

The New Bailments

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The rise of cloud computing has dramatically changed how consumers and firms store their belongings. Property that owners once managed directly now exists primarily on infrastructure maintained by intermediaries. Consumers entrust their photos to Apple instead of scrapbooks; businesses put their documents on Amazon's servers instead of in file cabinets; seemingly everything runs in the cloud. Were these belongings tangible, the relationship between owner and intermediary would be governed by the common-law doctrine of bailment. Bailments are mandatory relationships formed when one party entrusts their property to another. Within this relationship, the bailees owe the bailors a duty of care and may be liable if they failed to return the property. The parties can use contract to customize the relationship but not to disclaim entirely.

Tracing the law of bailment relationships from its ancient roots to the present, this Article argues that cloud storage should be understood as creating a bailment relationship. The law of bailment, though developed in the Middle Ages, provides a robust framework for governing twenty-first century electronic intermediaries. Though the kind of stored property has changed, the parties' expectations and incentives have not. Yet the decline of litigation, the rise of arbitration, federal diversity jurisdiction, and the ever-growing dominance of contract has thus far prevented courts from applying the law of bailments to these new services.

Recognizing cloud storage as a bailment would have significant implications. Most immediately, it would suggest that important provisions in many cloud storage services' contracts are unenforceable. A hand-collected dataset of 61 cloud storage contracts, reveals that most have include general disclaimers for any liability for lost data. These disclaimers are inconsistent with the duty of care that is the foundation of the law of bailment. In addition, understanding cloud storage as a bailment would have important implications for both the law of consumer protection and Fourth Amendment protections.

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CONTENTS

INTRODUCTION 1

I. THE LAW OF BAILMENT4

A. A Brief History of Bailment5

B. Modern Bailments at Common Law9

C. The Breadth of the Bailment Relationship 12

II. STORING DIGITAL PROPERTY 19

A. The Basics of Cloud Storage 19

B. Electronic Files as Digital Property 20

C. Interference with Digital Property Rights 22

 1. Loss of Possession..... 22

 2. Loss of Exclusion..... 25

III. CLOUD STORAGE AS BAILMENT 25

A. Situating Cloud Storage in the Law of Bailment..... 25

B. Possession and Control..... 27

C. Cloud Storage and the Duty of Care 32

IV. EMPIRICAL ANALYSIS OF CLOUD STORAGE CONTRACTS . 39

A. Methodology and Limitations..... 39

B. Results and Analysis..... 40

V. COMPLICATIONS & IMPLICATIONS..... 41

A. The Missing Common Law 41

B. The Fourth Amendment 43

C. The Future of Ownership 47

CONCLUSION..... 47

INTRODUCTION

To have property is to need storage. Few of us keep all of our property in our literal possession at all times. It would be difficult to reap the benefits of private property if interests turned on actual possession. Storage solves this logistics nightmare. It allows owners to accumulate resources for future use and to preserve the past.

Storing property in the care of others complicates the situation. At common law, the doctrine of bailment covered transactions in which people delivered (*baillé*) property to others on the understanding that the recipients would later return the property.¹ The recipient of property becomes a bailee and the deliveror the bailor. The law of bailment determines who bears the risk of loss if the bailee cannot return the property in the condition received and supplies the procedural rules of who has the burden of explaining what happened to the property.² And finally, the law of bailment helps determine when third parties like creditors and law enforcement can access the property.

The modern doctrine of bailment has its roots in the Middle Ages, although the concept is much older than that.³ Bailment has evolved over time to accommodate new technologies, understandings of ownership, and legal procedures. The question animating this Article is whether the law of bailment can and should accommodate the latest of these shifts: the rise of digital assets and cloud storage. This question is important because although cloud storage was already growing rapidly before 2020 and exploded after the pandemic shifted many companies to remote work.⁴ Moreover, Justice Gorsuch has recently suggested that the answer to this question may determine whether the Fourth Amendment protects files stored on popular services like Gmail and Dropbox.⁵

From ocean liners to FedEx distribution centers, safe deposit boxes to dry cleaners, parking lots to lending between friends, bailments and their kin are everywhere. As a relationship—and bailments are fundamentally relationships—bailment is so common, and its basic rules so intuitive, that there is no need to think about the contours of the

¹ JOHN BAKER, INTRODUCTION TO ENGLISH LEGAL HISTORY 389 (Oxford University Press 4th ed. 2007). There are competing theories about whether contract or tort provides the best theoretical basis for bailment doctrine.

² See Edward Brodkey, *Practical Aspects of Bailment Proof*, 45 MARQ. L. REV. 16 (1962) (surveying the procedural rules of bailment).

³ See *infra* Part I.A.

⁴ Aaron Tilley, *A Cloud Surge Lifts Amazon, Microsoft and Google's Results*, WALL ST. J. (Jul. 31, 2020), <https://www.wsj.com/articles/big-businesses-multiyear-bets-fuel-cloud-growth-11596196893>; Angus Loten, *Cloud Spending Hits Record Amid Economic Fallout From Covid-19*, WALL ST. J. (Aug. 3, 2020), <https://www.wsj.com/articles/cloud-spending-hits-record-amid-economic-fallout-from-covid-19-11596494981>.

⁵ *Carpenter v. United States*, 128 S. Ct. 2206, 2268 (2019) (Gorsuch, J., dissenting).

relationship in most cases.⁶ Trust lies at the core of the bailment relationship.⁷ If you lend your bicycle to your roommate, you trust that she will take care of it while she has it and return it to you when you ask for it. Without that trust, you would, hopefully, not lend the bicycle. Bailment puts the force of law behind that trust, elevating it into a duty of care that the bailee owes the bailor. By giving trust the force of law, bailment is protective doctrine that transcends the traditional boundaries of contract, property, and tort.

Traditionally, the law of bailment has only applied to tangible goods in large part because it developed in a world with few intangibles and nothing approximating digital data.⁸ However, as people substitute digital goods for tangible goods, this limitation no longer makes sense. There is no agreed-upon term for these digital substitutes.⁹ For the sake of convenience, this Article uses the term “digital property” to refer to electronically stored files. These files may be property, even if their content is not.¹⁰ Indeed, digital property need not be “Property,” in the strong sense of the word. This Article will show that these files bear sufficient similarity to traditional chattel property, that the common-law doctrine of bailment should apply.¹¹

⁶ Thirty years ago, Richard Helmholz noted that bailments had received little scholarly attention since the 1930s. Richard H. Helmholz, *Bailment Theories and the Liability of Bailees: The Elusive Uniform Standard of Reasonable Care*, 41 KAN. L. REV. 41, 100 (1992). Despite remaining a common source of litigation in courts, the neither the common law of bailment has not received much scholarly attention since Helmholz’s observation. The notable exceptions are Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773, 811–20 (2001) and Christopher M. Newman, *Bailment and the Property/Contract Interface*, SSRN ELECTRONIC JOURNAL (2015). Earlier treatments of the doctrine are primarily historical. See Samuel Stoljar, *The Early History of Bailment*, 1 AM. J. LEGAL HIST. 5, 5 (1957); Joseph H Beale Jr., *Carrier’s Liability Its History*, 11 HARV. L. REV. 158 (1897). Statutory interventions in the law have also received little attention. For example, there is a whole article of the uniform commercial code, Uniform Commercial Code, UCC-7, on Documents of Title, that covers commercial bailment relationships under documents of title. Its revision in 2003 and prompt adoption in all 50 states plus the District of Columbia received virtually no attention in law reviews. See Uniform Law Commission, *UCC Article 7, Documents of Title*, <https://www.uniformlaws.org/committees/community-home?CommunityKey=9893636e-0046-498a-8ed9-3d57c192489a> (last visited Aug. 19, 2020).

⁷ *Coggs v. Bernard*, 92 Eng. Rep. 107, 109 (1703).

⁸ ALI–ELI Principles for a Data Economy–Data Rights and Transactions 6 (May 22, 2020) (“With the emergence of the data economy, however, tradeable items often cannot readily be classified as such goods or rights, and they are arguably not services. They are often simply ‘data.’”).

⁹ Some commentators refer to these files as “digital assets.” See Natalie M. Banta, *Property Interests in Digital Assets: The Rise of Digital Feudalism*, 38 CARDOZO L. REV. 1099, 1105–8 (2017) (arguing that digital asset contracts reveal an assumption that users of email, social media, and other services have some form of property that the contract modifies).

¹⁰ See Joshua A. T. Fairfield, *Appetite for Destruction: Symbolic and Structural Facets of the Right to Destroy Digital Property The Washington and Lee Law Alumni Association Student Notes Colloquium*, 74 WASH. & LEE L. REV. 539, 548 (2017) (“Even if data itself is not property, the digital boxes that contain it might be.”).

¹¹ As drafted, some statutory formulations of bailment may be limited to tangible property. This constraint is not inherent to the doctrine itself. See *infra* Part I.B.

To study how cloud storage companies understand their service in relation to the doctrine of bailment, this Article relies on a hand-collected dataset of 61 contracts from 58 cloud storage providers. Contracts in this dataset are coded for language relating to risk of data loss. Only one contract in the data set explicitly contemplates bailment. Looking at historical versions of these contracts uncovers only one additional company that referenced bailment directly. Although most of these contracts do not discuss bailment by name, they have terms that implicate the doctrine. In the dataset, 52 contracts had one or more provision attempting to disclaim liability for lost data. Several contracts went further, commanding the client to maintain back-up copies of the data. A few even reserved the option to delete customer data at their discretion.

