized house ownership registration system in China. However, the registration of land property rights is in another road. The pioneer registration of land property rights is <the Land Management Law> in 1986. And then is <the Property Law> in 2007. Article 2 and article 6 of <the Land Management Law> in 1986 stipulated the form of real rights of land. That is the ownership belongs to the whole people and the collective and cannot be transferred. So, the using right was emphasized mostly and specialized.[25] Article 9 and article 10 provide for the detailed registration mechanism of land estate rights.

> **Article 2**: The People's Republic of China exercises socialist public ownership of land, namely, ownership by the whole people and collective ownership by the working people. No unit or individual may occupy, buy, sell, lease or otherwise illegally transfer land. The state may requisition land owned by collectives according to law for the needs of public interests. The right to use state-owned land and collectively-owned land may be transferred according to law. Specific measures for the transfer of the right to the use of the land shall be formulated separately by the State Council. The state practices a system of compensated use of state-owned land according to law. Specific measures for the compensated use of state-owned land shall be formulated separately by the State Council.
>
> **Article 6**: Land in urban areas shall be owned by the whole people, that is, by the state. Land in rural areas and suburban areas shall be collectively owned, except as provided by law for the state. Homesteads and private plots of land and mountains shall belong to the collective.
>
> **Article 9**: Land collectively owned shall be registered by the people's government at the county level, certified and confirmed in ownership. State-owned land lawfully used by units under ownership by

[25] Because of the special land ownership in China, some scholars believe that "the state-owed" in the constitution cannot be understood placed in the "constitution" article 13 which is about private property rights. And it should be understood from the constitution article 12--public property. In this way, the state-owed ownership in <the Property Law> should be placed under the constitutional system of state-owed to understand. Some scholars also believe that ownership by the whole people and collective ownership are essentially empty ownership, so that it cannot be used in the fact. As reflected in the economic and monetary indicators, trillions of assets are frozen. Therefore, the right to use is of great importance, because the ownership has been conceptualized, and the right to use is the largest real estate right. Therefore, China's system has a special place for the right to use. The right of use also has a special status in China. Even that different from the general practice of regarding ownership as the core of real estate, the right to use in China is actually the core right of real estate. See LI ZhongXia(李忠夏), *Guojia Suoyou de Xianfa Jiedu – Yichang Meili de Wuhui (国家所有的宪法解读——一场美丽的误会) [The State-owed in Constitution of China—a perfect misunderstanding],* Tsinghua University Law Review, vol.5, P.34-45 (2015).

> the whole people, units under collective ownership and individuals shall be registered and catalogued by the local people's governments at or above the county level, certified and issued certificates, and the right to use shall be confirmed. The right of ownership or use of woodlands and grasslands and the right to use water surfaces and beaches shall be confirmed in accordance with the relevant provisions of the <Forest Law>, the <Grassland Law> and the <Fisheries Law> respectively.
>
> **Article 10**: If the ownership or right to use the land is changed in accordance with the law, it must go through the procedures of registering the change of ownership of the land and replacing the certificate.

The above law excerpts are all about land registration, no house registration. This situation of separate registration of real estate continued until 2010s. A reform started in 2010. A significant change was the reform of the establishment of institutions. In the past, land rights were registered by the Land and Resources Bureaus of governments at county level, while house registration was handled by the House Registration and Management Center which is the special registration authority at county level. In recent years, after successive reforms across China,[26] the above two institution are merged into one--the Real Estate Registration and Management Center. In fact, it is made by integrating the land registration authority originally belonging to the Land and Resources Bureaus into the House Registration and Management Center to make it a true real estate registration authority. The following part will focus on the reform of unified registration of real estate in China in recent years, which is the first step of real estate registration reform.

3. Reform Process and Achievements

a. Reform Schedule and Directions

The reform was first carried out in Guangdong, the bridgehead of Reform and Opening up policy in China. In April 2014, Guangdong provincial Department of Land and Resources established the leaders-group and office for unified real estate registration reform, which was the prelude of the unified real estate registration reform throughout the province. After the relevant policies of the Ministry of Land and Resources were issued, Guangdong began to formulate the implementation rules, and started experiments in Guangzhou and Shenzhen firstly, and then spread out in the whole province.[27] Since 2014, the unified real estate registration system would be fully

[26] Any reform measures in China are not usually rolled out across the country at the same time. Instead, it will be tested in a certain place, successfully followed by widespread adoption, and eventually nationwide. So, it's going to take about three to five years for a reform measure to spread across the country.

[27] Available at: https://baike.baidu.com/item/%E4%B8%8D%E5%8A%A8%E4%BA%A7%E7%99%BB%E8%AE%B0/2666287?fr=aladdin (15.6.2024).

implemented in about 3 years, and the unified information management platform of real estate registration can be run in about 4 years, finally forming a unified real estate registration system. To be specific, the basic system for unified registration would be established in 2014, the implementation transition of the unified registration system was promoted in 2015, and the unified registration system was fully implemented in 2016. By 2018, the information management platform for real estate registration would be put into operation, and the unified real estate registration system would be basically formed.[28]

b. Reform Practice and Achievements

In practice, since the <Interim Regulations on Real Estate Registration>[29] was issued on March 1, 2015, several cities including Qingdao, Xiamen, Guangzhou and Shenzhen have launched the unified real estate registration system before Beijing and issued the certificate of real estate right. Nanjing, Dalian, Shenyang and other cities also moved afterward. Beijing officially implemented the unified real estate registration system on November 9, 2015.[30] Citizens of 16 Districts and Counties in Beijing would apply for a new certificate of real estate ownership instead of the previous "House Certificate". In addition, the original certificates will continue to be valid following the principle of "non-retroactivity". The rights on the old certificate will not be changed and the certificates will not be changed compulsively. The reform would go forward gradually and new certificates take place with the old step by step in order that no burdens would be added to citizens and enterprises. Shanghai also began to implement the unified real estate registration system in the whole city on October 8, 2016.

It was reported that by 2017 the provincial real estate registration integration has been completed in China: city (state) level 187, accounting for 56%; the county (district) level, 1,125, accounting for 40% of the total. By the end of 2017, it was difficult for the institutions integration of real estate registration be completed in municipal and county level. However, it has been accomplished up to now. This marks the true unified real estate registration has been established in China.

The unified registration includes a unified organ, unified legal basis, a unified bookkeeping and a unified information platform--four unifications. It focuses on legal construction, and establishes a comprehensive framework at various levels including laws, regulations, policies and technical specifications. Efforts have been made to build an information-sharing platform to realize real-time exchange and sharing of various kinds of real estate registering and transaction. This will improve the administrative

[28] The Ministry of Land and Resources has set a unified registration schedule for land and houses, which would be fully implemented after 3 years. XINHUA NET (22 Apr. 2014).
[29] The <Interim Regulations on Real Estate Registration> came into force on March 1, 2015 . LAND TRANSFER INFORMATION NET (25 Oct. 2016).
[30] Beijing, as the center of Chinese politics, has been the most conservative and stable place in China at all reforms. So, every reform policy is last in Beijing. Beijing doesn't allow any political missteps.

efficiency of the governments, make it easier for the society to inquire information and provide effective services. Gradually the next step is to expand the application field of information platform to create conditions for the establishment and improvement of social credit investigation system and national natural resource asset management system in China.

Up to now, the unified real estate registration in China has been basically established nationwide. But it is still in its infancy and its beginnings. A more mature and complete approach requires constant experience from both of practice and theory. Because the current main regulation is only a temporary regulation--temporary and lower-ranked regulation, there is no state legislation at higher ranking.[31]

II. REGULATIONS IN EU, GERMANY, FRANCE

A. Coordination Condition Within EU

The above is an introduction to the historical development, current situation, reform and future trend of real estate registration in China. The author tries the best to give a comprehensive presentation to the readers. But in the following part, the author will discuss the German law and French law as EU member states respectively at a certain point, instead of comprehensively introducing the real estate registration system of these two legal systems. For German law, the author focuses on the special institution setting of its registration authority, while for French law, the author focuses on the legal significance of real estate registration. These two points are the most special of them, which are also different from China and other legal areas. Therefore, the author will not comment on the general introductions, limited to the length of the article.

There is no unified real estate registration system within EU. That is because firstly real estate registration is still a matter of national sovereignty. In addition, due to different legal traditions and different real estate registration habits formed in history, and the real estate registration itself is sensitive, EU member states usually keep real estate registration firmly in their own hands. So, the trend of legislation harmonization in real estate registration is not big. The EU only has real estate registration information sharing under certain conditions. On one hand, real estate has the strongest immovable characteristics, and the relevant laws about real estate are usually governed by the laws of the place where it is located-- principle of territorial jurisdiction. On the other hand, real estate registration information often belongs to the category of personal privacy,

[31] <Provisional Regulations on the Registration of Real Property> was formulated and issued by the State Council.
The State Council is the central administrative organ, not the legislature organ in China. The legislature organ is the National People's Congress. So, to be exact, it's not really a law, and it's just an administrative law and more importantly, a temporary law. Of course, China's legislative habit is to use provisional regulations first, such as the lower-ranked, temporary regulations. Then, it will be revised into regulations according to actual feedback, and finally, it will be upgraded from regulations to national laws.

and the registration authorities will not show it to a third party unless under strict legal procedures. So even information sharing, it is at a very low level. At last, the unification in real estate registration is less important than other more important aspects, and is less relevant to the goals and objects established by the EU Treaties. Article 3 of <EU Treaty> is about aim and goal of establishing the Europe Union. They are to promote peace, its values and the well-being of its people. The Union mainly functioned to "offer its citizens an area of freedom, security and justice without frontiers". In addition, an internal market for the sustainable development is pursued too. So, a harmonized real estate registration does not relate much with the objectives and goals of EU. Therefore, the author will focus on the MS of EU, Germany and France, according to different legal traditions.

B. Institution Setting in Germany

The real estate registration in Germany has developed much early and mature, and has its own characteristics, some of which are worthy of China's learning and reference. The author holds the views that the most special part lies in the particularity of the institution setting mechanism. Generally speaking, real estate registration institutions setting have three modes: administrative organs, courts and mixed modes.[32] It is quite common to see the model of administrative organs. For example, China's Real Estate Registration Bureau, as an administrative organ, is bound by administrative law. There are also Japan, the United Kingdom, Russia, Australia and the United States, as well as France, as described below.[33] Only Germany, Austria, the Czech Republic and South Korea take courts as register organs.[34] They all come from the experience of German law.[35] Therefore, the German practice of using the court as registration organ is quite special and worthy of researching.

1. Judiciary Registry

Although the German real estate registration agency is called the Land Registration Authority (Gundbuchaemter), it is in the charge of the local court

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[32] CHENG Xiao(程啸), *Budongchan Dengji Fa Yanjiu(不动产登记法研究)[Real Estate Law Reaearch]*, Law Press of China, P.107 (2011).

[33] *Id*. P.108.

[34] The South Korea was colonized by Japan from 1909 to 1945. After that, the South Korea completely studied the West and introduced western laws. Its real estate registration is especially famous for German templates. South Korea's civil law is the most typical system which combined French civil law, German civil law, Swiss civil law, etc. And its case law tradition is from UK and US. South Korea's legal transplant is based on the legal traditions of various countries and finally made. Examples of simultaneous transplantation of several civil law systems, such as South Korea, are rare in the world. Its transplantation of western law is not to strengthen the internal theories of the self, but to meet the needs of the regime or the needs of the dictatorship. See ZHENG Xianzhe(郑现喆), *Xifang Fa zai Zhong Han Liangguo de Zhuanyi he Zhuanxing ji Fazhan Yanjiu(西方法在中韩两国的移植和转型及发展研究)[Analyze on the Transplant of West Laws on China and South Korea]* (15 Aug 2010) (unpublished Ph.D dissertation, Politic Science and Law of East of China University) (on file with Fayuan Library, CUPL).

[35] *Id.* P.109.

(Amtsgerichte (AG)) in accordance with the first sentence of Article 1, Paragraph 1, of the <German Land Registration Regulations>. So, the district court (Amtsgerichte (AG)) is the real estate registration organs. It is responsible for the production of land registers and the administration of land within local region. [36] This can also be found in the German Court Organization Laws (Das Gerichtsverfassungsgesetz). German courts have four levels: the Local Court (Amtsgerichte (AG)), State Court (Landgericht (LG)), State High Court (Oberlandesgericht (OLG)) and Federal Court (Bundesgerichtshof (BGH)). According to article 13 of the Court Organizational Law (Das Gerichtsverfassungsgesetz), the affairs of a local court (Amtsgerichte (AG)) consist of civil cases, domestic matters, non-litigation matters and criminal matters—four parts. At the same time, Article 23a, Paragraph 2, Subparagraph 8 of the Law (Das Gerichtsverfassungsgesetz) stipulates that real estate registration matters are non-litigation events. In terms of hierarchical jurisdiction, land registration belongs to the local courts (Amtsgerichte (AG)) and its jurisdiction is exclusive. From the perspective of regional jurisdiction, local courts (Amtsgerichte (AG)) have regional jurisdiction over all lands within their management range. Of course, the Land Registration Regulation clearly stipulates in Article 1, Paragraph 1, Subparagraph 2: "for the sake of clarity, the area of land registration is in principle the same as the area of town."[37]

2. Theory Basis

The theoretical basis of real estate registration by judicial organs rather than administrative organs is to prevent the infringement of private rights by registration organs. In real estate registration, once the registration authority makes an incorrect decision, it is very likely to infringe the rights of the right holders or third party. Therefore, the whole German real estate registration process is set up around how to prevent the registration authorities from making wrong decisions. It is only when professional, neutral, and vetting bodies are responsible for real estate registration that the possible mistakes can be minimized. [38] Clearly, such institutions are nothing but courts. So, the land registration officers are judges whose official activities are judicial rather than administrative. [39]

At the same time this also greatly facilitates the legal relief of the parties. The State Court (Landgericht (LG)) is the appellate court of the Local Court (Amtsgerichte (AG)) under Article 72 of the Land Registration Regulation. Those qualified to make a decision include three full - time judges in the civilian court of the State Courts

[36] Land registration is the main part of real estate registration in Germany, but it does not mean that it is only about land in Germany. On the contrary, other forms of real estate are regarded as rights with land, such as land rights, residential ownership and building ownership.

[37] BAUR, Stürner, Sachenrecht ｜,Law Press 2004, p.278-279.

[38] RECHBERGER & BITTNER, Grundbuchsrecht, S. 125.

[39] More recently, registration has been undertaken by the Rechtspfleger. Rechtspfleger are civil servants of the high judicial institutions in Germany, who share the same professional independence as judges and are required to submit their decisions to judges on limited matters. This role is similar to that of a judicial assistant in China.

(Landgericht (LG)). When a party is dissatisfied with the registration act made by a judge, the legal remedy is to appeal under Article 81, Paragraph 1, of the Land Registration Regulation. The object of the appeal is the decision of the Land Registry (Gundbuchaemter), in particular its refusal to register the application. The decision of the State Court (Landgericht (LG)) may also be appealed to the State High Court (Oberlandesgericht (OLG)) according to the Article 78 of Land Registration Regulation. The reappeal is only de jure examination. In other words, the jurisdiction of the reappeal court (Oberlandesgericht (OLG)) is only to examine whether the judgment of appeal has legal error and whether there is any violation of law provisions.[40] New facts may not be considered. In order, of course, to prevent the State High Courts (Oberlandesgericht (OLG)) from making different decisions on land registration matters, the State High Court (Oberlandesgericht (OLG)) shall refer the reappeal case to the Federal Court (Bundesgerichtshof (BGH)) in accordance with the conditions described in Article 79, Paragraph 2 of the Land Registration Regulation. (It's the idea of maintaining the unity of the law. See Article 28 of the <the Law of Non-Litigation Matters Jurisdiction>, and the second sentence of Paragraph 1 of Article 546 of the <Civil Procedure Law.) [41]

C. Registration Antagonism in France

The above is the introduction and appraisal of the special institution setting of the German real estate registration authority, and its reference significance for the future development of China's real estate registration, which will be discussed next. Here is a discuss focusing on the legal effect of registration of real estate in France.

As mentioned above, the author intends to highlight the history and shortcomings of China's real estate registration and present the reform direction to the readers as much as possible. This is because China's real estate registration system is undeveloped yet, it is difficult to extract effective theoretical points from it. The system display is OK but the theory analysis is insufficient. On the contrary, in EU especially Germany and France, both have a sophisticated civil law system and mature real estate registration system, so it is possible to explore their theoretical foundations. However, in the face of complex real estate registration system in various aspects, it is impossible for the author to make a comprehensive introduction and review. So, it is better to choose one point that is particularly special and worthy of learning by China's real estate registration system. For Germany, the author concentrated on its neutral judiciary as the registration authority. For France, the author pays no attention to the system design

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[40] WANG Zhicheng(王志成),SNOW, Dennis, KRUPP, Hans Jurgen, *Deguo Budongchan Dengji Zhidu Guanli Fazhan Xianzhuang(2)(德国不动产登记制度管理发展现状(二))[German Real Estate Registration System and Administration Development Status Quo(2)],* Resources and Habitation Environment Journal, P.26-29 (2016).

[41] WOLF, Baur, *Non-litigation Matters Jurisdiction*，vol.Ⅰ，§31；WOLF, Baur, *The Basic Concept of the Law on the Jurisdiction of Non-litigation Matters*，Chapter 5 (2nd ed, 1980).

any more, but to the particularity of the legal effect of registration. Next the author makes an introduction to the various legal effects of real estate registration.

1. Three Legislative Styles of Registration

In recent and modern countries, there are roughly three legislative styles about the real property registration modes: Registration Effectiveness, Registration Antagonism and Torrens--mixed registration system.[42] The Registration Effectiveness, also known as the Substantive registration Doctrine or the right registration system, refers to the legislative system in which the real estate right cannot be effective unless it is registered, in the process of establishment, transfer, change and repeal of real estate rights.