The exculpatory clauses in this data set are typical of those found across consumer contracts more generally.¹² These clauses attempt to pare back, and even eliminate, the many private law doctrines that constrain contracts in the name of consumer protection.¹³ When applied to bailments, exculpatory clauses vitiate the duty of care that would apply if the facts of the relationship animating the contract created a bailment.¹⁴ If the stored property were tangible, a company contracting with the public would likely not be able to make such an end-run around bailment law.¹⁵

Digital property should be no different. This Article builds on the growing literature arguing that “computer code that is designed to act like real world property” should “be regulated and protected like real world property.”¹⁶ In his critique of the tech industry, Adrian Daub argues that “fetishizing the novelty of the problem” that tech is attempting to solve, “deprives the public of the analytic tools that it has previously brought to bear on similar problems.”¹⁷ He explains that “standard analytic tools largely apply just fine” despite the novelty of new technology.¹⁸ One such analytic tool is the private law, particularly as conceived in the law of bailment.

¹² Ryan Martins et al., *Contract’s Revenge: The Waiver Society and the Death of Tort*, 41 CARDOZO L. REV. 1265 (2020), *see also* MICHAEL OVERLY & JAMES KALYVAS, SOFTWARE AGREEMENTS LINE BY LINE: A DETAILED LOOK AT SOFTWARE CONTRACTS AND LICENSES & HOW TO CHANGE THEM TO FIT YOUR NEEDS 69–83 (Aspatore Books 2016)(explaining that broad disclaimers of liability are common in software contracts).

¹³ *See generally* Martins et al., *supra* note 12 (explaining the rise of exculpatory clauses).

¹⁴ A Darby Dickerson, *Bailor Beware: Limitations and Exclusions of Liability in Commercial Bailments*, 41 VAND. L. REV. 45 (1988).

¹⁵ *Griffin v. Nationwide Moving & Storage Co.*, 446 A.2d 799, 804 (1982); *Am. Nursery Prods. V. Indian Wells Orchards*, 797 P.2d 477, 485 (1990); *Ellerman v. Atlanta Am. Motor Hotel Corp.*, 191 S.E.2d 295, 296 (Ga. App. 1972).

¹⁶ Joshua A. T. Fairfield, *Virtual Property*, 85 B.U. L. REV. 1047, 1048 (2005); *see also* Banta, *supra* note 9; Colin P. Marks, *Online Terms as in Terrorem Devices*, 78 MD. L. REV. 247, 249 (2019).

¹⁷ ADRIAN DAUB, WHAT TECH CALLS THINKING: AN INQUIRY INTO THE INTELLECTUAL BEDROCK OF SILICON VALLEY 5 (FSG Originals Oct. 2020).

¹⁸ *Id.*; *see also* Fairfield, *supra* note 16 (“Even where there has been some recognition that virtual property is somehow ‘different,’ no clear articulation of that difference has been offered.”).

The law of bailment exists independent of the contracts between tech companies and their clients. As Natalie Banta has explained, “[t]he concept of property and ownership goes beyond the terms of a contract—contracts cannot rewrite an entire system of property for digital assets.”¹⁹ Cloud storage is the safe deposit box of the twenty first century. Upon close inspection, the law of safe deposit boxes maps nicely onto cloud storage.²⁰ This conclusion stakes out a role for property as mandatory law notwithstanding broad freedom to contract. As Joshua A.T. Fairfield explains, “the law of contract and the law of property traditionally balance each other” with contract facilitating customization and property limiting the inefficiencies that customization can impose on assets.²¹ He argued that the contracts governing virtual environments attempt to eliminate the checks and balances traditionally posed by property law.²² Bailment is one such check—it secures emergent property against uncertainty and loss from firms with technological, informational, and bargaining advantages.²³

This Article proceeds in five Parts. Part I explains the law of bailment. Next, Part II turns to cloud storage, explaining how it works, arguing that the stored files are analogous to chattel property, and finally exploring the risks that cloud storage presents. Part III then makes the case that the common-law doctrine of bailment covers cloud storage. To see how cloud storage companies view their own bailment liability, Part IV is an empirical look at cloud storage contracts as they exist in the middle of 2020. Finally, Part V explores the structural barriers to recognizing cloud storage as a bailment in the law and the implication of the uncertainty around cloud storage for other areas of the law including the Fourth Amendment and ownership more broadly.

I. THE LAW OF BAILMENT

This Part builds the foundation for this Article’s later argument that cloud storage is best understood as a bailment. There are a few themes to watch for in this doctrinal foundation. The first is that the trust is the lifeblood of the bailment relationship. The second is that bailment is a mandatory doctrine—courts will look through contracts to the facts

¹⁹ *supra* note 9, at 1107.

²⁰ See Ronald J. Mann & Seth R. Belzley, *The Promise of Internet Intermediary Liability*, 47 WM. & MARY L. REV. 239, 244 (2005) (exploring how the internet has matured with a “set of legal rules also exists that have granted those actors broad freedom of action or exempted them from rules that govern analogous conduct outside cyberspace.”).

²¹ Fairfield, *supra* note 16, at 1051; see also Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 26–27 (2000).

²² Fairfield, *supra* note 16, at 1083–84.

²³ See Caitlin J. Akins, *Conversion of Digital Property: Protecting Consumers in the Age of Technology Student Article*, 23 LOY. CONSUMER L. REV. 215, 218 (2010) (explaining that internet-based services create three imbalances in favor of the service provider: technological, information, and bargaining).

to determine whether a bailment exists. And the third is that bailment doctrine puts liability on the least cost avoider, especially in cases where the bailee has a significant informational advantage over the bailor.

A. A Brief History of Bailment

For several millennia, bailment has been a body of law that govern the relationship between the owner of property and the person storing that property. It appears in the Code of Hammurabi²⁴ and Roman law in forms not much different from the modern common-law doctrine.²⁵ For example, §125 of the Code of Hammurabi says

“If a man give anything of his on deposit, and at the place of deposit either by burglary or pillage he suffer loss in common with the owner of the house, the owner of the house who has been negligent and has lost what was given to him on deposit shall make good (the loss) and restore (it) to the owner of the goods.”²⁶

Then, as now, the persistent question is who bears the risk of loss.

The facts that give rise to this question are diverse. Bracton sorted these facts into six categories, each with its own nuance, but retaining the core idea that someone holding another person’s property owes that person a duty to return the property unharmed.²⁷ Writing in *Coggs v. Bernard* in 1703, Chief Justice Holt elaborated on Bracton’s taxonomy.²⁸ According to Holt and Bracton, the traditional categories of bailment are: bare naked bailments or depositum; gratuitous loans to friends or commodatum; hired goods or location et conductio; pawn and pledge or vadium; common carriers including tradespeople; and volunteers or mandatam.²⁹ This taxonomy remains influential to both

²⁴ THE CODE OF HAMMURABI, KING OF BABYLON, ABOUT 2250 B.C. §§112, 120-125 (Robert Francis Harper trans., University of Chicago Press 1904).

²⁵ Charles Sumner Lobingier, *Common Law’s Indebtedness to Rome*, 11 A.B.A. J. 265, 266–67 (1925).

²⁶ THE CODE OF HAMMURABI, KING OF BABYLON, ABOUT 2250 B.C., *supra* note 24, at §125. Bracton, writing in the 13th century, and Holt, writing in the 18th century, give a nearly identical formulation of the law. *See Coggs*, 92 Eng. Rep. at 914.

²⁷ HENRY DE BRACTON, BRACTON DE LEGIBUS ET CONSUEUDINIBUS ANGLIAE 291 (Samuel E. Thorne trans., Harvard University Press 1977).

²⁸ 92 Eng. Rep. 107 (1703) (also called *Coggs v. Barnard* in some manuscripts); Stoljar, *supra* note 6, at 22 (explaining that Holt borrowed his terms from Bracton).

²⁹ *Id.*

courts³⁰ and commentators³¹ more than three centuries later, although it is beginning to yield to simpler frameworks.³² Still, the breadth of these categories reveals the wide reach of bailment doctrine.

To the extent that bailment has a reputation for being abstruse,³³ its old procedure is partly to blame. At common law, bailees faced liability under four actions: detinue,³⁴ account, case, and later, conversion.³⁵ Detinue, in particular, invited shenanigans.³⁶ But the core principle of bailees owing bailors a duty of care has been constant. Even where are

³⁰ See e.g., *Ferrick Excavating & Grading Co. v. Senger Trucking Co.*, 484 A.2d 744, 747 (Pa. 1984) (relying on Holt's taxonomy on bailments in *Coggs*); *Rodi Yachts, Inc. v. Natl. Mar., Inc.*, 984 F.2d 880, 885 (7th Cir 1993) (same); *Llamera v. United States*, 15 Cl. Ct. 593, 598 (1988) (citing *Coggs* for the proposition that reliance alone is sufficient to create a bailment); *Commercial Molasses Corp. v. NY Tank Barge Corp.*, 314 U.S. 104, 110 (1941) ("Petitioner apparently does not challenge the distinction which for more than two centuries, since *Coggs v. Bernard*, *supra*, has been taken between common carriers and those whom the law leaves free to regulate their mutual rights and obligations by private arrangement." Louisiana civil law cases retain Bracton's nomenclature. *Std. Motor Car Co. v. State Farm Mut. Auto. Ins. Co.*, 97 So.2d 435, 438 (La. Ct. App. 1957) (explaining that bailment "is quite similar in many respects to a civil law 'deposit'").