The author mentioned above Germany uses Registration Effectiveness doctrine, which was initiated by Germany and adopted by Switzerland, Austria, Hungary and Taiwan of China.[43] As the name implies, registration is one of the effective elements of real right activities, and the Registration Effectiveness has the following legal features: (1) registration is the effective element of real right activities; (2) registration is subject to substantive examination; (3) registration has credibility; (4) compulsory registration is needed; (5) the register centers on real estate; (6) registration is mainly static property rights. Registration Antagonism, also known as Deeds Registration system or Formalist Registration, refers to real rights activities shall take effect immediately after a contract is concluded by the party concerned, but cannot against a third party unless registered. Here, registration is no longer a must for effectiveness, but only for confrontation to third parties. The Registration Antagonism system has the following legal features: (1) registration as the counter element of real right activities; (2) registration shall not be compulsory; (3) formal examination in registration; (4) registration has no credibility; (5) the register adopts the principle of right holders-centered; (6) registration of both static and dynamic real estate rights. It was pioneered by France and adopted by most countries in the world, such as the United States and Italy. It respects the free will of the parties, who can choose to register or not to register according to different transaction types, which can promote the transaction efficiency. It can be seen that the above two different registration forms are completely opposite with each other. They are completely opposite in every aspect and are typical two approaches. It is also adopted by most countries in the world.

However, there is also another registration form, which has integrated some of their characteristics respectively into a mixed registration mode. That is Torrens. Torrens registration system, also known as the Right Deliver Doctrine Registration or

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[42] WANG Xingmin(王兴敏), *Budongchan Dengji Gailun(不动产登记概论) [Introduction to real estate registration]*, P.113-115 (2017).

[43] CHEN Li(陈丽), *Deguo Budongchan Dengji Zhidu ji Chengyin Tanjiu(德国不动产登记制度及成因探究)[Analyze on German Real Estate Registration System and Its Back Reason],* Sheke Zongheng(Xinlilun Ban) Social Sciences Review(New Theory Version), vol. 7, P.34 (2009).

Mixed registration, refers to the registration system that, after substantial examination, the right certificate issued by the registration authority can confirm the real rights. The Torrens is the specialized word to stand for mixed registration system, which was invented by Robert Torrens--a member of the colony's House of Assembly in Australia, to solve some land problems which appeared in Australia, the colony of UK at that time. Those problems cannot be settled by the common law registration mode used in UK and its colonies.[44] So he combined both of the Deeds Registration system and Registration Effectiveness which were popular in Europe. So, the Torrens registration system has the following legal features: (1) registration does not implement comprehensive coercion; (2) registration is subject to substantive examination; (3) registration has credibility; (4) delivery of the certificate of rights; (5) the right burden on the land needs to be registered; (6) setting up a compensation fund. So, it is such a system of real rights registration in which real rights are transferred by means of a certificate issued by the government. It was first created in Australia as a British colony, and has been used only in the relevant countries of the British colonies or in English-speaking countries. It is now adopted by all the states of Australia, New Zealand, England, Scotland, Ireland, most of the provinces of Canada, Singapore, Malaysia, and 12 states (or 10, some scholars say) of the United States, including Colorado and Hawaii.[45]

2. Registration Antagonism in France

The above three real estate registration models have their own characteristics and advantages; of course, they are relative and limited to the Country's history and respective situations. They are also prevalent in different forms throughout the world. Such as Germany's Registration Effectiveness, and France's Registration Antagonism (Deeds Registration system) is particularly special and completely different from Germany's tradition. It derived from the unique French civil law tradition and logic and has been used by French legal practices for hundreds of years. The history of the French real estate registration depends on the history of mortgage. It can be said that, as a guarantee of non-transferable possession, in order to ensure the realization of its

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[44] A boom in land speculation and a haphazard grant system resulted in the loss of over 75% of the 40,000 land grants issued in the colony (now state) of South Australia in the early 1800s. To resolve the deficiencies of the common law and deeds registration system, Torrens proposed a new title system in 1858, and it was quickly adopted. The Torrens title system was based on a central registry of all the land in the jurisdiction of South Australia, embodied in the Real Property Act 1886 (SA). All transfers of land are recorded in the register. Most importantly, the owner of the land is established by virtue of his name being recorded in the government's register. The Torrens title also records easements and the creation and discharge of mortgages. The historical origins of the Torrens title are a matter of considerable controversy. See Hoffmann Karl Bernhard Edler von, Deutsches Kolonialrecht, G.J. Göschen, Leipzig 1907, page 121.

[45] LIU Yan(刘艳), *Yingmei Budongchan Dengji Falv Zhidu Yanjiu (英美不动产登记法律制度研究) [Study on Anglo-American Legal System of Real Estate Registration]* (8 Apr. 2014) (unpulished Ph. D dissertation, Shandong University) (on file with Fayuan Library, CUPL).

functions, the mortgage rights instinctively call for publicity so that it can confront the third party. [46]

Levy has pointed out that in France it was the mortgage that led to the establishment of publicity on real estate rights' effectiveness and changes. The secret trade, as a French tradition, was very popular in the 13th to 18th centuries in France.[47] That made trading very unsafe. So, the French Republic enacted the law on October 9, 1795, which established the publicity system for all mortgage rights, so as to protect the establishment of the mortgage loan legal relationship. During this period, every administrative region in France established a mortgage registration authority, which was subordinate to the Financial Management Authority. According to the law in this period, the establishment and transfer of real rights without the form of publicity would lead to that it could not confront the third party, but it would not affect the establishment of real rights themselves. In other words, publicity or not doesn't affect the effectiveness of real rights activities. This is a typical representation of the Registration Antagonism. This kind of registration in France was solidified by the middle of the nineteenth century, and it is still alive today. The Registration Antagonism has been viewed as an internal part of French Civil Law system which spreads many countries throughout of the world. Therefore, France, as a continental European country, and part of civil law tradition system, following by the tradition of Roman law, the legal effect of its real estate registration is quite different from that of Germany. For the above differences between France and Germany and their inspirations to China, the author will discuss them below.

D. Comparative Analyze and Inspirations to China

The author has explained the history and present situations of real estate registration in China, the institution setting of real estate registration in Germany and the legal effect of real estate registration in France. The differences between Germany and France are rather obvious. Namely, one is registration and the other is publicity. The difference of words using shows the great difference of legal meaning of them.[48] In fact, France and Germany seem to be two different approaches, but the substance is the same. The legal effect of Germany's registration system is consistent with its special institutional setting, that is, real estate registration should be under the control of judicial jurisdiction, because judicial jurisdiction can ensure the legitimacy of the

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[46] In France, the close relationship between publicity of immovable property and the mortgage system can even be proved by the name of the relevant authority. The administrative authority of immovable property publicity in France keeps the name of Conservation des Hypotenuse, which is totally different from the Land Registration Authority in Germany.

[47] The reasons behind this social phenomenon are not discussed here limited by the length. See Ph. Levy, *An Overview of the History of Collateral*, Rev. hist. du droit, cité par Malaurie et Aynès P.257-266 (1987).

[48] XV Kecheng(徐克晟), *Liangda Faxi Budongchan Dengji Zhidu Bijiao Yanjiu (两大法系不动产登记制度比较研究) [Comparative Analyze on the Real Estate Registration in two Legal Traditions]* (25 Oct. 2015) (unpublished Master thesis, Soochow University) (on file with Fayuan Library CUPL).

registration behaviors, so it can guarantee the authenticity and accuracy of registration. On the contrary, in France, the legal effect of the publicity is also in line with its institutional setting. As an administrative organ, the status and function of the publicity authority is only slightly different from the financial department, so it can only examine the legitimacy of legal acts in the form instead of its actual effect.

So, Germany uses Registration Effectiveness doctrine and France uses Registration Antagonism doctrine, each has different register authority institutions and register legal effect. They also represent two different registration systems. For China at present, the legal effect of real estate registration is the same as that of Germany--Registration Effectiveness. In other words, real estate registration is one of the effect elements of real rights change. Only the registered real right change is effective among the parties, while the non-registered real right change has no legal effect at all. [49] But at the same time, China's registry institution setting has not adopted a neutral court like Germany's mode, and adopted the French model—administration organ as registry institution. It can be seen that the legal effect of China's real estate registration and its institutional setting are contradictory. Such a setup is easy to violate the rights of the right holders and is not conducive to the guarantee of transaction security and the promotion of transaction efficiency.

Therefore, the direction of China's real estate registration reform in the future should be the coinciding institution setting and the legal effect. If adopt the Registration Effectiveness doctrine, the court and other neutral institutions should be used as registration organs, while if adopt the Registration Antagonism doctrine, administrative organs can be used as registration organs. But in China's situation, both reforms are difficult to achieve. The first reform is institutional reform. The reason for it is hard to achieve is that under the first kind of reform pattern, the legal effect of real property registration—Registration Effectiveness remains unchanged, only the registration authority needs to be changed from administrative system into the court system. And China's court system business is very busy now, no history and habit of bearing non-litigation affairs. So, it is very hard to increase its non-litigation business suddenly.

Therefore, the author thinks that the second reform pattern is relatively easy to be achieved in theory. The existing registration organ system remains unchanged, and the legal effect of registration is changed from Registration Effectiveness doctrine to Registration Antagonism doctrine. That is because although the Chinese civil law is mostly inherited from the German civil law tradition, there is no such deep historical restraint and traditional concerns as the original Germany civil law tradition, so China can adjust its theory to meet the needs of reality at any time. The Registration

[49] According to the tradition of German civil law, the idea of dichotomy of real activity and contract activity, so the contract is still established despite no legal effect of property rights change. China's civil law system comes from Germany and same as it.

Effectiveness doctrine has not been established completely,[50] the resistance of reforming it into Registration Antagonism is much little. However, as the author mentioned before, China just established the real estate registration system nationwide in 2007. At that time, the reform emphasizes on the registration tradition of real estate registration dichotomy between house and land, which was not shaken by the <Property Law> in 2007 and shall be the reform direction in the future. So, the contradiction between the registration institution and the legal effect of registration discussed in this article was not the major issue for Chinese legislators at that time in 2007. However, with the establishment of a unified real estate registration system nationwide in 2017, the above contradiction has become the major constraint of China's real estate registration system and the direction of the next step of reform.

CONCLUSION

China's real estate registration has a long history, but in the past, it was generated around levy and the emperor's control of the nation. It has not been effectively implemented in the whole country due to the vast territory in China and lazy administrative system. But modern real estate registration started rather late. It was not until 2007 that the <Property Law> made real estate registration legal status nationwide for the first time. But at that time the real estate was still respectively two registration patterns—house and land. More work needs to be done in the future. So, the unified reform began in 2011, and unified registration was basically achieved nationwide in 2017.

However, further reform is still needed for the legal effect of real estate registration and its institution settings. The author investigates the tradition of real estate registration in continental European countries such as Germany and France. The legal effect of real estate registration and its institutional setting are unified, which has its profound legal basis. Germany adopts Registration Effectiveness and therefore takes the court as the registration authority, while France adopts Registration Antagonist taking the administrative authority as the registration authority. This can be learned for China's next reform. China can change the relatively loose Registration Effectiveness doctrine into Registration Antagonist doctrine to cooperate with the current practice of administrative organs as registration institutions, which is closer to the French model. In this way, the security of the transaction can be guaranteed and the rights of the right holders can be respected.

[50] Even though Registration Effectiveness is the main doctrine adopted in China, there does exist Registration Antagonism in the <Property Law> in 2007. It is used on some big movable property and usufructuary rights. See Article 24, 129, 158, 188, 189 of <Property Law> 2007.

THE ETHICS OF INNOVATION: PATENT LAW AND DESIGN DILEMMAS

Jingfan Xiao*

Abstract: This article explores the ethical dilemmas at the intersection of patent law and design innovation, using the Apple v. Samsung case and Shenzhen-based Transsion Holdings as focal points, analyzed through the lens of human-centered design. It also highlights the benefits of an open-source approach by drawing on SpaceX as an illustrative example. Apple v. Samsung highlights challenges in enforcing design patents, balancing intellectual property rights with market competition and innovation. Transsion's evolution from imitation to addressing camera bias for darker skin tones demonstrates how inclusive design can foster equity and reshape markets. The analysis calls for flexible intellectual property frameworks that protect creators while promoting user-centered innovation, addressing systemic inequities, and aligning technology with human rights and societal progress.

Keywords: Human-Centered Design; Trade Dress; Patent Law; Intellectual Property Law; Business Ethics

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INTRODUCTION

Design is both an aesthetic and functional process, requiring legal compliance while fostering innovation. The interplay between design and law is a critical area of study in contemporary society. Integrating design thinking into legal processes is hindered by cultural differences: law emphasizes formality and precedent, while design values flexibility and experimentation. Bridging these gaps through interdisciplinary collaboration can align intellectual property laws with human-centered design,[1] eventually contribute to societal progression and well-being. This intersection is particularly significant in the realm of intellectual property law, where design patents serve to protect innovation while simultaneously presenting complex challenges regarding their broader impact on technological advancement.

The legal disputes between Apple and Samsung over design patents focused on how intellectual property law would define range of originality and infringement, therefore how should damage reward amount be. The prolonged patent litigation highlights differences in their business models and legal strategies. Apple, focused on software and design innovation, initiated lawsuits over alleged infringement of its design and utility patents. Samsung, emphasizing hardware manufacturing, countersued with its own patent claims. The cases, spanning multiple jurisdictions, underline disparities in legal systems and patent enforcement. While Apple won significant damages, Samsung gained brand recognition and enhanced its intellectual property practices, ultimately benefiting both companies in the global market.[2] While establishing the commercial value between the two parties is important, the essence of patent damages lies in the principle: "The damages you award should compensate the patent holder, not punish the infringer",[3] exemplify the intricate balance between safeguarding intellectual property and fostering innovation. Fear, as a psychological process, can constrain the motivations of acting, eventually preventing the progression of innovation, as companies may be afraid of the high damage infringement reward so never borrowing ideas from industry pioneers. Therefore, legal frameworks should provide an environment that is inclusive enough to encompass diverse opinions and behaviors with flexibility.

Additionally, the case of Shenzhen's Transsion Holdings underscores the complex relationship between legal frameworks and human rights. Transsion's initial strategy involved replicating existing technologies; however, the company gained significant popularity in African markets by addressing specific user needs that were previously overlooked, such as optimizing camera technology for individuals with darker skin tones. This scenario raises important ethical considerations regarding the enforcement of intellectual property rights and the promotion of inclusive innovation.

This article examines the intersection of design and law through the lens of human-centered design's principles, focusing on Apple v. Samsung and the trajectory of Transsion Holdings. The article aims to explore the ethical and practical

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[1] Marcelo Corrales et al., *The Relationship between Legal and Design Cultures: Tension and Resolution*, SSRN (2021).

[2] The Apple Patent Fight Between Apple and Samsung: Interviews with Korean and Korean-American Attorneys, UC IRVINE SCH. LAW, https://www.law.uci.edu/centers/korea-law-center/news/klc-samsung-apple.pdf.

[3] Paul Grewal et al., *MODEL PATENT JURY INSTRUCTIONS*, (2017), https://www.cand.uscourts.gov/filelibrary/5/NDCAL_Model_Pat_Jury_Inst_8-17_updated_12-18.pdf.

implications of current intellectual property frameworks and their influence on innovation. The goal is to contribute to the ongoing discourse on how legal systems can effectively balance the protection of creators' rights with the necessity of fostering a competitive but inclusive innovative environment.

I. DESIGN PERSPECTIVE

The Apple v. Samsung case of 2012 warrants detailed discussion and analysis due to the significant legal principles it established, which have had a lasting impact on the design industry. The case raised critical questions about the scope and limitations of design patents, particularly regarding how these patents can restrict the protection of appearance designs. It also prompted further exploration of the boundaries of legal protection for design elements, such as the definition of "ornamental" versus "functional" features, the potential for design patent infringement based on overall visual impressions, and the extent to which trade dress law can extend beyond traditional product designs. These legal developments have shaped how designers and companies approach the protection of their creative works and have influenced patent law interpretations across various industries.

In the human-centered design realm, a nuanced perspective on the tension between originality and borrowing was developed. Design courses often follow a structured process: presenting original ideas, creating prototypes, refining designs, and ultimately showcasing polished design work to the class. Each stage involves collaborative sharing, which has both advantages and drawbacks. While designers gain exposure to diverse perspectives and creative approaches, they may also be influenced by others' ideas, sometimes at the expense of their own original vision.

Many educational institutions do not oppose the mutual borrowing of ideas as a way to foster students' growth, provided a new perspective to approach the boundaries of originality. The contrast between the stringent enforcement of educational institutions' honor code in academic settings—where plagiarism and improper citations are strictly prohibited—and the more lenient approach to originality in design raised questions of the lack of institutional or professorial mechanisms to address such issues.

However, from a broader context, the innovation and originality are not opposed but mutually reinforcing. A crucial step in initiating a successful design is creating a "mood board," a visual tool that conveys the project's overall tone, style, and direction. It acts as a curated collage of images, colors, textures, typography, and other design elements, collectively inspiring and defining the desired aesthetic. Drawing inspiration from others' work often serves as a precursor to originality, providing a foundation for novel ideas to emerge. Claude Lévi-Strauss, a pioneer of structuralism, captured this dynamic in *The Savage Mind* (*La Pensée Sauvage*), arguing that creativity is not about creating from nothing but recombining existing elements. He introduced the concept of "bricolage," likening innovators to tinkerers who use available materials to craft something new. This process of reinterpreting and reorganizing pre-existing cultural components, evident in both primitive societies and modern contexts, highlights that all innovation builds upon what already exists, giving

it new meanings rather than inventing entirely novel ideas.[4]

Legal provisions typically focus more on regulating commercial behavior than solely protecting originality. Design patent laws, for instance, are designed to foster commercial monopolies and enhance business competitiveness. However, design innovation plays a crucial role in advancing commercial activities as attractive and functional designs can drive higher sales and consumer interest. On the other hand, excessive protection of business interests may hinder societal progress and technological advancement.

From a statistical standpoint, a more inclusive environment with fewer patent restrictions would encourage designers across different brands to learn from one another, leading to a broader range of design possibilities. This collaborative atmosphere ultimately allows for designs to better meet niche consumer needs. Non-mandatory enforcement mechanisms, like those in patent law, strike a delicate balance by fostering innovation while also supporting societal progress.

II. FACTS

The Apple v. Samsung case in 2012, a prominent legal dispute over design patent infringement, centers on allegations that Samsung's smartphones unlawfully replicated key aesthetic and functional elements of Apple's devices, raising critical questions about the scope of design patent protection and its role in promoting or hindering innovation within the highly competitive technology industry. Apple accused Samsung of infringing on utility and design patents. The case hinged on several key aspects, including the scope and interpretation of design patents, the methodologies for calculating damages,[5] and the broader implications for innovation and competition in the smartphone industry.[6]

One of the pivotal issues in the litigation was the extent to which design patents protect specific elements of a product's visual and functional design. Apple argued that Samsung had copied distinctive features of its iPhone, such as its rectangular shape with rounded corners, the arrangement of icons on the home screen, and its user interface design.[7] These elements were central to Apple's claim that its products had a unique functional aesthetic and design patents that Samsung unlawfully mimicked to gain a competitive advantage in the smartphone market.[8] Samsung counter-claimed that Apple failed to license 3G patent, and stifled competition, limited consumers' choice.[9]

In 2012, a jury largely sided with Apple, awarding it $1.05 billion in damages,

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[4] JULIAN PITT-RIVERS & ERNEST GELLNER, (LA PENSEE SAUVAGE) CLAUDE LEVI-STRAUSS.
[5] Precedential Patent (and Trade Dress) Case From the Federal Circuit, SCHWABE (2015), https://www.schwabe.com/publication/precedential-patent-and-trade-dress-case-from-the-federal-circuit/ (last visited Jan 4, 2025).
[6] Tim Bajarin, *Why Apple And Samsung's Device Competition Is Great For Consumers*, FORBES (2021), https://www.forbes.com/sites/timbajarin/2021/08/12/why-apple-and-samsungs-device-competition-is-great-for-consumers/ (last visited Jan 7, 2025).
[7] Precedential Patent (and Trade Dress) Case From the Federal Circuit, *supra* note 6.
[8] *Id.*
[9] Charles Arthur & George Sandeman, *Apple v Samsung: What Are the Claims and Counter-Claims?*, THE GUARDIAN, Aug. 22, 2012, https://www.theguardian.com/technology/2012/aug/22/apple-samsung (last visited Jan 7, 2025).

indicating that Samsung had willfully infringed on Apple's design and utility patents.[10] This landmark decision, however, was not the conclusion of the legal battle but rather the starting point for a protracted series of legal maneuvers. The jury's substantial award was based on an interpretation of damages that included Samsung's total profits from the sale of infringing devices. This approach, while rooted in the statutory language of 35 U.S.C. § 289,[11] sparked significant debate over its fairness and practicality. Samsung's side argued that attributing the entirety of a product's profits to a single design element oversimplified the complexities of modern consumer electronics, where multiple components and features contribute to a device's overall value.[12] Apple's side, on the other hand, maintained that strong penalties were necessary to deter blatant design infringement and to protect the investments companies make in developing innovative and distinctive products.[13]

After the initial jury decision, both Apple and Samsung emphasized the importance of focusing on customer experience and the value of their products.[14] While they are fierce competitors in the industry and legal adversaries in court, both companies share a common goal of advancing their products and achieving technological superiority. Therefore, while the necessity of clearly defining the extent of intellectual property protection is important, the cases' impacts on future product development and design innovation cannot be ignored. What Apple wanted to protect is never only the business value and patents claim, but the unique total user experience (TUX) of the iPhone and its related IOS system, as the iPhone's commercial success is driven by its TUX rather than any single feature or function outlined in an individual patent. This perspective of viewing the iPhone as a collection of highly engaging features that together create an experience greater than the sum of its parts aligns closely with advanced UX design research.[15] Apple's focus on TUX in 2012 has proven impactful today, with its commitment to excellence in every detail forming the foundation of its success.[16] As of January 2025, Apple has a market cap of $3.703 Trillion USD, which makes Apple the world's most valuable company by market cap.[17] The value of the unique user experiences, is also the commercial value for Apple as a profitable business.

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[10] Nidhi Garg, *Apple v. Samsung: Design Protection and Consumers*, 3 PACE INTELLECT. PROP. SPORTS ENTERTAIN. LAW FORUM 115 (2013).
[11] *Id.*
[12] Paul Ackerman, Jeff Dodd & Daniel Shanley, *Samsung v. Apple – Supreme Court Limits Damages in Design Patent*, XV NATL. LAW REV. (2016), https://natlawreview.com/article/samsung-v-apple-supreme-court-limits-damages-design-patent-cases (last visited Jan 4, 2025).
[13] Shutts, *Samsung v. Apple - Calculating Design Patent Infringement Damages*, https://www.shutts.com/business-and-legal-insights/samsung-v-apple-calculating-design-patent-infringement-damages (last visited Jan 4, 2025).
[14] Samsung v. Apple - Calculating Design Patent Infringement Damages, SHUTTS, https://www.shutts.com/business-and-legal-insights/samsung-v-apple-calculating-design-patent-infringement-damages (last visited Jan 4, 2025).
[15] Charles Mauro, *Apple v. Samsung: Impact and Implications for Product Design, User Interface Design (UX), Software Development and the Future of High-Technology Consumer Products*, MAURO USABILITY SCIENCE (Nov. 27, 2012), https://www.maurousabilityscience.com/blog/apple-v-samsung-implications-for-product-design-user-interface-ux-design-software-development-and-the-future-of-high-technology-consumer-products/ (last visited Jan 7, 2025).
[16] Halil Aksu, *Apple's Culture of Design and User Experience: Crafting Excellence in Every Detail*, DIGITOPIA (2024), https://digitopia.co/blog/apples-culture/ (last visited Jan 7, 2025).
[17] Apple (AAPL) - Market capitalization, https://companiesmarketcap.com/apple/marketcap/ (last visited Jan 7, 2025).

The litigation ultimately reached the Supreme Court, which in 2016 vacated the $399 million damages award that had been upheld by the Federal Circuit. The Court unanimously held that damages for design patent infringement under § 289 should not automatically be based on the infringer's total profits from the sale of the product, but rather on the "article of manufacture" to which the design was applied.[18] This decision marked a significant shift in the legal landscape for design patents, leaving lower courts to grapple with the complex task of determining the appropriate methodology for identifying the relevant article of manufacture and calculating damages accordingly. The legal battles between the two tech giants spanned various countries and courts, reflecting the global scale of the dispute.[19] Apple won litigations in the United States while Despite Apple's initial victory, the U.S. Patent and Trademark Office later tentatively invalidated some of Apple's patents on key functionalities, casting doubt on the permanence of the jury's decision.[20] Furthermore, the complex nature of the patents involved and the rapid evolution of technology led to ongoing debates about the effectiveness and fairness of the patent system, especially in cases where the innovation is highly technical and fast-moving.

This high-profile dispute eventually led to a settlement between Apple and Samsung in 2018, with the terms undisclosed, signaling an end to a significant chapter in the saga of tech industry patent litigation. [21] One of the outcomes of such litigation was that companies, including Samsung, became more cautious in their design processes to avoid future legal challenges.

III. PRINCIPLE

Previous cases highlighted the significance in trade dresses' functionality, as it defines if the trade dress can bring commercial profits and therefore should be protected or not.[22] Through the lens of human-centered design, all products should prioritize meeting the users' needs and experiences.[23] However, this must be balanced against the financial realities and sustainability of businesses. The question arises: how can one equitably value users' needs and broader societal technological advancements without reducing them to mere monetary trade-offs? Strict enforcement of intellectual property protections may risk prioritizing business interests over user needs and therefore hurt the collaborative spirit of innovation. To foster both innovation and fairness, intellectual property frameworks must allow room for nuanced legal interpretation, enabling a balance between protecting business interests and advancing societal and user-focused technological growth. More importantly, a humane legal system with flexibility can better support human rights by addressing the complexities of diverse societal needs. In this context, Transsion Holdings can be a great example.

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[18] Samsung Electronics Co. v. Apple Inc., 580 U.S. ___ (2016), JUSTIA LAW (2016), https://supreme.justia.com/cases/federal/us/580/15-777/ (last visited Jan 7, 2025).
[19] Nina Zhang, *Lesson Learned: Samsung vs. Apple (2011) Patent Lawsuit Case Study*, FLATFEE (2023), https://flatfeecorp.com/articles/Samsung-vs-Apple-2011 (last visited Jan 7, 2025).
[20] Garg, *supra* note 11.
[21] *Id.*
[22] Precedential Patent (and Trade Dress) Case From the Federal Circuit, *supra* note 6.
[23] Introduction to human-centered design, DIGITAL.GOV (2023), https://digital.gov/guides/hcd/introduction/principles/ (last visited Feb 2, 2025).

IV. DISCUSSION

Huaqiang Electronics World, located in Huaqiangbei, Shenzhen, is often referred to as "China's Silicon Valley" and the "Silicon Valley of Hardware,"[24] reflecting its pivotal role in the global electronics and hardware ecosystem. It is renowned as one of the world's largest electronics markets, offering a vast array of electronic components, gadgets, and hardware. This bustling marketplace is a hub for technology enthusiasts, entrepreneurs, and manufacturers seeking to source electronics or find inspiration for new projects. Huaqiangbei is also famous for its *shanzhai* (山寨) culture, where components of popular electronic products and brands are open-sourced, produced and sold. Printed circuit boards, widely known as public board (公版),[25] emerged as the leading type of open-source product. Similar to the foundational principles of the maker movement, these boards function as adaptable computational platforms, allowing for virtually endless customization. In addition to supplying key components, numerous smaller *shanzhai* factories expanded their role by providing Original Equipment Manufacturing (OEM) and Original Design Manufacturing (ODM) services, broadening their impact within the ecosystem.[26] OEM refers to companies that manufacture products or components designed by another company. The OEM produces these items under the buyer's brand, often to the buyer's specifications. ODM involves companies that design and manufacture products which are then sold under another company's brand. In this case, the manufacturer provides both the design and production, offering a ready-made solution for branding. Huaqiangbei embraced the ODM model, enabling factories to leverage the cost efficiencies of large-scale production while catering to numerous smaller clients. These products, unbound by exclusive licensing to any single company, came to be referred to as "white-label" goods.[27] While some argue that Huaqiangbei undermines the integrity of innovation, it also offers valuable opportunities for start-ups, providing society with an alternative perspective on technological progress and accessibility.

Transsion Holdings, a Shenzhen-based company, is a prime example of a business that emerged from Huaqiangbei's copycat culture. Initially following the market's trend of imitating existing products, Transsion began its journey by producing low-cost mobile phones that resembled those of established brands. However, instead of merely replicating designs, the company identified a critical gap in the market: traditional phone cameras often failed to capture individuals with darker skin tones accurately, as their biased algorithms treated darker skin as part of the background. Recognizing this overlooked need, Transsion developed phone cameras optimized to address this bias, ultimately winning over a substantial share of the African market. Dubbed the "King of Africa" and the largest smartphone supplier to the African market by the end of 2017, Transsion captured 48% of the African smartphone market by shipping 8.6 million devices in the third quarter of 2023. This

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[24] Matt Reynolds, *Inside Shenzhen: The Silicon Valley of Hardware*, WIRED (2016), https://www.wired.com/story/shenzhen-silicon-valley-of-hardware-wired-documentary/ (last visited Jan 5, 2025).
[25] What is a public board PCB_Baidu knows, BAIDU (Apr. 20, 2023), https://zhidao.baidu.com/question/559661734719371484.html?utm_source\ (last visited Jan 7, 2025).
[26] Taylor Coplen, *DECENTRALIZED HARDWARE PRODUCTION: MAKERSPACES, SHANZHAI, AND THE FUTURE OF SHENZHEN'S TECHNOLOGY INDUSTRIES*, UNIV. HONG KONG (2019).
[27] *Id.*

performance far surpassed second-place Samsung, which held 26% of the market.[28]

This trajectory underscores a broader narrative about innovation, intellectual property, and human rights. While Transsion's beginnings in Huaqiangbei reflect the ethical ambiguities of intellectual property infringement, the company's eventual success demonstrates how addressing genuine user needs can foster inclusivity and promote human dignity. By creating technology that respects and represents all users, Transsion's approach highlights the importance of designing for equity. A more humane legal framework that balances intellectual property enforcement with the promotion of inclusive innovation becomes critical. Such a system can empower businesses to move beyond imitation and address pressing societal issues, ultimately aligning technology with the broader principles of human rights and fairness.

Besides Transsion, the humane wellness spirit and the relationship between design patents and innovation is still worthy of attention in recent years. Elon Musk leads the emerging trend of balancing intellectual property and innovation. His move to open-source Tesla's electric vehicles patents aimed to boost the electric vehicle industry's growth and innovation. This strategy is expected to foster a broader adoption of electric vehicles, reducing global carbon emissions and leading to a more sustainable future.

More recently, in November 2024, the live streaming video depicts a rocket as big as a skyscraper roaring into space, among the deafening cheers, Elon Musk's SpaceX Starship successfully completed its sixth flight test.[29] While people were immersed in the romance of another milestone of a great leap of humanity's technological level, I was reminded how SpaceX benefited from the Soviet Union's design, which was apparently not protected by patents, and proved to be an example showing how open-source can lead great societal and technological progression. The SpaceX's Starship and the Soviet Union's N1 rocket share a notable approach in terms of design and development philosophy, particularly in the use of a large number of smaller engines and an iterative design and testing process. The N1 rocket, developed by the Soviet Union, utilized a multitude of engines in its first stage, a design choice echoed by SpaceX's Starship with its Super Heavy booster.[30] This approach, aside from operational and cost benefits, allows for increased reliability through redundancy and easier manufacturing and testing processes. SpaceX's Starship incorporates innovative design choices such as construction primarily from stainless steel and the utilization of Raptor engines that burn liquid methane and liquid oxygen. Its design supports SpaceX's ambition for Mars colonization and positions Starship as a versatile vehicle for a wide range of space missions.[31]

The fundamental purpose of intellectual property law is to incentivize innovation, ensuring that creative and technological advancements continue to enrich

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[28] Admin Doug, *Transsion Climbs Global Smartphone Leader Board with Its Move out of Africa - Bamboo Works - China Stock Insights for Global Investors*, BAMBOO WORKS (Jan. 26, 2024), https://thebambooworks.com/transsion-climbs-global-smartphone-leader-board-with-its-move-out-of-africa/ (last visited Jan 5, 2025).

[29] STARSHIP'S SIXTH FLIGHT TEST, (2024), https://x.com/i/broadcasts/1RDGlydZAeOJL (last visited Jan 5, 2025).

[30] Trevor Sesnic, *Starship vs. N1*, EVERYDAY ASTRONAUT (2023), https://everydayastronaut.com/starship-vs-n1/ (last visited Jan 5, 2025).

[31] *Id.*

society. However, when legal frameworks prioritize restrictive exclusivity over dynamic innovation, they risk deviating from this foundational objective. Intellectual property must function as a mechanism for stimulating knowledge diffusion and technological progress, not as an instrument for reinforcing economic monopolies and erecting barriers to future development.

The SpaceX case, where publicly available Soviet-era rocketry designs facilitated breakthrough advancements, highlights a core dilemma in contemporary intellectual property law: to what extent should past innovations be enclosed within proprietary frameworks, rather than serving as stepping stones for further progress? While IP protections are essential to fostering an initial investment in research and development, their overextension can lead to an anti-innovative paradox, where legal constraints on prior knowledge suppress the very progress that the system was designed to encourage.

This issue extends beyond extreme, existential scenarios like interplanetary migration or global crises. Even under ordinary economic conditions, an overly rigid IP regime risks entrenching a form of modern feudalism—where a small group of corporate entities wield disproportionate control over knowledge, technology, and economic opportunity. When access to fundamental advancements is governed by legalistic gatekeeping rather than meritocratic innovation, industries stagnate, and entire societies become beholden to a new aristocracy of intellectual property holders.

The analogy between modern intellectual property regimes and historical feudal structures is not merely rhetorical—it is reflected in the growing monopolization of knowledge, technological infrastructures, and digital ecosystems. Just as medieval feudal lords controlled access to land, today's technology giants control access to essential digital and scientific resources, creating systemic inequalities in innovation. Patent trolling and strategic litigation allow corporations to accumulate patents not to advance technology, but to block competitors and extract rents through legal battles, an abuse that mirrors feudal toll systems restricting economic activity. Prolonged IP lock-in and evergreening enable companies to extend the lifespan of patents through incremental modifications, effectively privatizing foundational knowledge for generations rather than allowing it to contribute to technological evolution. Universities and research institutions, originally designed to disseminate knowledge freely, are increasingly commercialized, limiting access to research unless one can afford exorbitant licensing fees. Without intervention, IP law risks transforming into a global system of intellectual serfdom—where access to knowledge is stratified between those who control patents and licensing regimes and those who must operate within their constraints.

To realign intellectual property law with its original function as a catalyst for progress, legal systems must undergo structural recalibration. The goal should not be to dismantle intellectual property protections entirely, but to ensure they operate within a framework that prioritizes ongoing innovation over static monopoly control. Time-limited patent protections should expire at a rate proportionate to the field's innovation cycle, preventing outdated patents from hindering industry progress. Compulsory licensing mechanisms should allow for public-interest-driven access, particularly in areas critical to economic and technological development. Certain fields—such as space exploration, artificial intelligence, and biotechnologies with existential implications—should be partially exempt from restrictive intellectual property

enclosures, with models that incentivize shared progress while still rewarding original contributors. Anti-trust regulations should prohibit the strategic acquisition of patents for monopolistic control rather than genuine technological development, while regulatory mechanisms must prevent knowledge hoarding, where firms deliberately restrict access to foundational research through proprietary restrictions.

The ethical legitimacy of intellectual property law rests on its ability to balance exclusivity with accessibility, protecting innovation while ensuring it serves the broader advancement of society. The alternative—a legal landscape where corporations and elite entities exert indefinite control over fundamental technologies—would constitute a de facto digital feudalism, where knowledge ceases to be a vehicle for collective progress and instead becomes a privatized commodity subject to corporate sovereignty.

Thus, legal scholars, policymakers, and industry leaders must reaffirm the principle that intellectual property exists to facilitate, not hinder, human progress. The objective is not to dismantle the incentives for innovation but to prevent legal systems from becoming tools of entrenched economic and technological hierarchy. If the goal of knowledge is to advance civilization, then its legal frameworks must be structured not to enclose progress, but to ensure its continuous, collective evolution.