³¹ See e.g., Story (incorporating Holt's categories into his own framework); Kurt Philip Autor, *Bailment Liability: Toward a Standard of Reasonable Care* USC Symposium on Judicial Election, Selection, and Accountability, 61 CAL. L. REV. 2117, 2127 (1988) (describing competing classification regimes); *but see* Stoljar, *supra* note 6, at 16 (criticizing Bracton's taxonomy, which was the foundation of Holt's, as neither "enlightening" nor "clear"), and Dickerson, *supra* note 14, at 135 (describing Holt's framework as "obsolete").

³² This more modern framework simplifies Holt's six categories into three: bailments for sole benefit of the bailor, bailments for the sole benefit of the bailee, and bailments for mutual benefit. Some courts further simplify these categories into only two: bailments for hire and gratuitous bailments. 8A Am. Jur. 2d "Bailments" § 7; *see also* *Gulf Transit Co. v. United States*, 43 Ct. Cl. 183, 198 (1908) (explaining that contracts between the government and "corporations or individuals engaged in the business of receiving and caring for the property of others either for the purpose of hire or for the performance of work thereon" are "in the class of mutual benefit bailments"); *Gray v. Snow King Resort, Inc.*, 889 F. Supp. 1473, 1478 (D. Wyo. 1995) (stating that the same standard applies to a bailment for hire as to a bailment for mutual benefit) (applying Wyoming law).

³³ *George v. Bekins Van & Storage Co.*, 205 P.2d 1037, 1041 (Cal 1949) (describing case law as "conflicting and confusing")

³⁴ A writ of detinue would send the sheriff to order the bailee to return the bailed property. Holdsworth described detinue and debt as "twin actions," analogizing the bailee's obligation to return property to the borrower's obligation to repay money. 3 SIR WILLIAM SEARLE HOLDSWORTH, A HISTORY OF ENGLISH LAW 348 (Methuen & Company 1923)

³⁵ Beale, *supra* note 6, at 159. *See also*, BAKER, *supra* note 1, at 396 (recounting a bailee being held liable in conversion when he opened sealed boxes of silver and spent the coin).

³⁶ Bailees would mostly plead *non detinet* (he does not withhold) when they no longer had possession of the property. The plea of *non detinet* proved short-lived, perhaps because it all but invited opportunism. For example, a bailee holding wine might drink it and then truthfully be able to plead *non detinet*. It remains unclear how courts handled this situation. *See* Y.B. Hil. 20 Hen. VI, fo. 16, pl 2 per Brown (1442) ("If you bail me a tun of wine and I drink it with good company, you cannot detinue for it because the wine is no longer of this world.").

silent on any standard of care, the law has long imposed an obligation on bailees to perform their services with care.

At common law, if bailees could not return the property, bailors were entitled to a remedy unless the bailees could successfully plead an excuse. Acceptable excuses shifted over time. Bailees had an accidental loss defense in the 14th century,³⁷ but appear to have been strictly liable for losses for all losses except those “caused by act of God or the king’s enemies” by the 15th century.³⁸ But even then, this strict rule was merely a default. Bailees could and did accept bailments on less stringent terms, notably on a promise to treat the bailors’ goods with reasonable care or the same care that he treated his own.³⁹ Under these early exculpatory clauses, bailees were still liable if their negligence caused injury to the bailed property.⁴⁰ There is no evidence that a bailee could completely disclaim their duty of care.

Conversely, bailors have long been able to use contract to secure greater protection from their bailees. At common law, such a bailor needed a “special undertaking” in which the bailee would promise to keep the goods “safely and securely.” Writing in *Coggs*, Justice Gould explained that payment of a premium was evidence of this higher undertaking.⁴¹

Over time, the default duty of care relaxed, and since then, there has been some uncertainty about whether the default duty of care is negligence or gross negligence.⁴² This uncertainty persists in modern case law, but the majority rule is that ordinary negligence is the duty of care.⁴³ Either way, the duty of care remains a constant in the law.

Today, much of the common law of bailment has been codified. There is no comprehensive bailment statute, but rather industry-specific formulations scattered across the state and federal code. Most, but not all, of these statutes preserve the bailment relationship where it would apply at common law. As much as bailment is a set of rules facilitating

³⁷ BAKER, *supra* note 1, at 392.

³⁸ *Id.* There is disagreement among scholars about whether bailee liability was arguable an early form of strict liability. *Id.* at 395; *see also* Oliver Wendell Holmes, *The Common Law* 167 (Courier Corporation Jan. 1991); *but see* Stoljar, *supra* note 6, at 14 (arguing that bailee’s liability is better conceived of as “qualified” rather than “strict” except in the case of common carriers) and Beale, *supra* note 6, at 192 (questioning the evidence that bailees generally faced strict liability).

³⁹ BAKER, *supra* note 1, at 392.

⁴⁰ *Id.* at 395.

⁴¹ 92 Eng. Rep. at 107.

⁴² By the eighteenth century, whether the default standard of liability was negligence or gross negligence remains unclear. Justice Gould explained “So if goods are deposited with a friend, and are stolen from him, no action will lie. But there will be a difference in that case upon the evidence, how the matter appears; if they were stolen by reason of a gross neglect in the bailee, the trust will not save him from an action, otherwise if there be no gross neglect.” 2 Ld Raym. at 107. Holt argued that the standard was gross neglect, but conceded that there was a case against him. *Id.* at 110.

⁴³ *See generally* Helmholz, *supra* note 6 (tracing the uncertainty).

efficient commercial transactions, it is also a consumer protection law that puts the threat of liability behind inducements of trust.

Depending on the value of the stored property, this business risk may be undesirable if not intolerable. It is unsurprising then that industries like self-storage have lobbied for statutes mitigating this risk or at least providing more certainty than the common law about what risk they bear.⁴⁴ Industry-driven interventions limiting bailees' liability take a few common forms. Legislatures may include one or all of these in a single statute. The first, and most extreme, are statutes that prevent the creation of a bailment where the facts would create a bailment at common law. The self-storage industry has succeeded in winning these statutes in a handful of states.⁴⁵

The second statutory intervention in bailments are caps on bailee liability. One form of this intervention shield bailees from accidentally providing more insurance than they intent to provide. For example, California, Guam, Montana, Oklahoma, and South Dakota have statutes that cap bailees' liability at "the amount which [they are] informed by the depositor, or ha[ve] reason to suppose the thing deposited to be worth."⁴⁶ A more protective form of this intervention allows bailees to unilaterally cap their liability. Hotels in every state benefit from these statutes,⁴⁷ although some decline to extend the cap to losses attributable to the hotel's negligence.⁴⁸ These innkeepers' statutes undo the common law rules that included innkeepers among common carriers held strictly liable for losses of their client's property.⁴⁹

The third form of statutory intervention attempts, with mixed success, to resolve some of the uncertainty at common law over whether and how the parties can use contract to specify the bailee's duty of care.⁵⁰ The most significant version of this intervention is in Article 7 of the Uniform Commercial Code, which governs documents of title, including warehouse receipts and bills of lading, for personal property. In governing warehouse receipts, U.C.C.-7 covers much of the commercial activity that would otherwise fall under the law of bailments for hire. U.C.C. § 7-204(a) sets a warehouse's baseline

⁴⁴ Jeffrey Douglas Jones, *Property Rights, Property Wrongs, and Chattel Dispossession under Self-Storage Leases*, 78 TENN. L. REV. 1015 (2011).

⁴⁵ See *infra*, Part I.C.; see generally *Id.* (detailing the statutory interventions in the self-storage industry).

⁴⁶ Cal. Civ. Code, § 1840 (2020); 18 GCA Section 41108 (2020); Mont. Code Ann. § 70-6-204 (1999); 15 Okl. St. § 460 (2020).

⁴⁷ Dickerson, *supra* note 14, at 145 (cataloging innkeepers statutes in all 50 states).

⁴⁸ Compare *Shamrock Hilton Hotel v. Caranas*, 488 SW2d 151, 153 (Tex. Civ. App. 1972) (innkeeper statute does not shield hotel for liability for negligence) with *Associated Mills, Inc. v. Drake Hotel, Inc.*, 334 N.E.2d 746 (1975) (liability cap applies notwithstanding the hotel's negligence).

⁴⁹ See *supra*, Part I.C.

⁵⁰ See Hugh Evander Willis, *Right of Bailees to Contract against Liability for Negligence*, 20 HARV. L. REV. 297, 299 (1907) ("Almost unanimously it is held that bailees may increase the duty which they would otherwise be under, but to what extent they may decrease that duty is not clear") and Note, *Validity of an Ordinary Bailment Contract Limiting Liability of Bailee for Negligence*, 86 U. PA. L. REV. 765 (1938).

duty of care at “for damages for loss of or injury to the goods caused by its failure to exercise care with regard to the goods that a reasonably careful person would exercise under similar circumstances.”⁵¹ It then provides that “[u]nless otherwise agreed, the warehouse is not liable for damages that could not have been avoided by the exercise of that care,”⁵² the implication being that the parties can contract for the bailee to bear a higher duty of care.