V. FUTURE DIRECTIONS FOR STUDY AND RESEARCH

One critical area for future research is the development of inclusive design standards and legal frameworks that prioritize addressing the needs of underserved or marginalized populations. Cases like Transsion's innovation in addressing algorithmic bias demonstrate the potential for inclusive designs to bridge the gaps. Exploring how intellectual property laws can encourage such efforts while safeguarding creators' rights will be vital for ensuring equitable technological progress.

Another direction involves assessing the impact of flexible intellectual property enforcement. Comparative studies across industries and regions could provide empirical insights into how differing approaches influence economic growth, innovation, and societal well-being. Such research would help policymakers understand the broader implications of intellectual property law on market dynamics and human rights.

The ethical and technological implications of biased algorithms also warrant deeper investigation. Algorithms embedded in everyday technologies, such as cameras or facial recognition software, often reflect and amplify societal biases. Research should explore how intellectual property laws can incentivize the development of unbiased and inclusive technologies, ensuring that advancements do not perpetuate discrimination or exclusion.

Additionally, it is crucial to study the balance between global and local needs in intellectual property policies. While global intellectual property protection frameworks often favor established multinational corporations, they can inadvertently hinder innovation in emerging markets. Examining how policies can be tailored to address local innovation needs—without undermining global protections—will provide insights into fostering equitable growth.

Interdisciplinary policy models that integrate human-centered design principles with legal scholarship represent another promising avenue. By combining insights from design, law, and technology, researchers can propose intellectual property frameworks that promote innovation while aligning with broader human rights objectives. These models could serve as a foundation for creating legal systems that are both adaptive and equitable. Through these research directions, scholars and practitioners can contribute to building a more balanced and equitable intellectual property regime—one that protects innovation while addressing the human rights implications of technological progress.

CONCLUSION

In conclusion, it is essential to emphasize that Legal frameworks should balance protecting intellectual property with fostering inclusive innovation, ensuring that laws do not favor monopolies at the expense of progress. Blindly adhering to a rigid standard of originality—one that disregards external sources or influences—can often resemble an ostrich burying its head in the sand, failing to acknowledge the existence of earlier, similar works. This insular approach not only risks mischaracterizing seemingly innovative ideas but also creates a self-imposed stagnation that impedes progress. Overly rigid intellectual property enforcement risks stagnation: instead, innovation thrives when legal frameworks encourage adaptation and cross-disciplinary exchange. A balanced framework should therefore promote originality while fostering an environment that values the assimilation of new viewpoints, ensuring that innovation thrives in a collaborative and inclusive ecosystem.

FREEDOM OF THOUGHT AND FAKE NEWS: INTERNATIONAL HUMAN RIGHTS IN THE AGE OF SOCIAL MEDIA

Allison Mitton*

Abstract: Disinformation and malinformation are spread quickly and easily on social media because anyone can post content, deepfakes and other AI-generated content are easily created, and algorithms and bots amplify this material. As a result, false information thrives with little accountability for bad actors. This raises a critical issue: using technology as a tool to manipulate how people think seems to violate the right to freedom of thought. So why is this right so often infringed upon digitally, and how can this be prevented? Although scholars have attempted to interpret the right to freedom of thought and countries have implemented their own protections, these measures fall short, as the ease with which these actions can cross international boundaries allows foreign actors to continue infringing on this right. I suggest that the underlying issue lies in the absence of treaties, conventions, or principles of customary law that link the spread of disinformation or malinformation to a human rights violation—an infringement on freedom of thought. I argue for the adoption of a Third Optional Protocol to the International Covenant on Civil and Political Rights that (1) explicitly recognizes the use of technology to manipulate thoughts as a human rights violation, (2) outlines guidelines to prevent such infringements, and (3) establishes a better way to hold states accountable. By implementing this Protocol, meaningful progress can be made toward safeguarding the right to freedom of thought as technology evolves.

Keywords: Freedom of Thought; Human Rights; International; Artificial Intelligence; Technology

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INTRODUCTION

In 2022, a video surfaced on social media and a Ukrainian news website depicting Volodymyr Zelenskiy, the country's president, "call[ing] on his soldiers to lay down their weapons and return to their families."[1] However, the video was a deepfake—it was created with generative artificial intelligence (AI).[2]

Thankfully, viewers quickly caught on to the fact that the video was fake and "immediately flagged the discrepancies between the skin tone on Zelenskiy's neck and face, the odd accent in the video, and the pixelation around his head."[3] Zelenskiy himself was also able to quickly rebut the deepfake by posting a real video of himself on his Instagram account, dismissing the video as a "childish provocation."[4]

People speculate that Russia was behind this,[5] but because tracing the origins of false content on social media is often difficult, identifying the responsible party can be challenging.[6] Although the Zelenskiy video did not appear to have any serious consequences for either party involved, it highlights a larger issue: an increasing loss of trust in social media content and news in general worldwide.[7] Because spreading false information is so rarely traceable back to them, foreign actors have increasingly taken advantage of the fact that fake news is so easy to spread and that spreading it has little to no repercussions.[8]

As one scholar notes, "[d]eliberately trying to change what people perceive, think, feel and...do appears to be at tension with the human right to form thoughts freely and make decisions based on those thoughts."[9] Although the right to freedom of thought is very broadly defined with little to no official clarification on its exact meaning,[10] one widely recognized aspect of freedom of thought is that people should have "[f]reedom from impermissible alteration of [their] thoughts."[11] When there is a

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[1] Dan Milmo & Pjotr Sauer, *Deepfakes v Pre-Bunking: Is Russia Losing the Infowar?*, THE GUARDIAN (Mar. 19, 2022, 2:00 AM), https://www.theguardian.com/world/2022/mar/19/russia-ukraine-infowar-deepfakes.

[2] *Id.*

[3] James Pearson & Natalia Zinets, *Deepfake Footage Purports to Show Ukrainian President Capitulating*, REUTERS (Mar. 17, 2022, 6:16 AM), https://www.reuters.com/world/europe/deepfake-footage-purports-show-ukrainian-president-capitulating-2022-03-16.

[4] Milmo & Sauer, *supra* note 1.

[5] *Id.*

[6] *See* Maria Pawelec, *Deepfakes and Democracy (Theory): How Synthetic Audio-Visual Media for Disinformation and Hate Speech Threaten Core Democratic Functions*, 1 DIGIT. SOC'Y 1, 25 (2022).

[7] Simon Montlake, *Trust in the Media Has Tanked. Are We Entering a 'Post-News' Era?*, THE CHRISTIAN SCI. MONITOR (May 3, 2024, 3:25 PM), https://www.csmonitor.com/USA/Politics/2024/0503/news-media-decline-polarization-distrust.

[8] *See* Pawelec, *supra* note 6.

[9] Richard Mackenzie-Gray Scott, *Managing Misinformation on Social Media: Targeted Newsfeed Interventions and Freedom of Thought*, 21 NW. J. HUM. RTS. 109, 111 (2023).

[10] Patrick O'Callaghan, Olga Cronin, Brendan D. Kelly, Bethany Shiner, Joel Walmsley & Simon McCarthy-Jones, *The Right to Freedom of Thought: An Interdisciplinary Analysis of the UN Special Rapporteur's Report on Freedom of Thought*, 28 INT'L J. HUM. RTS. 1, 3 (2024); Simon McCarthy-Jones, *The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century*, 2 FRONTIERS A.I. 1, 1 (2019).

[11] Ahmed Shaheed & Wayne Martin, *Why Freedom of Thought Is So Important and How to Protect It*, ESSEX BLOGS (May 25, 2022), https://www.essex.ac.uk/blog/posts/2022/05/25/why-freedom-of-thought-is-so-important-and-how-to-protect-it.

possibility that everything one views online could be false, it disrupts individuals' ability to form their thoughts grounded in truthful information.[12]

This Note advocates for the adoption of a Third Optional Protocol to the International Covenant on Civil and Political Rights (ICCPR), affirming that technology can violate freedom of thought, as this right should include the right to base one's thoughts on truthful information. The Protocol should require states to refrain from using technology to infringe on this right and ensure that individuals within their jurisdictions who believe their right to freedom of thought has been violated through technology have access to domestic legal remedies, and, if needed, consideration by the Human Rights Committee.

Part I defines key terms, describes how countries use technology to interfere with another nation's freedom of thought, and discusses the concept of freedom of thought along with the issues associated with it. Part II examines relevant principles found in treaties, conventions, and customary law. Finally, Part III suggests potential language for a Third Optional Protocol to the ICCPR and outlines a practical approach for its implementation.

I. BACKGROUND INFORMATION

First, it is critical to understand the differences between mis-, dis-, and malinformation and to be aware of the tools that state actors can use to disseminate false information, which can affect freedom of thought. After defining these terms, the scope of the right to freedom of thought, its shortcomings, and its modern interpretation are examined, particularly considering its current lack of a clear definition.

A. Definitions and Key Terms

This section defines key terms and explains how certain technologies like deepfakes, algorithms, and bots operate, laying the foundation for understanding how countries have abused these tools to infringe on freedom of thought.

1. Mis-, Dis-, and Malinformation

"Fake news" is a term that is constantly used in the media[13] to refer to "false or inaccurate information."[14] However, because there are many different categories of information that could fall under this definition, using this term can be unhelpful or misleading.[15] As a result, the term has fallen out of favor,[16] with more precise terms—misinformation, disinformation, and malinformation (collectively referred to as

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[12] *See* Montlake, *supra* note 7.
[13] *See generally* Daniel Funke, *Should We Stop Saying 'Fake News'?*, POYNTER (Dec. 14, 2017), https://www.poynter.org/fact-checking/2017/should-we-stop-saying-fake-news (explaining that "[i]n 2017, fake news was everywhere," and was even "named word of the year by Collins Dictionary.").
[14] *Disinformation and Human Rights Explained*, GLOB. PARTNERS DIGIT. (June 1, 2023), https://www.gp-digital.org/a-human-rights-based-approach-to-disinformation.
[15] The term "fake news" can refer to satire or parody content, misleading content, true information shared in the wrong context, entirely fabricated content, and even information that the person sharing simply does not like. *Id.*
[16] Joshua Habgood-Coote, *The Term 'Fake News' Is Doing Great Harm*, THE CONVERSATION (July 27, 2018, 8:55 AM), https://theconversation.com/the-term-fake-news-is-doing-great-harm-100406.

"MDM")—being adopted in its place.[17] Although there are no universally accepted definitions for these terms, various agencies have provided definitions of their own.[18]

Misinformation is commonly defined as false information that is "not created or shared with the intention of causing harm,"[19] as "the person who is disseminating it believes that it is true."[20] For example, someone accidentally sharing an "inaccurate photo[], quote[], or date[] online" would be considered spreading misinformation because they are unaware the information is false.[21] Though misinformation does admittedly impede on one's right to base their thoughts on truthful and accurate information, this Note focuses only on false information spread or created with malicious intent—thus, misinformation will not be further discussed.

Disinformation, on the other hand, is an "intentional falsehood[] or distortion[], often spread as news, to advance political goals such as discrediting opponents, disrupting policy debates, influencing voters, inflaming existing social conflicts, or creating a general backdrop of confusion and informational paralysis."[22] Disinformation may include things like "fabricated news stories and political propaganda."[23]

Finally, "[m]alinformation is [information] based on fact, but used out of context to mislead, harm, or manipulate."[24] For example, "editing a video to remove important context to harm or mislead" would be considered malinformation.[25] Although this type of information may arguably be considered truthful—since the information itself was not fabricated—malinformation still infringes on the right to base one's thoughts on truthful information, because by removing the important context of a sentence or selectively leaking only certain information, individuals are prevented from the ability to base their thoughts on the full context of a situation.

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[17] *What is Mis-, Dis-, or Malinformation (MDM)?*, A MORE PERFECT UNION (June 6, 2024), https://www.jewishdemocracy.org/resources-list/what-is-mis-dis-or-malinformation-mdm.
[18] *Disinformation and Human Rights Explained*, *supra* note 14.
[19] *Mis-, Dis-, and Malinformation: Planning and Incident Response Guide for Election Officials*, CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY 1, https://www.cisa.gov/sites/default/files/publications/mdm-incident-response-guide_508.pdf; *Disinformation and Human Rights Explained*, *supra* note 14.
[20] *Misinformation, Disinformation and Mal-information*, MEDIA DEFENCE, https://www.mediadefence.org/ereader/publications/modules-on-litigating-freedom-of-expression-and-digital-rights-in-south-and-southeast-asia/module-8-false-news-misinformation-and-propaganda/misinformation-disinformation-and-mal-information (last visited Oct. 20, 2024).
[21] *Fake News, Hoaxes and Misinformation*, NSPCC, https://www.nspcc.org.uk/keeping-children-safe/online-safety/inappropriate-explicit-content/fake-news (last visited Oct. 22, 2024).
[22] W. Lance Bennett & Steven Livingston, *A Brief History of the Disinformation Age: Information Wars and the Decline of Institutional Authority*, in THE DISINFORMATION AGE: POLITICS, TECH., & DISRUPTIVE COMMC'N. IN THE U.S. 3 (W. Lance Bennett & Steven Livingstons eds., 2020).
[23] NSPCC, *supra* note 21.
[24] *Mis-, Dis-, and Malinformation: Planning and Incident Response Guide for Election Officials*, supra note 19, at 1.
[25] *Foreign Influence Operations and Disinformation*, CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY, https://www.cisa.gov/topics/election-security/foreign-influence-operations-and-disinformation (last visited Oct. 22, 2024).

2. Social Media as a News Source

The rise of the internet has significantly accelerated the spread of information, which has also led to an increase in the spread of MDM.[26] Social media, in particular, has had a massive impact on escalating its spread.[27] Before the advent of social media, people around the world typically relied on news agencies held to certain "agreed-upon ethics and standards" for their news and information.[28] Today, however, much of the news is sourced from peers online.[29] In fact, studies show that "[fifty-three percent] of Americans get at least some of their news from social media,"[30] with social media being "the most common news source" among eighteen- to twenty-nine-year-olds.[31]

Social media as a news source poses an issue because little to no content is fact-checked and freedom of speech allows people to post almost anything.[32] To an extent, "social media platforms [even] inadvertently encourage users to spread misinformation" because content with more likes, comments, and shares gets pushed to more viewers.[33] While most social media content is provided on a "buyer beware" basis—with users generally under no obligation to provide accurate information[34]—not all social media users take the time to fact-check the information they read online.[35] Because many people choose not to verify the information they learn on social media, bad actors can easily exploit this and intentionally spread disinformation and malinformation.

3. Deepfakes

One method for spreading disinformation on social media and other news sources is the use of deepfakes. Deepfakes are false videos or images that are "created

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[26] *Misinformation, Disinformation and Mal-information*, MEDIA DEFENCE, https://www.mediadefence.org/ereader/publications/modules-on-litigating-freedom-of-expression-and-digital-rights-in-south-and-southeast-asia/module-8-false-news-misinformation-and-propaganda/misinformation-disinformation-and-mal-information (last visited Oct. 22, 2024).

[27] *See, e.g.*, Anastasia Micich & R.J. Cross, *How Misinformation on Social Media Has Changed News*, U.S. PIRG (Nov. 22, 2023), https://pirg.org/edfund/articles/misinformation-on-social-media.

[28] *See Misinformation, Disinformation and Mal-information*, *supra* note 26.

[29] *See, e.g.*, *Misinformation, Disinformation and Mal-information*, *supra* note 26; *Social Media and News Fact Sheet*, PEW RSCH. CTR. (Sept. 17, 2024), https://www.pewresearch.org/journalism/fact-sheet/social-media-and-news-fact-sheet.

[30] Micich & Cross, *supra* note 27; PEW RSCH. CTR., *supra* note 29.

[31] Micich & Cross, *supra* note 27.

[32] *See* Olivia Kerben, *Relying on Social Media for News Is Dangerous*, THE MIAMI STUDENT (Mar. 5, 2024), https://www.miamistudent.net/article/2024/03/read-the-news?ct=content_open&cv=cbox_latest.

[33] Gizem Ceylan & Susie Allen, *How Social Media Rewards Misinformation*, YALE INSIGHTS (Mar. 31, 2023), https://insights.som.yale.edu/insights/how-social-media-rewards-misinformation; Micich & Cross, *supra* note 27.

[34] *See* Jane Bambauer, *Negligent AI Speech: Some Thoughts About Duty*, 3 J. FREE SPEECH L. 343, 351 (2023). *See also Seven Best Practices for Doctors on Social Media*, FPM (Feb. 19, 2020), https://www.aafp.org/pubs/fpm/blogs/inpractice/entry/social_media_best_practices.html (explaining that "[p]hysicians on social media have a professional responsibility to ensure the accuracy of the health-related content they create or share," just one example of when social media users may be obliged to provide correct information online).

[35] *See generally* Eileen Brown, *9 Out of 10 Americans Don't Fact-check Information They Read on Social Media*, ZDNET (May 10, 2017, 2:00 PM), https://www.zdnet.com/article/nine-out-of-ten-americans-dont-fact-check-information-they-read-on-social-media (stating that "American adults spread fake news because they place a lot of trust in their social media friends and acquaintances" who share the posts that appear in their news feeds).

via deep learning,[36] a form of artificial intelligence, where a person's likeness, including their face and voice, can be realistically swapped with someone else's."[37]

Deepfakes can be created through various methods,[38] but the most common way involves the following steps. For face swapping, face images of two people are first "run through an AI algorithm" which "finds and learns similarities between the two faces, and [then] reduces them to their shared common features."[39] These two images are then fed into a second algorithm, which reconstructs the original image it was given, producing a fake yet highly realistic image.[40] For voice cloning, a similar process is followed, but audio recordings are used instead of images.[41] With enough audio input, the AI can "replicate the slight intonations of [a person's] speech with startling accuracy."[42]

Since deepfake creation software is becoming increasingly accessible and affordable,[43] it is now "possible for anyone to generate false information and fake content in vast quantities,"[44] raising concerns about potential foreign interference, widespread confusion, and other threats.[45]

4. Social Media Algorithms and Bots

Disinformation and malinformation alike can be perpetuated through manipulating social media algorithms, including by using bot accounts. Social media algorithms are "rules, signals[,] and data that govern the platform's operation . . . and determine how content is filtered, ranked, selected[,] and recommended to users."[46] These algorithms typically consider factors such as user engagement, content type,

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[36] For more information on deep learning generally, see *What is Deep Learning?*, AMAZON WEB SERVICES, https://aws.amazon.com/what-is/deep-learning (last visited Oct. 16, 2024) ("Deep learning is a method in artificial intelligence (AI) that teaches computers to process data in a way that is inspired by the human brain. Deep learning models can recognize complex patterns in pictures, text, sounds, and other data to produce accurate insights and predictions.").

[37] *Deepfake Technology*, ORG. FOR SOC. MEDIA SAFETY, https://www.socialmediasafety.org/advocacy/deepfake-technology (last visited Oct. 5, 2024).

[38] Deepfakes can also be created through generative adversarial networks, or GANs. The author describes: "A G[AN] pits two artificial intelligence algorithms against each other. The first algorithm, known as the generator, is fed random noise and turns it into an image. This synthetic image is then added to a stream of real images—of celebrities, say—that are fed into the second algorithm, known as the discriminator." Although the images will not look like real faces at first, repeating the process eventually results in extremely realistic faces. *See* Ian Sample, *What Are Deepfakes – And How Can You Spot Them?*, THE GUARDIAN (Mar. 3, 2023), https://www.theguardian.com/technology/2020/jan/13/what-are-deepfakes-and-how-can-you-spot-them.

[39] *Id.*

[40] *Id.*

[41] Michael Sum, *Beyond ChatGPT: How Are A.I. Voices Made?*, VOQUENT (Apr. 5, 2023), https://www.voquent.com/blog/beyond-chatgpt-how-are-ai-voices-made/?srsltid=AfmBOopAiGxz_r4LdjVVznDqL5D9ZIZfLLlKYZ1OF8_i_Hx-XUluyKd0.

[42] *Id.*

[43] Adam Satariano & Paul Mozur, *The People Onscreen Are Fake. The Disinformation Is Real*, N.Y. TIMES (Feb. 7, 2023), https://www.nytimes.com/2023/02/07/technology/artificial-intelligence-training-deepfake.html.

[44] Julius Endert, *Generative AI Is the Ultimate Disinformation Amplifier*, DW AKADEMIE (Mar. 26, 2024), https://p.dw.com/p/4doP4.

[45] *See* discussion *infra* Part I(B)(3).

[46] Dorcas Adisa, *Everything You Need to Know About Social Media Algorithms*, SPROUT SOCIAL (Oct. 30, 2023), https://sproutsocial.com/insights/social-media-algorithms.

virality, watch time, recency, and the posting account's popularity when determining which content to push to users.[47] Although ideally, the algorithm would push content based on organic user activity, some programmers have taken advantage of the ability to influence which content the algorithm prioritizes by creating bot accounts.[48]

Social media bots are "automated programs designed to mimic human behavior on social media."[49] Bots are typically "associated with fake social media profiles, business accounts, or pages,"[50] and are created to "participate in heated debates on various social media posts or engage in spam-like activities"[51] and "boost the apparent popularity of other accounts" by following, liking, and commenting on other accounts' posts.[52] Bots are a common feature and huge concern of every social media platform.[53] In 2022, researchers estimated that bot accounts made up between twenty-five to sixty-eight percent of all users on Twitter (now known as X).[54]

Because bots are designed to generate "a large volume of posts, comments, and likes, [they] can create the illusion of widespread support or opposition for a particular viewpoint, swaying public opinion in a desired direction,"[55] and can cause the algorithm to push such content to more users due to the post's high level of engagement.[56]

B. How Countries Use Technology to Influence Thought

With technology and social media connecting countries more than ever before, new avenues have opened for countries to intentionally infringe on each other's freedom of thought. While many examples of these actions involve individuals from other countries, only some have been attributed to state actors—that is, a "public official [of another country] acting in [their] official capacity."[57] This section identifies examples where state actors have been accused or proven to have used technology to interfere with this freedom, and then discusses the broader effects of such interference.

1. Spreading Disinformation

Countries can interfere with another nation's freedom of thought by spreading disinformation on social media.[58] Although this can be accomplished in many ways,

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[47] *Id.*
[48] *See What Is a Social Media Bot? | Social Media Bot Definition*, CLOUDFLARE, https://www.cloudflare.com/learning/bots/what-is-a-social-media-bot (last visited Oct. 26, 2024).
[49] Sanja Trajcheva, *Social Bots: How Do They Shape Public Opinion?*, CHEQ (July 12, 2023), https://cheq.ai/blog/social-bots-how-do-they-shape-public-opinion.
[50] *Id.*
[51] *Id.*
[52] *What Is a Social Media Bot? | Social Media Bot Definition*, *supra* note 48.
[53] *See, e.g.,* Trajcheva, *supra* note 49.
[54] *Id.*
[55] *Id.*
[56] *See* Dorcas Adisa, *Everything You Need to Know About Social Media Algorithms*, SPROUT SOCIAL (Oct. 30, 2023), https://sproutsocial.com/insights/social-media-algorithms.
[57] *State Actor Definition*, LAW INSIDER, https://www.lawinsider.com/dictionary/state-actor (last visited Nov. 27, 2024).
[58] *See* Maria Pawelec, *Deepfakes and Democracy (Theory): How Synthetic Audio-Visual Media for Disinformation and Hate Speech Threaten Core Democratic Functions*, 1 DIGIT. SOC'Y 1, 25 (2022).

this section focuses on two common approaches: using deepfakes to deceive viewers and utilizing bots to create the illusion of widespread support for a particular issue.

First, deepfakes can be posted online to mislead viewers. For example, just "[d]ays before a pivotal [presidential] election in Slovakia, . . . a damning audio recording spread online in which one of the top candidates seemingly boasted about how he [had] rigged the election."[59] However, the recording was generated by AI.[60] Although the source of the deepfake has not been officially confirmed, the post is believed to be "part of a wider influence campaign by Russia."[61]

Thankfully, many deepfakes can currently be detected due to their low quality, because creating high-quality deepfakes can be expensive and time-consuming.[62] However, "deepfake technology is quickly maturing and increasingly becoming more difficult to detect," demonstrating an urgent need to implement safeguards for it now.[63]

Social media bots can also be used to spread disinformation—and perhaps in a more believable way.[64] Although deepfakes can be identified somewhat easily (depending on their quality),[65] bots can be harder to detect because they make up such a large portion of social media accounts and are designed to act as a human would online.[66]

For instance, the Russian government recently operated a social media bot farm as part of a Kremlin-approved and funded project run by a Russian intelligence officer.[67] For this project, "elements of AI [were used] to create fictitious social media profiles—often purporting to belong to individuals in the United States—which the operators then used to promote messages in support of Russian government objectives."[68] Most of the posts were made on X, formerly known as Twitter, and showed support for Russia's war in Ukraine and other pro-Kremlin narratives.[69]

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[59] Curt Devine, Donie O'Sullivan & Sean Lyngaas, *A Fake Recording of a Candidate Saying He'd Rigged the Election Went Viral. Experts Say It's Only the Beginning*, CNN (Feb. 1, 2024, 6:09 AM), https://www.cnn.com/2024/02/01/politics/election-deepfake-threats-invs/index.html.
[60] *Id.*
[61] *Id.*
[62] Catherine Bernaciak & Dominic A. Ross, *How Easy Is It to Make and Detect a Deepfake?*, CARNEGIE MELLON UNIV. (Mar. 14, 2022), https://insights.sei.cmu.edu/blog/how-easy-is-it-to-make-and-detect-a-deepfake.
[63] Don Philmlee, *Practice Innovations: Seeing Is No Longer Believing—The Rise of Deepfakes*, THOMSON REUTERS (July 18, 2023), https://www.thomsonreuters.com/en-us/posts/technology/practice-innovations-deepfakes/#:~:text=Right%20now%2C%20deepfake%20technology%20is,becoming%20more%20difficult%20to%20detect.
[64] *See* Emily Harding, *A Russian Bot Farm Used AI to Lie to Americans. What Now?*, CTR. FOR STRATEGIC & INT'L STUD. (July 16, 2024), https://www.csis.org/analysis/russian-bot-farm-used-ai-lie-americans-what-now.
[65] Bernaciak & Ross, *supra* note 62.
[66] *See* Harding, *supra* note 64.
[67] Shannon Bond, *U.S. Says Russian Bot Farm Used AI to Impersonate Americans*, NPR (July 9, 2024, 5:32 PM), https://www.npr.org/2024/07/09/g-s1-9010/russia-bot-farm-ai-disinformation.
[68] Press Release, Office of Public Affairs, Justice Department Leads Efforts Among Federal, International, and Private Sector Partners to Disrupt Covert Russian Government-Operated Social Media Bot Farm (July 9, 2024), https://www.justice.gov/opa/pr/justice-department-leads-efforts-among-federal-international-and-private-sector-partners.
[69] Bond, *supra* note 67.

Not only were U.S. citizens tricked by these realistic accounts—social media platforms also believed that these false "personas [were] not bots at all."[70] Alarmingly, the operation "had been underway for two years" before it was noticed and eventually shut down.[71] Experts worry that in the near future, "the state of the art in AI will be such that a bot can identify the messages that resonate best with a micropopulation and then feed that population what they want to hear," making bots "feel as local and genuine as a conversation over the fence with a neighbor,"[72] and thus, even more difficult to detect.

2. Leaking Malinformation

Not all false information online is entirely fabricated, however. Countries can also infringe on freedom of thought through spreading malinformation on social media to affect other countries.[73] Malinformation can include "selectively edited videos or true information exaggerated to appear more sinister,"[74] and typically involves hacking or leaking sensitive information to create a desired narrative.[75] By strategically leaking truthful information taken out of context, countries can expose vulnerabilities of other countries and sway public opinion among their citizens.[76]

For example, in 2016, Russia "hack[ed] the Democratic National Committee and leak[ed] documents aimed at undercutting Hillary Clinton's presidential campaign."[77] More recently, the United States faced another "major Russian government-backed effort to influence the 2024 U.S. presidential election"[78] when Vladimir Putin, the country's president, directed "three Russian companies [to] use[] fake profiles to promote false narratives on social media,"[79] with "one of the goals... [being] to boost the candidacy of Donald Trump or whoever emerged as the Republican nominee for president."[80]

The United States was involved in a similar scheme in 2022, when "an influence campaign pushing U.S. interests abroad" was discovered and taken down from

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[70] Harding, *supra* note 64.
[71] *Id.*
[72] *Id.*
[73] *See, e.g.*, Patrick O'Callaghan, Olga Cronin, Brendan D. Kelly, Bethany Shiner, Joel Walmsley & Simon McCarthy-Jones, *The Right to Freedom of Thought: An Interdisciplinary Analysis of the UN Special Rapporteur's Report on Freedom of Thought,* 28 INT'L J. HUM. RTS. 1, 12 (2024).
[74] *What is Mis-, Dis-, or Malinformation (MDM)?,* A MORE PERFECT UNION (June 6, 2024), https://www.jewishdemocracy.org/resources-list/what-is-mis-dis-or-malinformation-mdm.
[75] *See* Luca Tancredi, *Understanding Misinformation, Disinformation and Malinformation: Definitions and Real-world Examples*, SUSTAINABLE COOP. FOR PEACE & SEC. (July 20, 2024), https://sustainablepeace.eu/understanding-misinformation-disinformation-and-malinformation-definitions-and-real-world-examples.
[76] *See id.*
[77] Sean Lyngaas, Evan Perez, Kylie Atwood, Zachary Cohen & Jennifer Hansler, *Biden Administration Announces Major Actions to Tackle Russian Efforts to Influence 2024 Election*, CNN: POLITICS (Sept. 4, 2024), https://www.cnn.com/2024/09/04/politics/biden-administration-accuse-russia-election-influence-efforts/index.html; Simon Ostrovsky & Yegor Troyanovsky, *How Russia is Using Artificial Intelligence to Interfere in Elections*, PBS NEWS (Sept. 4, 2024, 6:35 PM), https://www.pbs.org/newshour/show/how-russia-is-using-artificial-intelligence-to-interfere-in-elections.
[78] Lyngaas et al., *supra* note 77.
[79] *Id.*
[80] *Id.*

Facebook, Instagram, WhatsApp, and Twitter.[81] The campaign used accounts "posed as news outlets or... people who didn't exist" to promote American views and attack the interests of Russia, China, and Iran.[82] Although Russia receives plenty of attention for spreading disinformation and malinformation using technology, they are evidently not the only country that is guilty—this is a widespread issue that needs to be addressed.[83]

3. Effects of Interference

Undoubtedly, these types of online content can mislead people and have tangible effects on the world.[84] On a societal level, disinformation and malinformation can impact a country's "media, politics, science, and economics."[85] It can cause people to "disengage[] with news media in general and [lose] trust in traditional news institutions,"[86] "lead[] voters toward advocating policies that are counter to their own interests,"[87] influence "public understanding of science,"[88] and result in financial costs due to efforts "to debunk misinformation," raise awareness, and regulate it.[89]

On an individual level, disinformation and malinformation can have psychological effects.[90] It is often challenging for people to revise their "beliefs when false claims are retracted,"[91] and "frequent exposure to misinformation is claimed to hinder people's general ability to distinguish between true and false information."[92] Most importantly, using technology to spread disinformation and malinformation is

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[81] Sheera Frenkel & Tiffany Hsu, *Facebook, Twitter and Others Remove Pro-U.S. Influence Campaign*, N.Y. TIMES (Aug. 24, 2022), https://www.nytimes.com/2022/08/24/technology/facebook-twitter-influence-campaign.html.

[82] *Id.*

[83] For examples of countries interfering in other countries' elections, see generally Chen-Ling Hung, Wen-Cheng Fu, Chang-Ce Liu, & Hui-Ju Tsai, *AI Disinformation Attacks and Taiwan's Responses During the 2024 Presidential Election*, THOMSON FOUND., https://www.thomsonfoundation.org/media/268943/ai_disinformation_attacks_taiwan.pdf (last visited Oct. 19, 2024) (describing how China used "AI-fabricated content, misleading narratives[,] and coordinated behavior" to influence the outcome of Taiwan's 2024 election) (internal quotation marks omitted); Press Release, U.S. Department of Justice: Office of Public Affairs, Two Iranian Nationals Charged for Cyber-Enabled Disinformation and Threat Campaign Designed to Influence the 2020 U.S. Presidential Election (Nov. 18, 2021), https://www.justice.gov/opa/pr/two-iranian-nationals-charged-cyber-enabled-disinformation-and-threat-campaign-designed (describing how "two Iranian nationals [were charged] for their involvement in a cyber-enabled campaign to intimidate and influence American voters" by disseminating a video with disinformation, among other things); and Bill Bigelow, *The Overthrow of Democracy in Chile—A Timeline*, ZINN EDUC. PROJECT (2023), https://www.zinnedproject.org/materials/chile-coup-timeline (last visited Oct. 19, 2024) (explaining that in 1964, "[t]he United States Central Intelligence Agency spen[t] $20 million in Chilean election to defeat the Marxist candidate, Salvador Allende" using technology available at the time).

[84] Zoë Adams, Magda Osman, Christos Bechlivanidis & Björn Meder, *(Why) Is Misinformation a Problem?*, 18(6) PERSPS. ON PSYCH. SCI. 1436, 1438–45 (2023).

[85] *Id.* at 1438.

[86] *Id.* at 1438–40.

[87] *Id.* at 1440.

[88] *Id.* at 1441.

[89] *Id.*

[90] *Id.* at 1442.

[91] *Id.*

[92] *Id.* at 1443.

problematic because it hinders people from being able to form their own thoughts based on truthful information, and arguably infringes on their right to freedom of thought.[93]

C. Freedom of Thought

Freedom of thought is an internationally recognized and fundamental human right.[94] It was first legally recognized in 1948 with the passage of the Universal Declaration of Human Rights (UDHR), and became formally recognized as international law in 1976 when the International Covenant on Civil and Political Rights (ICCPR) came into force.[95] Since its establishment, the Human Rights Council has clarified that the right to freedom of thought is protected unconditionally, permitting no limitations on this right.[96]

1. What is Freedom of Thought?

A preliminary issue is defining what "thought" entails. Since Article 18 of the ICCPR groups together the rights to freedom of thought, conscience, and religion,[97] and given that there are several other human rights (including, among others, the freedoms of conscience, belief, expression, and privacy) which "already safeguard the interests in question, even if they do so indirectly,"[98] it is hard to parse out where one freedom ends and the other begins.

Due to this ambiguity, some have characterized the relationship between freedom of thought and its other closely related freedoms as having two parts.[99] Freedom of thought itself can be considered "a freedom to think and believe whatever [one] choose[s]," while the other rights pertain to "a freedom to demonstrate [one's] thoughts or beliefs publicly."[100] Thus, at its most basic level, freedom of thought can

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[93] *See* Richard Mackenzie-Gray Scott, *Managing Misinformation on Social Media: Targeted Newsfeed Interventions and Freedom of Thought*, 21 NW. J. HUM. RTS. 109, 111 (2023); Simon Montlake, *Trust in the Media Has Tanked. Are We Entering a 'Post-News' Era?*, THE CHRISTIAN SCI. MONITOR (May 3, 2024, 3:25 PM), https://www.csmonitor.com/USA/Politics/2024/0503/news-media-decline-polarization-distrust.

[94] *See, e.g.*, Patrick O'Callaghan, Olga Cronin, Brendan D. Kelly, Bethany Shiner, Joel Walmsley & Simon McCarthy-Jones, *The Right to Freedom of Thought: An Interdisciplinary Analysis of the UN Special Rapporteur's Report on Freedom of Thought*, 28 INT'L J. HUM. RTS. 1, 3 (2024); Simon McCarthy-Jones, *The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century*, 2 FRONTIERS A.I. 1, 1 (2019).

[95] *See, e.g.*, Simon McCarthy-Jones, *supra* note 94, at 5; *FAQ: The Covenant on Civil & Political Rights (ICCPR)*, ACLU (July 11, 2013), https://www.aclu.org/documents/faq-covenant-civil-political-rights-iccpr#:~:text=The%20Covenant%20was%20adopted%20by,to%20comply%20with%20the%20ICCPR%3F.

[96] Human Rights Council, *Report of the Special Rapporteur on Freedom of Religion or Belief*, ¶ II(A)(2), A/HRC/31/18 (Dec. 23, 2015).

[97] G.A. Res. 2200A (XXI), International Covenant on Civil and Political Rights (Dec. 16, 1966); O'Callaghan et al., *supra* note 94.

[98] O'Callaghan et al., *supra* note 94.