The U.C.C. also endorses liability caps except when the warehouse converts the property for its own use providing, “[d]amages may be limited by a term in the warehouse receipt or storage agreement”⁵³ Although courts do tend to enforce damages caps that comply with U.C.C. § 7-204(b) against “sophisticated” parties,⁵⁴ they still occasionally hold that damages caps are unconscionable against consumers.⁵⁵ Interpreting § 7-204 In *OFI Int’l, Inc. v. Port Newark Refrigerated Warehouse*, the United States District Court for the District of New Jersey explained that “[w]hile a common carrier and a bailee cannot effectuate a complete exemption from liability for losses proximately resulting from the negligence of the carrier or bailee, nothing prevents them from placing limitations on that liability”⁵⁶

B. Modern Bailments at Common Law

Bailment is the separation of actual possession and from other property rights.⁵⁷ To create the archetypical bailment, Holt’s “bare naked bailment” or “depositum,”⁵⁸ the owner of goods delivers it to another party, paying a fee for that party to store the good. Many jurisdictions would call this a bailment for hire or bailment for mutual benefit, even if the payment takes the form of goodwill or other benefit.⁵⁹

⁵¹ U.C.C. § 7-204(a).

⁵² *Id.*, U.C.C. § 7-204(b).

⁵³ U.C.C. § 7-204(b).

⁵⁴ *Coutinho & Ferrostaal Inc. v. M/V Fed. Rhine*, 799 F. Supp. 2d 550, 554 (D. Md. 2011); *see also* Anthony B. Schutz, *Documents of Title Survey - Uniform Commercial Code*, 67 BUS. LAW. 1293 (2012).

⁵⁵ *See e.g.*, *Jasphy v. Osinsky*, 834 A.2d 426, 432 (N.J. 2003) (holding a \$1 cap on damages in an adhesion contract between a furrier and a consumer to be unconscionable); *see also* Drew L. Kershen, *Article 7: Documents of Title—2003 Developments*, 59 BUS. LAW. 1629, 1633 (American Bar Association 2004).

⁵⁶ 2015 WL 140134, at *9 (D.N.J. Jan. 12, 2015).

⁵⁷ *See Silvers v. Silvers*, 999 P.2d 786, 793 (Alaska 2000) (“Where the plaintiff transfers only the possessory interest in her property to the defendant, a bailment is created.”); *see also*, *BAKER*, *supra* note 1, at 389. The separation of possession and property occurred gradually.

⁵⁸ 92 Eng. Rep., at 109.

⁵⁹ *See Meriwether County v. Creamer*, 247 S.E.2d 178, 181 (1978) (loaning a firetruck for demonstration was not a gratuitous bailment because “it was for the benefit of the county to develop civil defense units”).

Bailors retain most of the rights in the delivered goods.⁶⁰ Notwithstanding the bailment, the bailors retain the right to control the property.⁶¹ Some degree of bailor control does not relieve bailees of their duty of care. The question of how much control the alleged bailor can retain without breaking the bailment relationship will become important when we turn to cloud storage in Part IV.

As discussed above, the exact contours of the duty of care that bailees owe bailors varies somewhat among states.⁶² Today, the majority rule is that bailees are liable when their negligence harms the property.⁶³ Tom Merrill and Henry Smith argue that setting the default rule at reasonable care may be an example of the law “maximiz[ing] the joint value associated with the bailment”⁶⁴ by adopting “the standard that the parties would most likely agree upon if they could costlessly negotiate over the issue.”⁶⁵ This standard sets the level of insurance that the bailee provides to the bailor.⁶⁶

The assumption that setting a default rule at negligence but allowing customization leads to efficient results works best where the bailment reflects a dickered agreement. The assumption is less defensible in high-volume situations where the bailee offers its services only according to a standard form contract—for example, coat checks, dry cleaners, and parking lots.⁶⁷ Here, the presumption of efficiency is especially weak where the bailors have no choice among bailees and where the cost of foregoing the bailment is high.⁶⁸ Indeed, if any bargaining could occur, it’s not clear that it would be worth the time.⁶⁹

⁶⁰ This interest may be ownership, but it may also be something less. Merrill & Smith, *supra* note 6, at 812 (explaining that bailment is a transfer of possession with the bailor retaining the other in rem property rights associated with ownership including the right to alienate or devise).

⁶¹ See e.g., U.C.C. §2-705 (entitling sellers to stop delivery of goods by non-carrier bailees provided that they “so notify as to enable the bailee by reasonable diligence to prevent delivery of the goods” up until the point that the bailee notifies the buyer that the bailee holds the goods for the buyer).

⁶² See Helmholz, *supra* note 6, at 134 (arguing that the persistence of “contract and conversion theories in preventing implementation of a uniform standard of reasonable care as the invariable rule of bailment liability.”).

⁶³ 8A Am Jur 2d Bailments § 77.

⁶⁴ Merrill & Smith, *supra* note 6, at 814.

⁶⁵ *Id.* at 813–14 (citing Ayers & Gertner 89-90).

⁶⁶ Some courts have denied that bailees are insurers, explaining that their liability stems from contract, negligence, or conversion and not from some kind of strict liability for loss of the bailed goods. See Tremaroli v. Delta Airlines, 117 Misc. 2d 484, 485 (N.Y. Civ. Ct., Queens Cnty. 1983) (“It is well settled that a bailee is not an insurer”).

⁶⁷ Merrill & Smith, *supra* note 6, at 814.

⁶⁸ For example, we might assume that a party will accept unsatisfactory terms on the agreement to use a coat check at theater if the alternative is to skip the performance thereby wasting the value of the tickets, and perhaps also transit, childcare, and time.

⁶⁹ See Merrill & Smith, *supra* note 6, at 817 (“it is doubtful that very many bailors would have an incentive to inform themselves about benefits and costs of agreeing to a modification of the default standard of care”).

The law of bailment teeters between property, contract, and tort, creating three competing theories of bailees' duty of care: contract, property, and conversion.⁷⁰ These competing theories muddle analysis of the extent to which bailee can customize their duty of care with contract.⁷¹ Where there is a contract, modern courts typically enforce it according to its terms,⁷² with limits on modifications to the duty of care.⁷³ Bailors who require greater protection when entrusting their goods to others can contract accordingly. Agreements that shift risk away from the bailee are more suspect, but often still enforceable.⁷⁴

The duty of care increases when the bailee redelivers the property to the bailee. Courts continue to hold bailees strictly for misdelivery of the bailed property.⁷⁵ This rule places liability on the least cost avoider since only the bailor can confirm the identity of the person receiving the property upon the termination of the bailment.⁷⁶

⁷⁰ See BAKER, *supra* note 1, at 407 (“‘contract’ and ‘tort’ still overlap in cases of bailees, surgeons, and others whose duties to be careful arise both by reason of their physical nexus with the plaintiff or his property and by reason of their dealings with him”) and Helmholz, *supra* note 6, at 134 (“bailments continue to stand at the intersection of property, contracts, and tort”); see also Merrill & Smith, *supra* note 6, at 810 (explaining the disagreement about where bailment fits into the private law); Brown on Personal Property §10.1 (“There has, however, been a vigorous dissent to this insistence on the contractual element in bailments.”). Occasionally, case outcomes turn on which theory courts apply. For example, in some jurisdictions actions in contract and actions in negligence carry different statutes of limitations. See *Baratta v. Kozlowskim* 464 N.Y.S.2d 803, 809 (N.Y. App. Div. 1983); WILLIAM L. PROSSER, SELECTED TOPICS ON THE LAW OF TORTS: FIVE LECTURES DELIVERED AT THE UNIVERSITY OF MICHIGAN FEBRUARY 2, 3, 4, 5, AND 6, 1953 434 (University of Michigan Law School 1953); see also *Wheeling Pittsburgh Steel Corp. v. Beelman Riv. Terms, Inc.*, 254 F.3d 706, 712 (8th Cir. 2001) (explaining that under Missouri law, suits for breach of bailment contract have allocate the burden of proof differently from other suits for breach of contract); but see *Knight v. H & H Chevrolet*, 337 N.W. 2d 742, 746 Neb. 1983) (putting the burden on bailees to prove that they were not negligent in cases sounding in both contract and tort); *Coons v. First-National Bank of Philmont*, 28 App. Div. 283, 218 N. Y. Supp. 189 (3d Dept. 1926) (holding a that a bank is not liable to the daughter of a depositor for the loss of a safety deposit box on the grounds that there was no contract between the bank and the daughter); *Wheeling Pittsburgh Steel Corp. v. Beelman Riv. Terms, Inc.*, 254 F.3d 706, 712 (8th Cir. 2001) (explaining that the district court erred in considering bailment contracts under general contracts doctrine); and William King Laidlaw, *Principles of Bailment* 26, 289–91 (discussing *Coons*)

⁷¹ Brown on Personal Property § 11.5.

⁷² *Id.*

⁷³ Even in 1955, the Supreme Court recognized that one justification for disfavoring exculpatory clauses was “to protect those in need of goods or services from being overreached by others who have power to drive hard bargains.” *Bisso v. Inland Waterways Corp.*, 349 U.S. 85, 91 (1955).

⁷⁴ See generally, Dickerson, *supra* note 14 (cataloging courts’ treatment of exculpatory clauses in bailment contracts).

⁷⁵ Helmholz, *supra* note 6, at 124–29.

⁷⁶ Merrill & Smith, *supra* note 6, at 816–17.

Even where bailee's duty of care is mere negligence, in many jurisdictions procedural rules offer bailors greater protection than plaintiffs in other negligence actions.⁷⁷ In many jurisdictions damage to property entrusted to a bailee, creates a rebuttable presumption that the bailee was negligent.⁷⁸ The burden of proof then shifts to the bailee who must either refute the bailor's allegation or prove some justification or excuse for why the condition of the goods has changed.⁷⁹ At this point, the bailor wins if the bailee cannot adequately explain what happened.⁸⁰ Indeed, some courts take bailees' uncertainty about what harm befell the goods in their care as evidence that they failed to satisfy their duty of care.⁸¹ If the bailee can show what happen to the goods, the burden of proof shifts back to the bailor to show that the bailee's negligence is responsible for the harm⁸² or that the bailee is guilty of conversion.⁸³ Given that the bailor is almost by definition removed from the chattel during the bailment, this this shift is significant.

C. *The Breadth of the Bailment Relationship*

Bailment extends far beyond the archetypical case discussed above. As Holt's six categories suggest, bailment doctrine covers any relationship in which someone entrusts their property to another. This part briefly traces the periphery of bailment doctrine to show the breadth of the relationships and diversity of technologies that it covers. That bailment doctrine has incorporated millennia of technological innovation suggests that it is ready to incorporate internet-based innovations, and indeed may have done so already but for structural barriers to the modernization of the common law.⁸⁴

⁷⁷ Helmholz, *supra* note 6, at 109–09; *George v. Bekins Van & Storage Co.*, 205 P.2d 1037, 1041 (Cal 1949).

⁷⁸ *Id.* at 104 (explaining that some jurisdictions place the burden of proof on bailees on the theory that bailees are in the best position to insure against losses and choose bailors wisely); *Silvers v. Silvers*, 999 P.2d 786, 794 (Alaska 2000), *Sears, Roebuck & Co. v. Wilson*, 963 S.W.2d 166, 169 (Tex. Ct. App. 1998); *Temple v. McCaughen & Burr, Inc.*, 839 S.W.2d 322, 326 (Mo. Ct. App. 1992); *Sampson v. Birkeland*, 211 N.E.2d 139, 140 (Ill. Ct. App. 1965); *but see Low v. Park Price Co.*, 503 P2d 291, 294 (Idaho 1972) (adopting the minority rule that places the burden of persuasion on the bailee); *see also Id.* at 103.

⁷⁹ *See Johnson v. Hardwick*, 441 S.E.2d 450, 451 (Ga. Ct. App. 1994); *see also U.C.C. §7-403* (“A bailee shall deliver the goods to a person entitled under a document of title . . . unless and to the extent that the bailee establishes” one of the enumerated excuses).

⁸⁰ *See Richard F. Broude, The Emerging Pattern of Field Warehouse Litigation: Liability for Unexplained Losses and Nonexistent Goods*, 47 NEB. L. REV. 3, 22 (1968) (explaining the difficulty of allocating the burden of proof when neither party can explain what happened to the goods).

⁸¹ *P&G Distrib. Co. v. Lawrence Am. Field Warehousing Corp.*, 22 AD2d 420, 432 (N.Y. App. Div. 1965) (“The total ignorance of the bailees instead of being an excuse is the measure of their fault as warehousemen”).

⁸² Helmholz, *supra* note 6, at 105. Holt, again borrowing from Bracton, labels these bailments “commodatum.” 92 Eng. Rep., at 111.

⁸³ *LaPlace v. Briere*, 962 A.2d 1139, 1148 (N.J. Super. Ct. App. Div. 2009).

⁸⁴ *See infra* Part V.A.

Gratuitous Loans to Friends. Consider Holt’s second category, gratuitous loans to friends.⁸⁵ In this category, the bailor lends their property to someone for free on the understanding that the friend will return the good later. The person accepting the good is a bailee, notwithstanding the lack of formal contract or payment between the parties.⁸⁶ Because only one party benefits in these transactions, some courts have adjusted the obligations that the bailor and bailee owe each other, holding that bailors have no duty to the bailees to inspect the goods loaned and need not warrant their safety.⁸⁷ Even here, however the bailee owes the bailor a duty of care to return the borrowed property.⁸⁸

Hired Goods. The same duty of care applies to the commercial version of this relationship: hired goods, which comprise Holt’s third category.⁸⁹ In this category, the bailee receives use and enjoyment of the goods “without the burdens of becoming and remaining the owner” while the lessor receives rent.⁹⁰ The classic cases involves renting out a horse to someone who then fails to adequately care for the horse or rides it too hard.⁹¹ Today, the same is true for rented cars and the like.⁹² More recently, dockless scooters

⁸⁵ Jurisdictions that have consolidated down to three or even two categories of bailment tend to call these transactions gratuitous bailments. This category covers cases where there is no “compensation in the ordinary sense,” *Bailey v. Innovative Management & Inv., Inc.*, 916 S.W.2d 805 (Mo. Ct. App. W.D. 1995).

⁸⁶ 8A Am. Jur. 2d Bailments §8 (1997); *Fili v. Matson Motors*, 183 A.D.2d 324, 328 (N.Y. Sup. Ct. App. Div. 4th Dept 1992) (“The character or certainty of compensation is not the distinguishing feature; the critical factor is whether some profit or benefit was expected”).

⁸⁷ *Ruth v. Hutchinson Gas Co.*, 209 Minn 248, 256, 296 NW 136, 140 (1941) (“The gratuitous bailor is under no duty to the bailee to communicate anything which he did not in fact know, whether he ought to have known it or not”); *Bailey v. Innovative Management & Inv., Inc.*, 916 S.W.2d 805 (Mo. Ct. App. W.D. 1995) (gratuitous bailor liable for actual knowledge, not constructive knowledge of defects in product).

⁸⁸ 92 Eng. Rep., at 111 (the borrower is bound to the strictest care and diligence, to keep the goods, so as to restore them back again to the lender, because the bailee has a benefit by the use of them, so as if the bailee be guilty of the least neglect, he will be answerable”).

⁸⁹ Holt and Bracton call these bailments “*locatio et conductio*,” referring to the lender as the locator and the borrower as the conductor. 92 Eng. Rep., at 109; 2 Bracton 284 (latin ed); *see also* *Woodruff v. Painter*, 24 A. 621, 622 (Pa.1892) (finding a bailment to be a bailment for hire “although no hire is paid, when it is a necessary incident of a business in which the bailee makes a profit”) and *Inland Compress Co. v. Simmons*, 159 P. 262, 263 (Okla. 1916) (same); *Tierstein v. Licht*, 345 P.2d 341, 346 (1959) (same).

⁹⁰ *Cintrone v. Hertz Truck Leasing & Rental Serv.*, 212 A.2d 769, 776 (N.J. 1965).

⁹¹ BAKER, *supra* note 1, at 389.

⁹² *Coffey v. Moore*, 948 So. 2d 544, 545 (Ala. 2006) (party renting a car is a bailee of the car).

have reignited interest in the question of the obligations owed between bailors and bailees in these relationships.⁹³ Most modern courts hold bailees who have rented property from their bailor to a negligence standard.⁹⁴

These bailments are distinct from bailments for hire because the bailors warrant to bailees that the good is fit to use for the intended purpose.⁹⁵ They have a duty to inspect goods and will be face standard tort liability if they rent a dangerous product.⁹⁶ Similarly, where the bailor leaves the goods with the bailee to be repaired, the bailor must inform the bailee of dangerous conditions not known to the bailee.⁹⁷ In other words, the obligations between bailors and bailees are mutual.

Pawn and Pledge. Moving into Holt's fourth category, pawn and pledge,⁹⁸ the breadth of the bailment relationship becomes more apparent. To pawn is to delivery of goods as collateral for a loan.⁹⁹ Here, the bailor is the borrower and the bailee the lender. Pawnees are liable to borrowers for negligence,¹⁰⁰ although many pawnees attempt to disclaim liability with mixed success.¹⁰¹

This category illustrates how the law of bailment allocates risk based on information advantages. In choosing a pawnee, borrowers are entitled to rely upon their perception

⁹³ See, e.g., Darden Copeland, *Electric Scooters: A New Frontier in Transportation and Products Liability*, 26 RICH. J.L. & TECH. 1 (2020); John Kendall, *Could the Rise of Dockless Scooters Change Contract Law*, 71 MERCER L. REV. 617 (2020).

⁹⁴ See CFC Fabrication, Inc. v. Dunn Constr. Co., 917 F.2d 1385, 1388 (5th Cir 1990)

⁹⁵ Fili v. Matson Motors, 183 A.D.2d 324, 329 (N.Y. Sup. Ct. App. Div. 4th Dept 1992); Meester v. Roose, 144 N.W.2d 274, 276 (1966); Cintrone, 212 A.2d at 777-78.

⁹⁶ Butler v. Northwestern Hosp. of Minneapolis, 278 NW 37, 38 (Minn. 1938).

⁹⁷ 8A Am. Jur.2d Bailments § 105; 8 Story § 25; Southeastern Steel & Tank Maintenance Co. v. Luttrell, 348 SW2d 905, 907 (Tenn. 1961).

⁹⁸ 92 Eng. Rep., at 109.

⁹⁹ Black's; see also Story on Bailment, § 290; Jacobs v. Grossman, 141 N.E. 714, 715 (Ill. 1923) ("A pawn is a species of bailment which arises when goods or chattels are delivered to another as a pawn for security to him on money borrowed of him by the bailor."); Johnson v. Smith, 30 Tenn. 396, 398 (1850) ("A pledge or pawn is a bailment of personal property, as security for some debt or engagement"); Huddleston v. U.S. 415 U.S. 814, 819 (1974) ("a pawn transaction is only a temporary bailment of personal property, with the pawnshop having merely a security interest in the pledged property, title or ownership is constant in the pawnor").