[99] *Right to Freedom of Thought, Conscience, Religion and Belief*, QUEENSL. HUM. RTS. COMM'N, https://www.qhrc.qld.gov.au/your-rights/human-rights-law/right-to-freedom-of-thought,-conscience,-religion-and-belief (last visited Nov. 27, 2024).

[100] *Id.*

be viewed as a preliminary right for individuals to think for themselves, preceding any right to share or demonstrate those thoughts.[101]

2. Issues with Freedom of Thought

Although both the UDHR and the ICCPR state that "[e]veryone has the right to freedom of thought," neither document elaborates on what this actually means.[102] There is no indication of "what counts as thought, what qualifies as a violation of the right, whether the right should be absolute and, if not, what would justify its violation."[103] Scholars also "note that there is no legal authority and little scholarly analysis on what, precisely, is meant by the 'right to freedom of thought,'" including "what the right protects[] or how it can be used."[104] Additionally, there is no explanation on what the term "thought" means, or even what "freedom" entails in this context.[105]

For this reason, many people and organizations believe the right to freedom of thought needs to be clarified.[106] For example, "the UN Special Rapporteur has encouraged clarification of the content and scope of the [right to freedom of thought] both by individual [s]tates and through a General Comment of the Human Rights Committee."[107]

3. Interpretation of Freedom of Thought

Given the broad scope of the right to freedom of thought, individuals have taken it upon themselves to interpret its meaning.[108] In a 2021 report to the UN General Assembly, "legal scholars, philosophers, ethics experts[,] and neuroscientists" came together to propose four attributes of the right to freedom of thought: (1) "[f]reedom not to disclose one's thoughts"; (2) "[f]reedom from punishment for one's thoughts"; (3) "[f]reedom from impermissible alteration of thoughts"; and (4) "[t]he State obligation to foster an enabling environment for thought."[109] Although this definition is a good start to interpreting the meaning of freedom of thought, the third prong—freedom from impermissible alteration of thoughts—remains unclear as to what this would look like or what a violation would entail.

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[101] *See id.*
[102] G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948), Art. 18.
[103] Simon McCarthy-Jones, *The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century*, 2 FRONTIERS A.I. 1, 1 (2019).
[104] Patrick O'Callaghan, Olga Cronin, Brendan D. Kelly, Bethany Shiner, Joel Walmsley & Simon McCarthy-Jones, *The Right to Freedom of Thought: An Interdisciplinary Analysis of the UN Special Rapporteur's Report on Freedom of Thought*, 28 INT'L J. HUM. RTS. 1, 6 (2024).
[105] *Id.*
[106] *See, e.g.*, Sjors Ligthart, Christoph Bublitz, Thomas Douglas, Lisa Forsberg & Gerben Meynen, *Rethinking the Right to Freedom of Thought: A Multidisciplinary Analysis*, 22 HUM. RTS. L. REV. 1, 2 (2022).
[107] *Id.*
[108] *See* Ahmed Shaheed & Wayne Martin, *Why Freedom of Thought Is So Important and How to Protect It*, ESSEX BLOGS (May 25, 2022), https://www.essex.ac.uk/blog/posts/2022/05/25/why-freedom-of-thought-is-so-important-and-how-to-protect-it.
[109] *Id.*

Different countries around the world also have adopted protections for the right to freedom of thought in their respective jurisdictions.[110] For example, in the United States, "[t]he Constitution protects the right . . . to be generally free from governmental intrusions into one's privacy and control of one's thoughts."[111] Other nations hold similar views, with Europe "protect[ing] a space where one can be free from unwanted intrusions," with that space being one's head, home, or even one's mind.[112]

Though different countries have implemented their own protections for the right to freedom of thought—which is certainly a step in the right direction—these measures may only prevent people within their own borders from violating this right. Due to the online nature of social media and the ease with which these actions can cross international boundaries, foreign actors still infringe on this right, demonstrating a crucial need for international law to recognize and address such issues.

II. RELEVANT TREATIES, CONVENTIONS, AND CUSTOMARY LAW

Many nations have domestic laws to protect freedom of thought in their respective countries,[113] but international law must govern international actions.[114] Though there is no treaty currently prohibiting the use of technology to influence freedom of thought, this section examines the non-intervention principle as outlined in international treaties, conventions, and customary law, as well as other cyber norms that may apply when countries take actions that arguably violate the right to freedom of thought.

A. State Sovereignty and the Non-Intervention Principle

The principle of non-intervention stems from the broader principle of sovereignty, which is defined as "the right of a state to rule itself and those who live within its territory...unfettered by outside dictates or interference."[115] Broadly speaking, the non-intervention principle can be found in many international legal documents and "involves the right of every sovereign [s]tate to conduct its [domestic] affairs without outside interference,"[116] though specific language may vary. The principle is a well-accepted "customary rule of international law,"[117] meaning that it is widely recognized as binding law—even without a treaty.[118]

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[110] *See* Simon McCarthy-Jones, *The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century*, 2 Frontiers A.I. 1, 5–6 (2019).
[111] *Id.* at 5 (quoting Stanley v. Georgia, 394 U.S. 557, 564 (1969)).
[112] *Id.* at 5–6.
[113] For example, in the United States, the Bill of Rights protects freedom of thought. *Id.* at 2.
[114] *What Is International Law?*, COUNCIL ON FOREIGN REL. (July 25, 2023), https://education.cfr.org/learn/reading/what-international-law#:~:text=Source:%20Reuters,to%20hold%20their%20governments%20accountable.
[115] Douglass Cassel, *A Framework of Norms: International Human-Rights Law and Sovereignty*, 22 HARV. INT'L R. 60, 60 (2001).
[116] Jianming Shen, *The Non-Intervention Principle and Humanitarian Interventions Under International Law*, 7(1) INT'L LEGAL THEORY 1, 6 (2001).
[117] *Id.*
[118] *Customary IHL*, INT'L COMM. OF THE RED CROSS, https://www.icrc.org/en/law-and-policy/customary-ihl#:~:text=Why%20is%20customary%20international%20law,%2C%20as%20such%2C%20are%20binding (last visited Oct. 27, 2024).

1. Sources Prohibiting Intervention

First, the non-intervention principle can be found in Articles 2(4) and 2(7) of the United Nations (UN) Charter,[119] as well as in the Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, a UN General Assembly document.[120] The non-intervention principle states that "[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the [p]urposes of the United Nations."[121] Although the principle focuses on conventional military threats and force, some scholars argue that cyber actions are considered a use of force, since there is a "possibility that massive harm [can also] be perpetuated in cyberspace, rather than physical space."[122]

The Declaration on the Inadmissibility of Intervention in the Domestic Affairs of States and the Protection of Their Independence and Sovereignty, which is another UN General Assembly Declaration, as well as Principle VI of the Helsinki Final Act,[123] adjusts this language and explicitly prohibits all forms of intervention "in the internal and external affairs of any other [s]tate."[124] It also clarifies that all states must respect the "independence of peoples and nations" with "absolute respect for human rights and fundamental freedoms."[125]

2. Application to Technology Use

Challenges arise in applying these sources, though, as none explicitly mention whether they apply to the use of technology. Fortunately, a subsequent document—the Tallinn Manual—was drafted to clarify that the principle of non-intervention and the broader principle of sovereignty apply to contexts involving technology.[126] The Tallinn Manual is "an influential resource for legal advisers and policy experts dealing with cyber issues."[127] It explains that "[t]he [p]rinciple of [s]overeignty applies to

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[119] U.N. Charter art. 2.
[120] G.A. Res. 25/2625, Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations (Oct. 24, 1970). The language in this document states that "[e]very [s]tate has the duty to refrain in its international relations from the threat or use of force against the territorial integrity or political independence of any [s]tate."
[121] U.N. Charter art. 2, ¶ 4.
[122] *See* Matthew C. Waxman, *Cyber Attacks as "Force" Under UN Charter Article 2(4)*, 87 INT'L LAW STUD. 43–45 (2011); *Use of Force in Cyberspace*, CONG. RSCH. SERV. (June 25, 2024), https://sgp.fas.org/crs/natsec/IF11995.pdf.
[123] The only difference between the two sources is that the Helsinki Final Act adds the words "falling within the domestic jurisdiction" after "affairs." Conference on Security and Co-Operation in Europe Final Act (1975), art. 6, ¶ 1.
[124] G.A. Res. 20/2131, Declaration on the Inadmissibility of Intervention in the Domestic Affairs of States and the Protection of Their Independence and Sovereignty, art. 1 (Dec. 21, 1965).
[125] *Id.* at art. 6.
[126] *See The Tallinn Manual*, CCDCOE, https://ccdcoe.org/research/tallinn-manual (last visited Oct. 27, 2024).
[127] *Id.*

cyberspace,"[128] and that a "[s]tate must not conduct cyber operations that violate the sovereignty of another [s]tate."[129]

Notably, intervention only applies to states, not non-state actors or individuals.[130] Thus, if a state actor used deepfakes, bots, or social media algorithms to disseminate disinformation or malinformation, this could be seen as a form of intervention. While there is no precise definition of what qualifies as an internal affair that cannot be intervened with, the "conduct of national elections" is generally regarded as one.[131] Because using technology in this manipulative way could sway another country's public opinion, lead to distrust in government, or influence a country's elections or economy, this could be viewed as undermining state sovereignty.[132]

B. United Nations Cyber Norms

In addition to the non-intervention principle, non-binding UN Cyber Norms establish other guidelines for international conduct when using technology. In 2021, the UN Open-Ended Working Group (OEWG) established "a framework for responsible state behavior in cyberspace," formalizing norms developed earlier by the UN Group of Governmental Experts (GGE) in 2015.[133] Of the eleven norms they established, two are particularly relevant.

1. Stability and Security in Cyberspace

First, states are recommended to "[c]ooperate to increase stability and security in cyberspace."[134] Although the framework does not specify exactly what this should entail, it emphasizes that "practices that are acknowledged to be harmful or that may pose threats to international peace and security" should be avoided.[135] State actors spreading disinformation and malinformation online would likely violate this principle, as attempting to influence the views of another country's citizens are unlikely to lead to world peace. However, because this norm's language is so vague, states could easily fail to identify their malicious use of technology as something as extreme as a threat to international security, making them unlikely to cease their actions.

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[128] TALLINN MANUAL 2.0 ON THE INTERNATIONAL LAW APPLICABLE TO CYBER OPERATIONS 11 (Michael N. Schmitt ed., 2013) [hereinafter TALLINN MANUAL]; Eric Talbot Jensen, *The Tallinn Manual 2.0: Highlights and Insights*, GEO. J. INT'L LAW 735, 741 (2017).
[129] TALLINN MANUAL, *supra* note 128, at 17 r. 4; Jensen, *supra* note 128.
[130] *See* Jianming Shen, *The Non-Intervention Principle and Humanitarian Interventions Under International Law*, 7(1) INT'L LEGAL THEORY 1, 6 (2001).
[131] *Prohibition of Intervention*, CYBER LAW TOOLKIT, https://cyberlaw.ccdcoe.org/wiki/Prohibition_of_intervention#cite_note-:PI0-2 (last visited Nov. 30, 2024).
[132] *See* Michael Wood, *Non-Intervention (Non-interference in Domestic Affairs)*, PRINCETON UNIV.: ENCYCLOPEDIA PRINCETONIENSIS, https://pesd.princeton.edu/node/551 (last visited Nov. 27, 2024).
[133] James Andrew Lewis, *Creating Accountability for Global Cyber Norms*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 23, 2022), https://www.csis.org/analysis/creating-accountability-global-cyber-norms.
[134] Bart Hogeveen, *The UN Cyber Norms: How Do They Guide the Responsible Development and Use of Offensive Cyber Capabilities?*, 7 CYBER DEF. REV. 123, 124 (2022).
[135] G.A. Res. 70/237, Developments in the Field of Information and Telecommunications in the Context of International Security (2015).

2. Respect Human Rights Online

States are also recommended to "[r]espect human rights...online."[136] This norm specifically mentions that the rights to privacy and freedom of expression should be protected, yet it does not mention the right to freedom of thought.[137] Although acknowledging that human rights can be infringed upon through technology demonstrates progress, a major shortcoming becomes clear upon closer examination. Spreading disinformation and malinformation arguably does not violate the rights to privacy or expression, as these actions do not prevent individuals from acting freely online, but rather expose them to deceptive content and propaganda. This suggests the need for a new document to address the issue in a more effective way.

C. Issues with Current Law

Evidently, these treaties, conventions, and principles of customary law each fall short in addressing the problem of disinformation and malinformation being spread online. First, most sources focusing on principles of non-intervention or sovereignty fail to address their application to modern-day technology.[138] Although the Tallinn Manual does eventually address this,[139] a major issue remains unresolved—it does not link these actions to the human rights violation it constitutes: an infringement on freedom of thought.

Additionally, UN cyber norms serve merely as a framework, offering suggestions rather than binding international law.[140] Even beyond this limitation, their language is overly vague, lacking specificity regarding what would constitute a violation of the norms or what actions states can take to implement the norms.[141] Moreover, these sources provide no mechanism for individuals to seek recourse if their rights are violated and impose on states no accountability to uphold these principles. Since they are not required to publicly sign or ratify these documents, states lack a tangible obligation to abide by these principles.

Considering these issues, it is apparent that a new document is needed to address these concerns—ideally, this document would be a binding agreement that (1) explicitly recognizes the use of technology to manipulate or influence one's thoughts as a violation of the right to freedom of thought, (2) outlines what states should do to prevent such infringements from occurring, and (3) implements a better way to hold states accountable.

III. PROPOSED SOLUTION

Although many scholars and organizations have attempted to clarify the right to freedom of thought and establish guidelines for the online conduct of state actors, their efforts have not brought about sufficient meaningful change—perhaps due to their

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136 Hogeveen, *supra* note 134, at 124.
137 G.A. Res. 70/237, *supra* note 135.
138 *See* discussion *supra* Part II(A)(1).
139 *See* discussion *supra* Part II(A)(2).
140 *See* discussion *supra* Part II(B).
141 *Id.*

failure to connect the two.[142] To remedy this, a Third Optional Protocol to the ICCPR should be adopted, declaring that technology can be used to violate freedom of thought, as this right includes the right to base one's thoughts on truthful information. The Protocol should require each state party to refrain from using technology to infringe on the right to freedom of thought and ensure that individuals within their jurisdictions who believe their right to freedom of thought has been violated through technology have access to domestic legal remedies, and, if necessary, consideration by the Human Rights Committee.

A. Process for Adopting Optional Protocols

Optional Protocols are "additional treaties that provide further rights or processes" to the ICCPR.[143] As its name suggests, these Protocols are not mandatory and are only binding upon the states who "become[] a party to the Protocol."[144] If a state party to the Protocol violates its requirements, "any person subject to the jurisdiction of the [s]tate party may lodge a complaint with the Human Rights Committee."[145]

There are currently two Optional Protocols to the ICCPR.[146] The First Optional Protocol, which was adopted in 1976, "sets out a system by which the Human Rights Committee can receive and consider complaints from individuals who allege that their human rights have been violated."[147] The Second Optional Protocol was adopted in 1991 and aims to abolish the death penalty for states who adopt the Protocol.[148]

Optional Protocols are added by the same lengthy process any international treaty would go through.[149] The treaty must first be drafted, and then opened for signature by UN member states.[150] When a state signs, it "express[es] its consent to be bound by the treaty" until its ratification,[151] which typically involves approval by each state's legislative body.[152] After this occurs, states that have ratified the treaty are required to implement its provisions in good faith.[153]

B. Creating a Third Optional Protocol

To ensure the effectiveness of a Third Optional Protocol to the ICCPR, the following language should be included.

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[142] *See* Sjors Ligthart, Christoph Bublitz, Thomas Douglas, Lisa Forsberg & Gerben Meynen, *Rethinking the Right to Freedom of Thought: A Multidisciplinary Analysis*, 22 HUM. RTS. L. REV. 1, 2 (2022).
[143] *International Covenant on Civil and Political Rights (ICCPR)*, EQUAL. & HUM. RTS. COMM'N (Apr. 10, 2024), https://humanrightstracker.com/en/un-treaty/iccpr.
[144] U.N. Human Rights Committee, Background to the International Covenant on Civil and Political Rights and Optional Protocols, https://www.ohchr.org/en/treaty-bodies/ccpr/background-international-covenant-civil-and-political-rights-and-optional-protocols (last visited Nov. 27, 2024).
[145] *Id.*
[146] *Id.*
[147] *Id.*
[148] *Id.*
[149] *See* U.N. OFFICE OF LEGAL AFFAIRS, TREATY HANDBOOK, U.N. Sales No. E.12.V1 (2013).
[150] *See id.*
[151] *Id.* at 5.
[152] *See id.* at 5, 9.
[153] *See, e.g.*, Vienna Convention on the Law of Treaties art. 26, May 23, 1969, 1155 U.N.T.S. 331.

1. Preamble

> The States Parties to the present Protocol,
> Recognizing that advancements to technology and the rapid spread of information have impacted individuals' ability to form their thoughts based on accurate information,
> Realizing that the right to freedom of thought should include the right to base one's thoughts on truthful information,
> Recalling article 18 of the Universal Declaration of Human Rights, adopted on 10 December 1948, and article 18 of the International Covenant on Civil and Political Rights, adopted on 16 December 1966,
> Desirous to undertake hereby an international commitment to put an end to manipulation of one's thoughts through technology,
> Have agreed as follows:

The Third Optional Protocol would begin with a preamble clearly outlining the underlying principles and reasons for adopting this treaty. Highlighting how technological advancements can impact an individual's ability to form independent thoughts before detailing the Protocol's requirements would help establish the connection between freedom of thought and technology. Furthermore, explicitly confirming that the right to freedom of thought includes the right to base one's thoughts on truthful information would define the right's scope more clearly, providing it a tangible requirement and noting that the right can be violated when one's thoughts are subject to manipulation.

2. Article 1: Scope of Application

> This Optional Protocol applies to the use of digital technologies, including artificial intelligence, algorithms, automated bots, and other behavioral targeting mechanisms, that affect freedom of thought as protected under article 18 of the International Covenant on Civil and Political Rights.