¹⁰⁰ See Stoljar, *supra* note 6, at 22 (explaining that courts held pledgees and depositaries to the same standard of care); Jacobs, 141 N.E. at 715 ("All that is required by the common law on the part of a pawnee in the protection of the property thus entrusted to him is ordinary care and diligence"); St. Losky v. Davidson, 6 Cal. 643, 647 (1856) ("A pledge is a bailment which is reciprocally beneficial to both parties. The law therefore requires of the pledgee the exercise of ordinary diligence in the care and custody of the goods pledged, and he is responsible for ordinary negligence"); McLemore v. the Louisiana State Bank, 91 U.S. 27 (1875) ("the duty of the bank to return the pledge, or show a good reason why it could not be returned. This it has done by proof, that without any fault on its part, and against its protest, the pledge was taken from it by superior force.").

¹⁰¹ Dutherage v. Boston Jewelry & Loan Co., 1989 Mass. App. Div. 144, 146.

of the pawn shop’s facilities. As one court explained, pawning of an heirloom “imposed a personal trust upon appellant to personally keep the property at his shop and under the assurance of protection.”¹⁰² Transferring the property to another facility opens the pawnee up to liability for conversion.¹⁰³ Similarly, a pledge agreement specifying that the goods be “stored in the Bay Warehouse, at our risk and expense,” was only effective in adjusting the bailees duty of care as long as the goods remained in the identified warehouse.¹⁰⁴

This category, like consumer lending more generally, is rife with misbehavior.¹⁰⁵ Some pawnees attempt to circumvent consumer protection laws by structuring the transaction as a sale with a right of repurchase.¹⁰⁶ But courts look through the parties’ terminology to the substance of the transaction and find bailments where no true sale has occurred.¹⁰⁷ In these cases, the pawnee is responsible for the property, notwithstanding assertions to the contrary.

Common Carriers and Tradespeople. Holt lumped those engaged in “publick employment,” together with private citizens engaged in trade but conceded that different rules applied to the two. Today, “publick employment” largely aligns with common carries. At common law, these common carriers included “innkeepers, victuallers, taverners, smiths, farriers tailors, carriers, ferrymen, sheriffs, and gaolers.”¹⁰⁸ Common carriers were liable for all harm to the bailed goods except those “acts of God” and “enemies of the king.”¹⁰⁹ Thus, the default rule was that common carriers were strictly liable for the bailed goods, even in cases of theft.

This rule is sometimes called “insurer’s liability” since the common carrier is effectively insuring the goods from loss.¹¹⁰ Unlike insurers, common carriers do not make individualized determinations about what to charge their clients based on risk.¹¹¹ Still, since their duty of care makes them answerable for the good even where they may not otherwise be answerable in tort, common carriers provide the economic equivalent of insurance while the goods are in their possession.

¹⁰² Jacobs, 141 N.E. at 715.

¹⁰³ *Id.*

¹⁰⁴ St. Losky, 6 Cal at 647.

¹⁰⁵ See e.g., Bullene v. Smith, 73 Mo 151, 161 (1880) (lamenting that pawns are often used to hide property from creditors).

¹⁰⁶ Caudle v. City of Fayetteville, 866 SW2d 410, 411 (Ark. 1993).

¹⁰⁷ See State v. Johnson, 799 P.2d 896, 897 (Ariz. Ct. App. 1990) (finding that the defendant could not avoid liability for trafficking stolen property by describing his sale as a pawn).

¹⁰⁸ Beale, *supra* note 6, at 163.

¹⁰⁹ 92 Eng. Rep., at 112.

¹¹⁰ See Beale, *supra* note 6, at 158 (arguing that common carriers’ liability “has nothing in common with the voluntary obligation of the insurer” despite the name); see also Stoljar, *supra* note 6, at 31 (explaining that “the germs of the insurance-idea can already be detected” by the late 18th century).

¹¹¹ See Beale, *supra* note 6, at 158.

Because common carrier liability is effectively a form of insurance, it only applies where the bailee has exclusive control over the carried good. So, in *Stevens v. The White City*, the Supreme Court held that towage contracts did not create bailments because “The tug does not have exclusive control over the tow but only so far as is necessary to enable the tug and those in charge of her to fulfill the engagement.”¹¹² Rather, the towed vessel and its cargo remain under the control of the master and crew, except “as is required to govern the movement of the flotilla.”¹¹³

According to Holt, the higher duty of care applied to common carriers serves two purposes. First, it disincentivized collaboration with thieves.¹¹⁴ Second, it provides security to merchants and those who necessarily rely on common carriers. Between the merchant and the common carrier, one party has to bear the risk of loss for the bailed goods. The carrier is in a better position to control that risk by taking precautions. Strict liability is an imperfect rule, but a simple one. It avoids the need for fact-intensive trials about whether the carriers’ negligence and the cause of the harm.

Actions against common carrier often sound in negligence.¹¹⁵ Innkeepers and hotel operators are iconic defendants in these cases. Historically, innkeepers were liable for the theft of guests’ property unless the thief was one of the guests’ own servants.¹¹⁶ Today, many of the bailment cases that reach an opinion involve cars parked at hotels.¹¹⁷ Hotels often attempt to disclaim the bailment, but, as in the case of pawnees, courts look through these disclaimers to the facts of the relationship.¹¹⁸

Today, the Carmack Amendment¹¹⁹ governs the liability of shippers on bills of lading for loss of goods in their care. Bills of lading are the contracts between sellers or consignors and shippers. It provides that carriers are liable “for the actual loss or injury to the property caused by (A) the receiving carrier, (B) the delivering carrier, or (C) another carrier over whose line or route the property is transported”¹²⁰ To make a claim under the Carmack Amendment, “a shipper must prove (1) delivery of goods to the initial carrier in good condition, (2) damage of the goods before delivery to their final destination,

¹¹² 285 U.S. 195, 200 (1932).

¹¹³ *Id.*; see also *Steamer Webb*, 81 U.S. 406, 414 (1871)(explaining the difference between towage liability and common carrier liability).

¹¹⁴ *Coggs v. Bernard*, 92 Eng. Rep., at 112 (“these carriers might have an opportunity of undoing all persons that had any dealings with them, by combining with thieves”).

¹¹⁵ Beale, *supra* note 6, at 159 (recounting that the earliest recorded case of negligence against a common carrier involves a boatman who was found to have overloaded the board causing the loss of the plaintiff’s mare)

¹¹⁶ *Southcott*, 43 Eliz 44 (1601).

¹¹⁷ *Allen v. Hyatt Regency-Nashville Hotel*, 668 S.W.2d 286, 288-90 (Tenn. 1984).

¹¹⁸ *Id.*

¹¹⁹ 49 U.S.C. § 14706.

¹²⁰ 49 U.S.C. § 14706(a).

and (3) amount of the damages.”¹²¹ The burden then shifts to the shipper to show that it was “not negligent and the damage was caused entirely by [an] act of God[,] . . . the public enemy[,] . . . the act of the shipper [itself,] . . . public authority[,] . . . or the inherent vice or nature of the goods.”¹²² Although this standard is not quite the strict liability that Holt envisioned, it is close.¹²³

Common carriers, like other bailees, can use contracts to limit their damages. They can limit their liability for ordinary negligence but not gross negligence.¹²⁴ Similarly, courts regularly enforce damages caps where shippers fail to note a higher value of the goods shipped on the bill of lading.¹²⁵ Critically, the shippers in these cases had the option to declare a higher value, but opted not to, perhaps for strategic reasons. As the New York Court of Appeals explained, these limitations on liability are “supported by sound principles of fair dealing and freedom of contracting.”¹²⁶ Still, courts look more skeptically at common carrier’s use of exculpatory clauses on the ground that common carrier liability has a significant impact on the public interest.¹²⁷ As the New Jersey Supreme Court explained “[t]he duty of the common carrier is sui generis. His obligations are so peculiar, it is difficult, perhaps impossible, to apply closely, by way of analogy, the rules of law which control his conduct, and give rise to his responsibilities, to the situation of other contractors.”¹²⁸

The unique rules that apply to common carriers do not apply to private citizens who may be in possession of another’s property to work on it. For example, cobblers repairing

¹²¹ Paper Magic Group, Inc. v. J. B. Hunt Transp., Inc., 318 F.3d 458, 461 (3d Cir 2003).

¹²² *Id.*; see also ABN Amro Verzekeringen BV v Geologistics Ams., Inc., 253 F. Supp. 2d 757, 765 (SDNY 2003) (Under New York common law, a common carrier is an insurer against damage to property received by it for transportation; the only exceptions are losses arising from an act of God or from acts of the public enemy.).

¹²³ See *e.g.*, Paper Magic Group, Inc. v. J. B. Hunt Transp., Inc., 318 F.3d 458, 461 (3d Cir 2003) (holding a shipper liable for the full invoice amount of a delivery of merchandise for Christmas 1998 that arrived at Target in early 1999 even where the contract did not indicate that the goods were especially time sensitive).

¹²⁴ ABN Amro, 253 F.Supp.2d at 765.

¹²⁵ Kershen, *supra* note 55, at 1632.

¹²⁶ Art Masters Assoc., Ltd. v. United Parcel Serv., 77 N.Y.2d 200, 206 (1990).

¹²⁷ See Kuzmiak v. Brookchester, Inc., 111 A.2d 425, 427 (N.J. Super. Ct. App. Div. 1955) (“Thus, a common carrier may not exempt itself from liability to a passenger for hire, but may as to a non-paying rider.”); Brown v. Bonesteele, 344 P.2d 928, 938 (Ore. 1959) (“If a common carrier enters into a special contract to carry the same type of goods as he is authorized to carry under his permit he does not thereby change his position as a common carrier”); New York Central Railroad Co. v. Lockwood, 84 U.S. 357, 377 (1843) (“when a . . . carrier be a corporation created for the purpose of the carrying trade, and the carriage of the articles is embraced within the scope of its chartered powers, it is a common carrier, and a special contract about its responsibility does not divest it of the character”).

¹²⁸ Kinney v. Cent. R. Co., 32 N.J.L. 407, 409 (1868).

shoes in their shops are bailees and the customers the bailors. They, like the first category of bailees above, are liable only for losses attributable to their own negligence.

Volunteers. Holt's final category, and the subject of *Coggs v. Bernard*, covered cases where someone delivered or worked on the goods of another without pay.¹²⁹ In these cases, the bailor alone benefits from the bailment. In *Coggs*, the defendant, Bernard, along with his servants,¹³⁰ attempted to transport several hogsheads of brandy from one cellar to another. In the move, "one pf the casks was staved, and a great quantity of brandy, viz. so many gallons was spilt."¹³¹ Although the plaintiff sued Bernard as a common porter, Bernard averred that he had not been paid, thereby changing the nature of the alleged bailment.¹³² According to Holt, volunteers are owe bailors a duty of care notwithstanding their lack of payment because of their position of trust,¹³³ and that trust alone was "a sufficient consideration" for imposing an obligation on the volunteer.¹³⁴ Holt explained that, "neglect is a deceit to the bailor. . . [the volunteer's] pretense of care being the persuasion that induced the plaintiff to trust him."¹³⁵ Writing separately Gould noted that payment was evidence of the trust bestowed upon the bailee,¹³⁶ not the source of the responsibility.¹³⁷

More modern courts agree. Writing in 1809, Lord Kent explained that volunteers were generally not answerable for nonfeasance, regardless of any promise they made, but they are answerable for misfeasance once they undertook an act.¹³⁸ Looking to Kent, the New Jersey Supreme Court has explained *Coggs* as resting not on some theory of contract "but upon the common law doctrine that one who undertakes to perform an act, and performs it negligently, whereby damage results, is liable for his misfeasance."¹³⁹ More recently still, the Tenth Circuit has even leaned on this rule to cut through facts making it difficult to categorize the relationship between the plaintiff and an alleged bailee.¹⁴⁰

But while courts sometimes make emphasize which party benefits from the bailment and whether money changed hands, the standard of care for which volunteer bailees are

¹²⁹ 92 Eng. Rep., at 109.

¹³⁰ Because the servants are agents, Bernard is liable for their acts. 92 Eng. Rep. at 107.

¹³¹ 92 Eng. Rep. at 107.

¹³² *Id.*

¹³³ *Id.* at 110.

¹³⁴ *Id.* at 114.

¹³⁵ *Id.* at 113.

¹³⁶ *Id.* at 107.

¹³⁷ *Id.*

¹³⁸ *Thorne v. Deas*, 4 Johns 84 (N.Y. 1809).

¹³⁹ *La Brasca v. Hinchman*, 79 A. 885, 885 (NJ 1911); *see also* *Bauer v. 141-149 Cedar Lane Holding Co.*, 130 A2d 833, 837 (NJ 1957) (quoting *La Brasca*).

¹⁴⁰ *George Bohannon Transp., Inc. v. Davis*, 323 F.2d 755, 757 (10th Cir. 1963) (holding that one who takes possession of another's property in an emergency is liable if their negligent handling of the property damages it).

answerable is the same as bailees for hire: negligence. This category illustrates how stable the core of bailment is: when one party assumes possession of another's property, for any reason, that party is liable if their negligent acts later harm the property.

II. STORING DIGITAL PROPERTY

Having traced the law of bailment as it applies to tangible property, we come to the question of digital property. This Part explains the basics of cloud storage and the risks that come with it. Next, it explains that electronic files should be understood as a form of property. Finally, this part explains that storing digital property carries risks similar to bailments of tangible property: loss of possession and loss of exclusion.

A. *The Basics of Cloud Storage*

Cloud storage refers to warehousing digital files on servers managed by a third party. Cloud computing is the foundation of cloud storage. According to the National Institute of Standards and Technology, cloud computing “is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”¹⁴¹ Cloud computing depends on cloud infrastructure—the hardware and software that make the cloud work.¹⁴² There are as many variations of cloud infrastructure as there are cloud storage companies.

Cloud storage is different from network or local storage in that the files actually live in the care of the storage company. To be sure, network and local storage might rely on externally produced infrastructure to store files, but the user nominally controls that infrastructure on site. With cloud storage, the files are accessible to the user, but the infrastructure that manages them belongs to and is in the possession of the cloud storage company.

For the purposes of this Article, only a few details matter. The first is that cloud storage users save files to online services that then host these files. The user might be intentionally storing files for later use—for example, there are drafts of the Article saved on to Microsoft's OneDrive, a back-up copy on iCloud, and fragments archived with Evernote and Dropbox. But cloud storage is a bigger phenomenon than files that users intentionally save. It also includes transcripts of conversations occurring by text message, call logs, and account information, including location data. For consumers, most of what they do on their smartphones implicates cloud storage in some way, especially as apps save less data locally. For companies, and even governments, the data that comprises their business

¹⁴¹ Peter Mell & Tim Grance, *The NIST Definition of Cloud Computing*, Nos. 800–145 (Sep. 2011).

¹⁴² Computer Security Resource Center: Cloud Infrastructure (NIST).

is increasingly saved on the cloud.¹⁴³ Some of these services might rely on third-party services to provide the physical hosting, but that matters less than the consumer’s choice to deliver their data in some kind of online locker. Consider the analogy to a bank safety deposit box: the depositors care about which bank their box is at far more than they care about which company made the physical box.

The second detail to note is whether the storage company can access the files under its care or whether those files are encrypted before the storage company has access to them. Here, the relevant encryption is not the security measures that prevent unauthorized access to the files, but rather the security measures that prevent even the storage company from reading the data on its servers. For example, Apple famously uses end-to-end encryption in its messaging app, making it nearly impossible for Apple to access users’ data, even at the bequest of law enforcement.¹⁴⁴ When data is not encrypted, the storage companies conceivably know what they are hosting. While they may not scan the files they store in practice,¹⁴⁵ if they had reason to want to know, they could.

B. *Electronic Files as Digital Property*

Having covered how cloud storage works, it is time to look at the subject of cloud storage: electronic files.¹⁴⁶ These files can be difficult to describe. On the one hand, from a functional perspective many of them are perfect substitutes for tangible goods. Compare the rolodex card to a contact saved in your phone. On the other hand, unlike the chattels they replace, they are intangible. Yet they are not quite like other intangibles—goodwill, shares, etc. For starters, files may be intangible, but they exist in space on whatever medium they are stored. They are potentially affected by events in the physical world. If your photos from the 2010s are still on SD cards some dark corner of your

¹⁴³ *Cloud Storage Market Size, Share, Growth | Industry Trends* (May 2020).

¹⁴⁴ Caitlin Dewey, *Apple’s iMessage Encryption Foils Law Enforcement, Justice Department Complains*, WASH. POST (Apr. 5, 2013), https://www.washingtonpost.com/business/technology/apples-imessage-encryption-foils-law-enforcement-justice-department-complains/2013/04/05/f4a6b66e-9d68-11e2-a2db-efc5298a95e1_story.html.

¹⁴⁵ Many of the largest cloud storage companies do not even scan the data they store for child pornography and other contraband. See Michael H. Keller & Gabriel J. X. Dance, *Child Abusers Run Rampant as Tech Companies Look the Other Way*, N.Y. TIMES (Nov. 9, 2019) and *Parents Accuse Amazon of Inaction in Combatting Child Abuse Material Online*, COMPUTERWEEKLY.COM, <https://www.computerweekly.com/news/252487004/Parents-accuse-AWS-of-inaction-in-combatting-child-abuse-material-online>; see also Sean Gallagher, *Updated: How Verizon Found Child Pornography in Its Cloud*, ARS TECHNICA (Mar. 5, 2013), <https://arstechnica.com/information-technology/2013/03/how-verizon-found-a-child-pornographer-in-its-cloud/> (recounting how Verizon, unlike other companies, does scan files its stores for child pornography).

¹⁴⁶ The ALI prefers to use the term “data” instead of “file” to refer to code and its “physical manifestation on a particular medium,” but concedes that data has two meanings, the other referring to the meaning of the code. ALI–ELI Principles for a Data Economy—Data Rights and Transactions 27 (May 22, 2020).

house,¹⁴⁷ and you lose them, damage them, or otherwise fall victim to the powers that be, those photos are gone. Unless you have a back-up copy of the files, those photos are gone. The photo files are distinct from any medium on which they are stored, yet completely dependents on that medium while they are there.

Other intangibles have no such connection to the tangible world. The patents covering that SD card and the copyright in the photos are entirely immune to the happenings in the physical world. These intangibles cannot be accidentally lost or destroyed. Similarly, most shareholders no longer keep snazzy certificates for each share they own. And even if they do, losing those certificates does not destroy the shares. Files, by contrast, are subject to accidental loss and destruction.

An SD card storing photos presents two familiar forms of property. The physical SD card is a chattel, subject to the state laws of chattel that have been around for centuries. The photos may be protected by copyright. Though not universally accepted as full-fledged property,¹⁴⁸ copyright and other form of intellectual property now receive property protections both under the statutes creating them and from general property doctrine.