The first article should define the Optional Protocol's scope of application. By specifying what "digital technologies" may include, it would ensure states are aware that any technology affecting freedom of thought falls under its scope. Additionally, providing examples of the different types of technologies that are likely to infringe on freedom of thought would help states understand what the Protocol may apply to. This article intentionally does not provide a comprehensive list of every qualifying technology, with hopes that in the future, it can adapt to new technological advancements that may also threaten the right to freedom of thought.

3. Article 2: Restrictions and Requirements

a. No State Party shall use digital technologies to infringe on their citizens' freedom of thought or the freedom of thought of citizens of other nations.
b. Each State Party shall take appropriate measures to prevent digital technologies from being used to infringe on their citizens' freedom of thought or the freedom of thought of other nations.

The first paragraph of the second article should prohibit states party to the Protocol from using technology to violate the freedom of thought of their own citizens

or those of other nations. While it may seem some states could be reluctant to adopt the Protocol if it restricts their ability to spread disinformation and malinformation to citizens of other countries in addition to their own citizens, this is likely not the case. Countries that spread such propaganda typically desire favorable opinions from everyone—especially their own citizens.[154] Thus, these states would likely not be further deterred by the seemingly additional requirement of refraining to use technology to affect the freedom of thought of individuals in other nations.

The second paragraph should expound on the previous one, not only requiring states themselves to refrain from using technology to infringe on freedom of thought, but also requiring them to take measures to prevent others from using technology to infringe on this right. This would prevent states who spread disinformation and malinformation from passing the blame or responsibility to other parties, such as non-state actors or tech companies.

Although only requiring "appropriate measures" may seem too vague, this flexibility is deliberate, as it allows nations to decide for themselves the actions they will take to best comply. Doing so would ideally deter nations from resisting adoption of the Protocol simply because it has overly strict or costly requirements, much like the approach other international treaties seem to have taken.[155]

4. Article 3: Remedies and Enforcement Mechanisms

a. Individuals who believe their right to freedom of thought has been infringed upon through technology must have access to legal remedies within their country.
b. With respect to the States Parties to the first Optional Protocol to the International Covenant on Civil and Political Rights adopted on 16 December 1966, the competence of the Human Rights Committee to receive and consider communications from individuals subject to its jurisdiction shall extend to the provisions of the present Protocol, unless the State Party concerned has made a statement to the contrary at the moment of ratification or accession.

Finally, the third article should outline the remedies available to individuals who believe their rights have been violated and detail how this would be enforced. The Protocol would be ineffective if it did not ensure that victims have access to domestic legal remedies, as this would prevent individuals from receiving help when their right to freedom of thought is infringed upon.

Affirming that victims may submit complaints to the Human Rights Committee if legal remedies within their countries are insufficient would ensure the UN is aware of states that may be violating this right. Notably, this paragraph borrows the exact language from Article 5 of the Second Optional Protocol.[156] This approach would

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[154] *See* Bianca Ortiz-Miskimen, *Online Political Manipulation Efforts Persist in Russia, China, and the Middle East*, PRINCETON SCH. OF PUB. & INT'L AFFS. (Aug. 10, 2020), https://spia.princeton.edu/news/online-political-manipulation-efforts-persist-russia-china-and-middle-east.

[155] There are many examples of "soft language" in international treaties. *See, e.g.*, G.A. Res. 2200A (XXI), International Covenant on Civil and Political Rights, art. 2, ¶ 2 (Dec. 16, 1966).

[156] G.A. Res. 44/128, Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the abolition of the death penalty, art. 5 (Dec. 15, 1989).

ensure consistency across the Optional Protocols and enhance clarity for a state's citizens and governments.

C. Policy Considerations

By drafting and adopting this Third Optional Protocol, international law governing the use of technology in relation to freedom of thought would be consolidated in one binding document, resolving the current fragmentation of treaties, customary law, and other sources that fail to address the entire problem on their own. Moreover, by linking the right to freedom of thought with disinformation and malinformation, countries would be encouraged to recognize their actions as a violation of freedom of thought and, ideally, reconsider their behavior.

Though adopting another Optional Protocol—something that has not been done since 1989[157]—may seem like an unimportant, time-consuming, or daunting task, it is crucial that action is taken now. Doing so will ensure that as technology continues to become more advanced, future generations will be protected from its misuse by state actors, other individuals, or companies to influence freedom of thought.

CONCLUSION

The intentional spread of disinformation and malinformation by foreign state actors poses a major problem because countries fail to recognize it as the infringement it is—a violation of the right to freedom of thought. A Third Optional Protocol, as suggested, would hold states accountable for their spread of disinformation and malinformation and provide individuals with solutions when they believe these rights have been infringed on. By implementing this Protocol, the world can make significant progress toward safeguarding the right to freedom of thought as technology becomes increasingly more advanced.

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[157] *Id.*

AN ANALYTICAL STUDY OF FEDERATED LEARNING-ENHANCED NATURAL LANGUAGE PROCESSING FOR PRIVACY-CENTRIC NATIONAL CYBERSPACE ID AUTHENTICATION

Zihan Zhang*

Abstract: The rapid growth of digital technology has amplified concerns about data privacy and cybersecurity, necessitating innovative solutions to protect personal information. This study explores the potential of Federated Learning (FL) to enhance privacy-focused national Cyberspace ID authentication. Recently, China put forward an initiative to utilize Cyberspace ID to address data privacy concerns, which has caused a heated debate about the legal and technological credibility of this project. To enable a better understanding of the possible risks and significance of Cyberspace ID, this essay first examines the legal landscape of data privacy, comparing frameworks such as the GDPR, U.S. sectoral laws, and China's cybersecurity policies. After that, this essay advocates for a possible solution to enhance Cyberspace ID system resilience by implementing Federated Learning algorithms and discusses how this aligns with the legal regulations. This interdisciplinary analysis highlights the potential of Federated Learning to advance cybersecurity and data privacy in the digital age.

Keywords: Data Privacy; Federated Learning; GDPR

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INTRODUCTION

The growth of digital technology has accelerated social, economic, and cultural developments but also brings complex ramifications for human rights that require careful consideration [1]. As data is becoming the centric resource of the digital economy and information society, data privacy and personal data protection have become increasingly significant. Digital footprints created by online activities, including social media interactions, internet searches, and online transactions, can be utilized to recognize, comprehend, and forecast unique behavioral patterns in people, putting individual privacy frequently at risk. In addition, data privacy issues are interconnected with cybersecurity. Personal data breaches may lead to fraudulent activities and criminal actions. In order to effectively manage the growing number of digital threats to human rights, it is imperative that the right to privacy, which is guaranteed by Article 12 of the Universal Declaration of Human Rights [2], Article 17 of the International Covenant on Civil and Political Rights [3], and numerous other international and regional human rights instruments, be respected and protected [4]. For example, the General Data Protection Regulation (GDPR) put forward by the EU is the toughest privacy and security law in the world[5].

China is considering establishing the Cyberspace ID in order to protect data privacy and cybersecurity. The Cyberspace Administration of China and the Ministry of Public Security have released draft regulations that define Cyberspace ID as a series of encrypted numbers that serve as a user's identification for online authentication. Online service providers will no longer be able to access sensitive personal data and actual human identities since the national authentication platform will take over the authentication process and only return the identity verification findings. Evolved from real-name registration strategy in China, the initiative aims to protect citizens' personal information by implementing a trusted online identity strategy. The centralized data control approach, however, may increase the danger of data breaches, scalability issues, and Cyberspace ID re-identification.

Regarding the challenges that Cyberspace ID may face, this article will discuss how an advanced technological solution: Federated Learning (FL), can facilitate effective privacy protection by using a decentralized data processing method. Federated Learning is a distributed machine learning approach that collaboratively runs algorithms over several dispersed edge devices or servers while keeping the raw data on-device [6]. Google first proposed FL in 2016 to allow Android phone users to upgrade models locally without disclosing sensitive personal information[7]. After that, Google put in place an FL system designed to run federated average (FedAvg) algorithms on

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[1] Riduan Siagian et al., Human Rights in the Digital Era: Online Privacy, Freedom of Speech, and Personal Data Protection, 2 Journal of Digital Learning and Distance Education 513-523 (2023).
[2] Universal Declaration of Human Rights, G.A. Res. 217A (III), U.N. GAOR, 3d Sess., pt. I, U.N. Doc. A/810 (1948)
[3] International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 U.N.T.S. 171
[4] Office of the United Nations High Commissioner for Human Rights, *The Right to Privacy in the Digital Age* (Aug. 20, 2022), https://digitallibrary.un.org/record/3985679.
[5] Razieh Nokhbeh Zaeem & K. Suzanne Barber, The Effect of the GDPR on Privacy Policies: Recent Progress and Future Promise, 12 ACM Transactions on Management Information Systems (TMIS) 1-20 (2020).
[6] Jie Wen et al., *A Survey on Federated Learning: Challenges and Applications*, 14 International Journal of Machine Learning and Cybernetics 513-535 (2023).
[7] Id.

mobile devices. This system could be used to track statistics for large-scale cluster equipment without storing raw data on a cloud server. Since then, FL has emerged as one of the privacy computing industry's most concerning technologies. This article will discuss how FL can enhance the privacy protection of the Cyberspace ID system and conform with the data privacy regulations proposed by the current legal framework.

I. THE LEGAL LANDSCAPE OF DATA PRIVACY PROTECTION

Personal data (also used as "personal information") is the type of data that can not only be related to but also be used to recognize a specific individual[8]. The substantial factor of personal data is recognition, which emphasizes that anybody (not only the data controller) could adopt a rational methodology to recognize the identity of an individual[9]. The formal factor of personal data is digitally recorded and retrievable[10].

The lawful rights of personal data are closely related to the field of property rights and privacy rights, but with distinct focuses and characteristics as well. Based on the monetary value of personal data and their similar attributes with property rights, some scholars argue the rationality of recognizing anonymized non-identifiable data as intangible assets [11]. In addition, there are assumptions of introducing the concepts of inalienability, user-transfer restriction, and opt-in default to propertize personal data [12]. From another perspective, personal data also evolves people's understanding about privacy in the information society. William L. Prosser has categorized four types of privacy torts: intrusion upon seclusion, publicity given to private life, false light publicity, and appropriation of name or likeness [13]. However, these four torts are limited and narrow when facing information privacy issues. While the original concern about privacy is the subjective factor that the parties do not want to disclose, the concern about the identification of personal information is whether the specific individual can be recognized objectively and does not involve the subjective factor of the parties [14]. The right to personal information not only has the right of elimination but also has the right to know, the right to correct, the right to delete, the right to block, and other positive functions that privacy rights do not have[15].

The legal protection of personal information shows different characteristics across jurisdictions. In the U.S. legal system, personal information protection extends from the right to privacy. Alan F. Westin first defined the right to informational privacy as the right of a natural person to decide when, how and to what extent personal information will be disclosed to others[16]. This theory is strengthened by the case of Whalen v. Roe (1977), in which the Supreme Court extended the substantive due process protections of privacy to encompass informational privacy, thereby affirming

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[8] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, 1995 O.J. (L 281) 31.
[9] Yuan He, *Data Law* 32-44 (1st ed. 2020).
[10] Id.
[11] Feng Xiong et al., Recognition and Evaluation of Data as Intangible Assets, 12 Sage Open 1-13 (2022).
[12] Paul M Schwartz, *Property, Privacy, and Personal Data*, 117 Harvard Law Review 1-10 (2020).
[13] William L. Prosser, *Privacy*, 48 California Law Review 389 (1960).
[14] Yuan He, *Data Law* 32-44 (1st ed. 2020).
[15] Id.
[16] Alan F Westin, *Privacy and Freedom* 7 (1st ed. 1967).

an individual's right to manage their personal information disclosure[17]. Consequently, the U.S. personal data protection framework has advanced from the scope of privacy to informational privacy, and then transformed to the constitutional right to informational privacy through the Federal Supreme Court's judicial interpretations of provisions of the Bill of Rights Act of the Constitution (He 2020). In addition to this bottom-up development process of personal information law, the United States common law legal system also features a sector-specific data protection that ranges from health, education, to finance, accompanied by consumer protection laws such as the California Consumer Privacy Act (CCPA)[18]. For example, the Health Insurance Portability and Accountability Act (HIPAA) is a federal law that regulates the privacy of health information and clarifies financial penalties according to the level of culpability and types of violations[19]. In 2013, a malicious employee from Montefiore Medical Center, a non-profit hospital system, unlawfully accessed the medical records of 12,517 patients, copied their information and sold them to identity thieves[20]. Montefiore Medical Center was investigated and determined "failed to conduct an accurate and thorough risk analysis of the potential risks and vulnerabilities to the confidentiality, integrity, and availability of ePHI; failed to implement procedures to review records of activity in information systems, and failed to implement hardware, software, or procedural mechanisms to record and examine activity in the information system"[21]. Montefiore was eventually fined $4.75 million in 2024 and monitored to implement a corrective action plan[22]. The case of Montefiore indicates how sectoral laws implement the principles of processing personal data lawfully, ensuring fairness, and maintaining transparency within a specific sector. However, the U.S.' multifaceted landscape of data privacy protection law is also doubted by lacking a comprehensive federal data privacy law and therefore relying on a mix of federate and state law, leading to fragmented consent requirements, data breach notifications, and enforcement and penalties[23].

The data privacy protection landscape of EU members is different from the United States for bearing hybrid features of Common Law and Civil Law. The German legal system of personal data protection stems from the extension of general personality rights instead of the right to privacy. The German Federal Constitutional Court has interpreted Article 1, paragraph 1, of the German Basic Law, the "Human Dignity Clause", and Article 2, paragraph 1, of the German Basic Law, the "Free Development of the Personality", to give specific content to informational self-determination: the "general personality right" of the German Basic Law includes the protection of personal data from unrestricted extraction, storage, and continued transmission[24]. This fundamental right guarantees an individual the right to self-determination, disclosure, and use of their personal data only. Since then, the concept and term of informational

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17 Whalen v. Roe, 429 U.S. 589 (U.S. Supreme Ct. 1977).
18 Vivek Krishnamurthy, *A Tale of Two Privacy Laws: The GDPR and the International Right to Privacy*, 114 AJIL Unbound 26-30 (2020).
19 Seun Solomon Bakare et al., *Data Privacy Laws and Compliance: A Comparative Review of the EU GDPR and USA Regulations*, 5 Computer Science & IT Research Journal 528-543 (2024).
20 Steve Alder, *Malicious Insider Incident at Montefiore Medical Center Results in $4.75 Million HIPAA Penalty*, The HIPAA Journal, (Feb. 7, 2024).
21 Id.
22 Id.
23 Seun Solomon Bakare et al., *Data Privacy Laws and Compliance: A Comparative Review of the EU GDPR and USA Regulations*, 5 Computer Science & IT Research Journal 528-543 (2024). https://doi.org/ 10.51594/csitrj.v5i3.859.
24 Yuan He, *Data Law* 32-44 (1st ed. 2020).

self-determination have flourished in European legal thought and have emerged as one of the conceptual underpinnings of the right to personal data protection ensured by Article 8 of the Charter of Fundamental Rights of the European Union [25]. Consistent with the rationale of informational self-determination, the European Union put forward the General Data Protection Regulation (GDPR) in 2018, which is the toughest privacy and security law in the world and represents some key data protection principles: Lawfulness, fairness, and transparency; Purpose limitation; Data minimization; Accuracy; Storage limitation; Integrity and confidentiality; Accountability. GDPR also clarifies three participant roles: Data Subject, Data Controller, and Data Processor, and assigns obligations for these roles to abide by the data protection law[26]. GDPR grants data subjects explicit rights to access, the right to rectification, and the right to erasure. In addition, under the concept of data protection by design and by default, data controllers and processors are obliged to an implement privacy control framework throughout the process[27]. For example, Google was alleged and fined roughly $57 million by CNIL, the French Data Protection Authority, for violating GDPR regulations. Google was criticized for not obtaining users' consent to process data for advertisement personalization, not clearly revealing the purpose of utilizing users' data, and failing to carry out de-referencing of sensitive data, which violates the GDPR principles of lawfulness, fairness, and transparency; purpose limitation; and the data subject's right to be forgotten. As indicated by the case, the EU GDPR provides a comprehensive approach to data privacy protection, emphasizes explicit consent and grants individuals a robust right to withdraw. Different from U.S. privacy law that places the default position of the law as "permit", GDPR presumes the default position of the law as "prohibit" and requires lawful consent from the users before the personal data may be collected, used, or disclosed[28]. Therefore, even though there is criticism about the ineffectiveness of GDPR in terms of its limited material scope[29], GDPR still represents the toughest data privacy laws and forward-looking legal regulations in terms of data privacy protection, which evaluates the outcomes of other evolving personal data protection approaches.

II. PROPOSED CYBERSPACE ID SOLUTION IN DATA PRIVACY PROTECTION

A. Background: Cybersecurity Governance in China

Since 1994 when the Internet was introduced in China, China's cybersecurity policy development has generally undergone four stages each with distinct policy focuses[30]: (1) Initial stage (1994-1999): construction of Internet infrastructure; (2) Rapid development (2000-2004): multi-layered information service (3) Adjustment and

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[25] Florent Thouvenin, *Informational Self-Determination: A Convincing Rationale for Data Protection Law?*, 12 JIPITEC 246-256 (2021).

[26] Razieh Nokhbeh Zaeem & K. Suzanne Barber, The Effect of the GDPR on Privacy Policies: Recent Progress and Future Promise, 12 ACM Transactions on Management Information Systems (TMIS) 1-20 (2020).

[27] Seun Solomon Bakare et al., *Data Privacy Laws and Compliance: A Comparative Review of the EU GDPR and USA Regulations*, 5 Computer Science & IT Research Jounal 528-543 (2024).

[28] Vivek Krishnamurthy, *A Tale of Two Privacy Laws: The GDPR and the International Right to Privacy*, 114 AJIL Unbound 26-30 (2020).

[29] Michaela Padden & Andreas Öjehag-Pettersson, *Protected How? Problem Representations of Risk in the General Data Protection Regulation (GDPR)*, 15 Critical Policy Studies 486-503 (2021).

[30] Cyberspace Administration of China, *20 Years of China Internet: Cyber-Security* (1st ed. 2014).

optimization (2005-2013): information security (4) In-depth improvement (2014-now): "Cyber Power": the trend of integrating cybersecurity agenda with the agenda of national strategic development[31]. With the issuance of *National Cybersecurity Strategy* and *Chinese Cybersecurity Law* as important nodes, China views cybersecurity as a cornerstone of its national security, societal stability, and economic development.

China's approach to balancing individual rights and state power in the realm of cybersecurity and data governance differs from those in the EU and the U.S. The EU emphasizes individual rights and data protection, as exemplified by the GDPR. The GDPR enforces strict rules on data collection, processing, and storage to prioritize individual privacy over state control, reflecting a rights-based governance model. The U.S. adopts a decentralized, market-driven approach to data security by using a patchwork of federal and state laws rather than a unified framework like the GDPR. This approach leaves much of the responsibility to private companies and emphasizes economic freedom. In contrast to EU and U.S., China's governance model features state-centric control. From the Chinese government's perspective, cybersecurity is not only about protecting individuals but also about maintaining control over the cyberspace, which includes preventing the misuse of digital platforms for disinformation, dissent, or other activities perceived as threats to state security.

Due to the different emphasis on individual rights and public power, China's cyberspace protection methods differ from those of the EU and U.S., which derive the concept of personal data privacy from the right to privacy, but evolve the physical identity card to the real-name authentication in cyberspace. In order to promote a safer and healthier Internet and safeguard the public interest and social order from unlawful content, including libel, fraud, pornography, rumors, and vulgarity, Chinese national legislation has mandated since 2012 that the majority of online service providers use real-name registration[32]. According to the law entitled Decision of the Standing Committee of the National People's Congress on Strengthening Online Information Protection, network operators should require users to provide real identity information when providing corresponding network services[33], which elevates China's real-name policy to the level of national law. Chinese individuals typically give identity verification to online platforms in the form of mobile phone number verification because these numbers must be obtained and linked to a real name. As a result, the telecom operator controls the actual identity information, which other links' network services may utilize inadvertently for verification.

Although China's real-name registration policy aims to safeguard cybersecurity, it may be critiqued for harming individuals' privacy. Anonymity is a form of privacy protection that allows people to speak freely without having to submit to public identification. From another perspective, personal data privacy can be invaded by anonymous net citizens when they enjoy the freedom to express themselves with a low

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[31] Zhengrong Li et al., *A Study of Chinese Policy Attention on Cybersecurity*, 69 IEEE Transactions on Engineering Management 3739-756 (2022).

[32] Jyh-An Lee & Ching-Yi Liu, *Real-Name Registration Rules and the Fading Digital Anonymity in China*, 25 Washington International Law Journal 1-33 (2016).

[33] Quangguo Renda Changweihui Guanyu Jiaqiang Wangluo Xinxi Baohu De Jueding [Decision of the Standing Committee of the National People's Congress on Strengthening Online Information Protection] (promulgated by the Standing Comm. Nat'l People's Cong., Dec. 28, 2012, effective Dec. 28, 2012), art. 6, (China), http://www.gov.cn/jrzg/201212/28/content_2301231.htm

sense of accountability[34]. The balance of personal data privacy and general governance of cybersecurity is a critical issue in China that requires careful consideration. Therefore, evolving from the background of real-name registration, Cyberspace ID tries to strike a more proper balance.

B. Mechanisms of Cyberspace ID

From the technology offering perspective, cyberspace ID uses both static and dynamic authentication methods to safeguard personal data privacy. The authentication process comprises three different entities: the claimant, the monitor, and the information system[35]. For Cyberspace ID, citizens would be the claimant who authenticates to the system in order to use the service. The national authentication app would be the monitor that checks the claimant's identity. Apps and online platforms would be the information systems that provide the services if the monitor correctly authenticates the claimant. In addition, the Cyberspace ID combines the usage of static and dynamic authentication protocols. While static authentication relies on fixed credentials for identity verification, dynamic authentication uses changing or one-time credentials to enhance security and reduce the risk of unauthorized access [36]. Cyberspace ID is a fixed set of generated numbers that are not associated with the identity information but can be matched with the individual. The static number can be displayed or reported when online service providers require to confirm that an individual is a user with authentic identity through the feedback of the national authentication platform. In offline scenarios, Cyberspace ID will adopt a dynamic authentication method by randomly generating dynamic two-dimensional code for identity verification to avoid screenshots and identity fraud.

The issuance of Cyberspace ID could advance the protection of personal data privacy compared with the current real-name registration system in China. Firstly, it centralizes the authentication process from telecom operators and online platforms to a national authentication platform. Online platforms only receive the identity authentication result instead of the actual identity of users, avoiding issues with online service providers collecting personal data beyond scope or retaining data for longer than required. It safeguards individuals' data privacy by ensuring data minimization, purpose limitation, and storage limitation. Secondly, compared with real-name registration, Cyberspace ID is not associated with the identity information of individuals. Generally, when analyzing user data to derive user behavioral characteristics, what Internet platforms and enterprises derive is only the behavioral characteristics themselves (some mathematical vectors) and cannot be backtracked to a specific individual. Even if it corresponds to an individual, it will only correspond to the cyberspace ID rather than the original identity information (e.g., ID card number, and biometrics information). Thirdly, compared to using phone numbers to trace back identity, Cyberspace ID is a more trustworthy verification certificate. In China, many telecom fraud gangs buy mobile phone numbers to open a large number of online accounts or registered companies for fraudulent purposes. If these online accounts are opened through a Cyberspace ID rather than tied to a phone number, it could curb

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[34] Jyh-An Lee & Ching-Yi Liu, *Real-Name Registration Rules and the Fading Digital Anonymity in China*, 25 Washington International Law Journal 1-33 (2016).

[35] Syed Zulkarnain Syed Idrus et al., *A Review on Authentication Methods*, 7 Australian Journal of Basic and Applied Sciences 95-107 (2013).

[36] Id.

telecom fraud and raise the cost of crime.

However, there remain risks and challenges to implementing cyberspace ID. Firstly, there are inherent privacy risks of centralized governance of Cyberspace ID. In a centralized system, all data is stored in a single repository and under the control of one authority, which is more vulnerable to malicious attacks and a single point of failure. Centralized systems may also face scalability issues and struggle to handle billions of users efficiently. Secondly, threats of re-identification from Cyberspace ID remain. Even if cryptography is employed, there are still chances that personal information could be re-tracked by certain techniques. Users may be sorted into different target groups and be bothered by unethical advertisements. More severely, sensitive personal data can be leaked.

III. FUTURE ADVANCEMENT OF CYBERSPACE ID: DECENTRALIZED DATA PRIVACY GOVERNANCE

Decentralized data systems offer enhanced data privacy compared with centralized data systems. Instead of depending on a single central repository, decentralized data systems are made to disperse data processing and storage among several sites or nodes[37]. The distributed control of data empowers data subject to manage their data. By enforcing granular access controls, users can determine who can access their data and under what conditions[38]. This reduces the risk of unauthorized access and data breaches.

Apart from privacy concerns, decentralized data systems feature a stronger security proof. Decentralized systems lessen the possibility of a single point of failure by distributing data among multiple nodes. The overall system is improved since the remaining network continues to function even if one node is compromised or fails. In addition, mechanisms like consensus algorithms and encryption techniques are frequently incorporated into decentralized systems to guarantee that data is transparent and impenetrable[39]. Users' trust is strengthened since participants can confirm transactions and data integrity without having to rely on a central authority[40].

Therefore, in the context of Cyberspace ID, the proposed centralized data governance system can be enhanced into a decentralized method. However, decentralized data governance may lead to another problem: the fragmentation of databases ("data silos") and the inefficiency of conducting user behavior analysis. Being closely related to the field of psychology, behavioral analysis initially centered on the study of human behavior, applying scientific methods to comprehend human conduct[41]. IT companies aggregate a large amount of data and derive general users' behavior patterns to drive decisions. These companies may also gather data across

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[37] Moritz Platt, Ruwan J. Bandara, Andreea-Elena Drăgnoiu, & Sreelakshmi Krishnamoorthy, Information Privacy in Decentralized Applications, in Trust Models for Next-Generation Blockchain Ecosystems (Muhammad Habib ur Rehman et al. eds., EAI/Springer Innovations in Communication and Computing, 2021).

[38] Id.

[39] Id.

[40] Haleh Asgarinia et al., *"Who Should I Trust with My Data?" Ethical and Legal Challenges for Innovation in New Decentralized Data Management Technologies*, 14 Information 351 (2023).

[41] Alejandro G. Martin et al., *A Survey for User Behavior Analysis Based on Machine Learning Techniques: Current Models and Applications*, 51 Applied Intelligence 6029-6055 (2021).

different platforms to develop user portraits and provide targeted advertisements. If the data are controlled in a decentralized manner, integrating information to derive meaningful insights will become more challenging. To address this, Federated Learning (FL), a new technique in the field of NLP, could possibly balance privacy protection and user behavior analysis demand, contributing to the general cybersecurity issue and advancing Cyberspace ID deployment.

IV. FEDERATED LEARNING IN DECENTRALIZED PRIVACY PROTECTION AND USER BEHAVIOR ANALYSIS

Federated Learning is a distributed collaborative learning approach that enables joint modeling while safeguarding data privacy and security[42]. FL allows algorithms to be executed and trained on local nodes such as smartphones, laptops, and wearable devices, using local datasets stored only on that single device[43]. Every device first downloads a global model for local training, then refines the downloaded global model through several local training using individual device data, uploading the associated gradient information to the cloud, which then combines the averaged updates of local models to create a new global model that is sent back to the devices. This iterative process is repeated until the model reaches the target performance level. This assembles playing a Pictionary game. Each player (device) draws interpretations of user behaviors and shares drawings (parameters) with a guesser (central server). The guesser can aggregate drawings and make guesses without knowing the original prompt (user behavior data). Instead of transmitting the original user data to a central server, only the training results (the parameters) would be exchanged and used to calculate the global model in Federated Learning, which greatly protects privacy[44]. In general, Federated Learning advances machine learning by keeping the raw data in-device and extends the boundary of distributed learning as it could work with unbalanced and non-independent identically distributed data (non-IID)[45]. In this case, Federated Learning is a cross-disciplinary technique of computer science that enables data privacy and data sharing for decentralized devices.

Federated Learning could safeguard privacy while satisfying the need for user behavior analysis in a decentralized method. Different from centralized governance of Cyberspace ID stored and processed by the national authentication platform, a Federated-Learning-enhanced Cyberspace ID can function well in a decentralized method. By leveraging the computational power of user devices, identity verification and Cyberspace ID number can be generated on-device. In addition, information about user behaviors and interactions with online services could be gathered to train the local model and send updates to the central server, while the raw data are kept on-device and not revealed to the national authentication platform. In this case, the FL-enhanced Cyberspace ID system could derive insights from user behavior analysis, detect early threats from online platforms, and also safeguard personal privacy at the same time. For example, if multiple devices detect abnormal login patterns, the FL-trained model can learn from these patterns collectively without requiring centralized access to sensitive data. The re-identification risks of Cyberspace ID can also be lowered after iterative FL

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42 Id.
43 Id.
44 Nguyen Truong et al., *Privacy Preservation in Federated Learning: An Insightful Survey From the GDPR Perspective*, 110 Computers & Security 1-19 (2021).
45 Id.

training and early threat detection. This strategy aligns with the general principle of cybersecurity by ethically protecting personal data privacy from IT companies and authorities.

As an advanced privacy protection technique, Federated Learning could comply with most of GDPR regulations about data privacy protection. Given that Federated Learning only aggregates locally trained parameters for global model updates and cannot be exploited for other purposes, Federated Learning complies with the principles of "purpose limitation". The data are all on-device, aligning with the principles of "data minimization" "storage limitation" and "accuracy". The integrated security techniques in Federated Learning, such as Secure Aggregation, Homomorphic Encryption, and other secure communications protocols, fulfill the requirements of "integrity and confidentiality" and "accuracy". The remaining requirement that Federated Learning has difficulty satisfying is "fairness and transparency" because, like other deep learning algorithms, Federated Learning is operated in a black-box feature [46]. However, it is a common problem for machine learning that there is limited understanding and transparency of how certain decisions are made. In general, Federated Learning is an advanced technique that could balance dynamic big data analysis and data privacy regulations. For example, Google is the first one to propose Federated Learning to comply with GDPR regulations. Google uses this technology to enhance its ads deployment on search engines and content recommendations.

In addition, Federated Learning can fit for the data privacy protection in the U.S. legal framework. For example, Federated Learning can preserve data privacy in the healthcare industry and comply with sectoral data privacy regulations such as HIPAA. Traditionally, collaborative healthcare research requires establishing generalizability and external validity by sharing patient data between institutions, which can violate the patients' right to their healthcare data privacy[47]. In contrast, by utilizing Federated Learning, it is possible to train the local models of different healthcare centers respectively by keeping the standardized health record data on device[48]. In this case, without sharing raw ePHI with other institutes, Federated Learning lowers the risk of leaking healthcare data during the transmission process and protects the individuals' rights to "direct a covered entity to transmit to a third party an electronic copy of their protected health information in an electronic health record", and the rights to "request corrections" as regulated by the HIPAA privacy rules. Given the evidence from the healthcare industry, implementing Federated Learning in different sectoral settings can similarly comply with the U.S. data privacy legal framework.

V. CASE STUDY: HOTEL RESERVATION PLATFORM MASSIVE DATA BREACH

Prestige Software's main product Cloud Hospitality is a channel manager that connects online reservation websites (e.g. Booking.com and Expedia) with hotels' software to enable online management of room availability and vacancy. In 2020, Website Planet revealed that Prestige Software has been exposing highly sensitive data

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[46] Nguyen Truong et al., *Privacy Preservation in Federated Learning: An Insightful Survey From the GDPR Perspective*, 110 Computers & Security 1-19 (2021).
[47] Tyler J. Loftus et al., *Federated Learning for Preserving Data Privacy in Collaborative Healthcare Research*, 8 Digital Health 1-5 (2022).
[48] Id.

from millions of hotel guests worldwide since 2013[49]. It was estimated that around 24.4 GB of data and totaling 10 million files have been exposed, covering customer data ranging from PII (Personal Identifiable Information), reservation details, to credit card and payment details[50]. Based in Spain, an EU country, Prestige Software must follow the regulations of GDPR and may face legal actions and huge fines because as a data processor, it violates the terms of storage limitation, integrity, and accountability. The high severity of this incident indicates the potential flaws in personal information protection in cyberspace and represents the requirements of advanced data protection techniques.

This massive data breach represents the potential risks of cloud storage security. Cloud Hospitality connects with various hotel booking websites and stores the data on Amazon Web Services (AWS) S3 bucket which provides cloud-based data storage, and the data leakage results from the misconfiguration of the AWS S3 bucket. Cloud storage data security includes static storage security and dynamic storage security, representing the cloud storage server security and data transmission confidentiality respectively. Given that data is transmitted through the IP network in the cloud storage, the cloud storage system will also be vulnerable to traditional network security threats such as data destruction, data theft, data tampering, etc. Furthermore, in cloud storage systems, users' data may be dispersed among several servers, and multiple users may share one server, raising the danger of unwanted unauthorized access[51]. There are various techniques to safeguard data security for cloud storage. For example, data encryption technology (identity-based encryption, attribute-based encryption, and homomorphic encryption etc.), data loss prevention (DLP) tools, and multi-factor authentication (MFA) are all the regular methods used to protect data security[52]. However, the massive data breach of Cloud Hospitality indicates the instability and vulnerability of cloud storage despite these protections. Therefore, along with the rise of cloud computing, it requires advancements in data protection techniques to tailor to the trend of increasing data exchanges and transmissions among different online servers.

Federated Learning can be a possible solution for this requirement. In the case of Cloud Hospitality, the platform doesn't employ any encryption or other security protection methods before transmitting and storing the data into AWS S3 bucket, making it highly vulnerable and risky to data breach. In contrast, utilizing Federated Learning can lower the risks of data leakage even when the cloud storage platform is misconfigured because the raw data are kept on-device. All the training processes such as updating the booking status of the hotel's rooms and analyzing hotel customers' preferences can be fulfilled by using the raw data on the hotel's own software. Only the training results instead of raw data (national ID, credit card numbers, and reservation details) will be transmitted to Cloud Hospitality and the cloud storage platform for model updates. In this case, even if the cloud storage platform faces data leakages, only the parameters which are some mathematical vectors will be exposed, instead of putting sensitive personal data at risk. This approach also conforms with the GDPR principles,

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[49] Website Planet Security Team, *Report: Hotel Reservation Platform Leaves Millions of People Exposed in Massive Data Breach*, Website Planet (June 11, 2020), https://www.websiteplanet.com/blog/prestige-soft-breach-report/.

[50] Id.

[51] Pan Yang et al., *Data Security and Privacy Protection for Cloud Storage: A Survey*, 8 IEEE Access 131723-131737 (2020).

[52] Id.

especially in terms of data minimization and storage limitation.

The case of Cloud Hospitality echoes the current case of Cyberspace ID initiated by China's government. Hotels preserve vast amounts of personal data, especially those that are highly sensitive and relevant to personal privacy. The personal identifiable information and credit card payment details in the case of Cloud Hospitality align with the protection object of Cyberspace ID initiative. In addition, characteristics of cloud storage platforms also reflect the increasing requirements of advanced data protection among frequent data transmissions in multi-platforms. Thus, this case study indicates the potential of Federated Learning-enhanced natural language processing as a prospective technique in the field of privacy protection.

CONCLUSION

In the information era, one of the basic human rights: privacy has evolved into the requirement of personal information protection. Legal regulations revolving around data privacy protection have been put forward with distinctive characteristics. Recognizing the significance of data privacy protection and aligning with legal requirements, Cyberspace ID is put forward as a possible solution. However, a national authentication strategy itself couldn't safeguard data privacy and requires further advancement. In this case, Federated Learning is a prospective technique that could safeguard personal privacy in a decentralized data control manner of Cyberspace ID. Further research is required to delve deeper into the detailed mechanics of implementing Federated Learning into Cyberspace ID. Firstly, legal concepts about the parameters incurred in Federated Learning need to be defined and it requires legal analysis and case studies to investigate whether these mathematical vectors should be regarded as privacy data. In addition, further experiments need to be conducted to verify the feasibility and reliability of a Federated Learning-enhanced national authentication platform. There may be risks that user behavior analysis via Federated Learning can lead to re-identification of users and invalidate the cyberspace ID. It will be an advancement in cybersecurity if this cross-disciplinary field combining legal regulations and machine learning can successfully develop.

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