The SD card also has a potential third kind of property: the files themselves. The question here is whether a file is property distinct from whatever chattel houses the file and whatever intellectual property rights might layer on top of it. A definitive answer to the question of whether digital files are property is beyond the scope of this Article. Still, showing that files are things that can be subject of bailment is essential to this Article's core claim that cloud storage creates a bailment.

Joshua A. T. Fairfield has made the most persuasive argument that digital property is property. He argues that “property rights are nothing but information: information about *who* may do *what* with *which resource* over *which period of time*.”¹⁴⁹ The resource is secondary to the rights in the resource.¹⁵⁰ Freed from the constraints of tangibility, this conception of property rights easily encompasses digital property such as files¹⁵¹ and suggests that “the rules for ordinary property ownership should apply to digital . . . property.”¹⁵²

¹⁴⁷ This is a bad idea.

¹⁴⁸ See *Is Copyright Property?*, 42 SAN DIEGO L. REV. 29, 29–35 (2005) (cataloging the debate about whether copyright is property or policy); see also Julie E. Cohen, *Copyright as Property in the Post-Industrial Economy: A Research Agenda Symposium: Intergenerational Equity and Intellectual Property*, 2011 WIS. L. REV. 141, 144–53 (2011).

¹⁴⁹ JOSHUA A. T. FAIRFIELD, *OWNED: PROPERTY, PRIVACY, AND THE NEW DIGITAL SERFDOM* 135 (Cambridge University Press 2017) (emphasis in original)

¹⁵⁰ *Id.*; see also Thomas C. Grey, *The Disintegration of Property*, 22 NOMOS 69, 70 (1980) (arguing that property cannot be tied to things because “most property in a modern capitalist economy is intangible”).

¹⁵¹ FAIRFIELD, *supra* note 148, at 135.

¹⁵² *Id.* at 17.

But if you are not convinced that electronic files are “Property” in the strongest sense of the word, the question remains whether files are at least a kind of quasi-property subject to some property doctrines. The answer here has to be yes. The file is a distinct thing over which a person or entity has control. This control has the typical attributes of ownership: the right to exclude, use, alienate, and even destroy.¹⁵³ These rights are independent of any intellectual property that might attach to the file.

An example will make this point clearer. Imagine a researcher who has an electronic file that holds data downloaded from a governmental agency’s public website. For various reasons, that researcher has no intellectual property rights in that data. Nor can the researcher claim any rights arising from licensing that data. Still, that researcher has *in rem* rights attached to the file itself. She can exclude others from the file that contains a copy of the data, keeping it behind a password or on inaccessible servers.¹⁵⁴ Even if that file is difficult to replicate, perhaps because it is unmanageably large or because the website from which it came is no longer public, the researcher has no legal obligation to share her file. When the file is no longer useful to her, the researcher can sell her copy of the file or delete it, no matter how badly someone else wants it. And if someone converts her file and locks her out of it, she can sue to get it back.¹⁵⁵

In this example, there is no reason to expect that the researcher’s interest in the file would turn on where she stored the file. The researcher’s interest in and rights to the file is distinct from the chattel on which it is encoded. Her interest in the file should not be diminished if she chooses to store the file on the cloud where a cloud storage company owns the tangible servers that host the file. To say otherwise would be to erect pointless formalities across functionally identical technology.

C. *Interference with Digital Property Rights*

1. *Loss of Possession*

There are many ways to lose possession of a tangible object. There are unintended events: bouts of forgetfulness, accidents, natural disasters, and theft, to name a few. Most of these translate directly to storing digital property. After all, digital property exists on servers that are as susceptible to physical harm as any other object. Back up protocol, particularly on the cloud, might mitigate the risk of loss. But the risk will never be zero.¹⁵⁶

¹⁵³ See also F. Gregory Lastowka & Dan Hunter, *The Laws of the Virtual Worlds*, 92 CALIF. L. REV. 1, 41 (2004) (“Outside of legislatively recognized intellectual property rights, legal scholars have noted how markets in intangible properties have been conjured into existence through the simple expedient of declaring a saleable interest.”).

¹⁵⁴ See *Intl. News Serv. v. A.P.*, 248 U.S. 215, 236 (1918).

¹⁵⁵ See *Kremen v. Cohen*, 337 F. 3d 1024, 1030 (2003) (theft of the domain sex.com); see also Juliet M. Moringiello, *What Virtual Worlds Can Do For Property Law*, 62 FLA. L. REV. 159, 187–88 (2010) (explaining conversion of intangible property).

¹⁵⁶ For a fanciful depiction of what it takes to destroy well-duplicated digital property see Season 1 of *Mr. Robot* (USA Network television broadcast 2015).

Accidental losses in the digital space are unintentional deletions or corruptions of data. While actions by either the firm or the consumer can cause this kind of loss, this Article is interested only in the former. What happens when the company that hosts the stored data accidentally renders that data inaccessible or unusable? Is there any reason why the outcome should differ from what would happen if a storage company lost or broke a tangible object?

Theft looks somewhat different in the digital space. Unlike with tangible property, theft of digital property typically does not deprive the owner of possession. Instead, it usually deprives the owner of exclusion. Still, there are real threats to possession: Hacks that deny owners' possession in order to extort a ransom, so-called ransomware attacks, are becoming more common.¹⁵⁷ There is always the risk that a disgruntled employee will sabotage a company by deleting files, wherever they may be stored.¹⁵⁸

In the storage context, there is also the risk that the cloud storage company will decide to wind up its business. Ideally, it will give those storing property notice and an opportunity to retrieve their property. But there will be mishaps—notice is imperfect or it may be impossible to retrieve the property in the given window. This risk translates directly into the digital space. Companies may invite users to store data with them only to decide to exit the business at a later date. For example, when Twitter decided to close its popular social network, Vine, it notified Vine users that they needed to export their videos before a certain date after which they would no longer be available.¹⁵⁹ Tumblr did the same when it decided to ban “adult” content after allowing it to flourish there for years.¹⁶⁰ While users of free social media might understand their creations to be more ephemeral

¹⁵⁷ See Danny Palmer, *Ransomware: Huge Rise in Attacks this Year as Cyber Criminals Hunt Bigger Pay Days*, ZDNET (Sep. 9, 2020), <https://www.zdnet.com/article/ransomware-huge-rise-in-attacks-this-year-as-cyber-criminals-hunt-bigger-pay-days/>; Shannon Bond et al., *U.S. Hospitals Targeted In Rising Wave Of Ransomware Attacks, Federal Agencies Say*, NPR.ORG (Oct. 29, 2020), <https://www.npr.org/2020/10/29/928979988/u-s-hospitals-targeted-in-rising-wave-of-ransomware-attacks-federal-agencies-say>.

¹⁵⁸ See, e.g., Alanna Petroff, *Experts: Global Cyberattack Looks More like “sabotage” than Ransomware*, CNN (Jun. 30, 2017), <https://money.cnn.com/2017/06/30/technology/ransomware-cyber-attack-computer/index.html>; David W. Chen, *Man Charged With Sabotage Of Computers*, N.Y. TIMES (Feb. 18, 1998), <https://www.nytimes.com/1998/02/18/nyregion/man-charged-with-sabotage-of-computers.html>. (reporting how a former employee deleted critical files causing \$10 million in lost sales).

¹⁵⁹ See Sarah Perez, *Vine is Shutting down, so Don't Forget to Export Your Videos Today*, TECHCRUNCH (Jan. 17, 2017), <https://social.techcrunch.com/2017/01/17/vine-is-shutting-down-today-so-dont-forget-to-export-your-videos/>.

¹⁶⁰ *Tumblr Help Center: Adult Content*, HELP CENTER, <https://tumblr.zendesk.com/hc/en-us/articles/231885248-Adult-content> (last visited Nov. 23, 2020); *What Tumblr's Ban on “Adult Content” Actually Did*, ELECTRONIC FRONTIER FOUNDATION, <https://www.eff.org/tossedout/tumblr-ban-adult-content> (last visited Nov. 23, 2020).

than items placed in paid storage, the potential destruction of value is equivalent, particularly if there is no convenient place to which to move the content.¹⁶¹

Government action against storage companies can also threaten possession. Consider the case of Kim Dotcom's MegaUpload. In its heyday, MegaUpload allowed users to store and share all kinds of files. The company did not police the content of its servers for intellectual property infringement and other violations of the law (of which there were many), which eventually led federal prosecutors to shut the site down.¹⁶² When it seized the company, the government did not create a viable process for users to retrieve data, even if that data violated no laws.¹⁶³ With its assets frozen, MegaUpload could no longer pay its hosting bills, leading to several tense weeks where user data was on the verge of destruction.¹⁶⁴ Eventually, at least one hosting company deleted petabytes of user data¹⁶⁵ and some of the hardware storing the data has become inoperable in the ensuing years.¹⁶⁶

While advocacy groups like the Electronic Frontier Foundation warned that the government's actions were violating the property rights of innocent users,¹⁶⁷ the digital files store on MegaUpload never received the same treatment as traditional property. Indeed, even compared to moneys held by shuttered electronic gambling sites,¹⁶⁸ MegaUpload's user files received little protection. Absent clear rules for what should happen to user property in these cases, consumers should duplicate their holdings across different cloud storage companies and perhaps ever stick to storage companies that are potentially too big to fail.

A subsidiary question in the cloud storage space is what are the cloud storage company's rights to deny their clients access to their files. Put differently, can cloud storage firms deny their clients the right to use the stored files? Firms may lock clients out of their files for non-payment or violations of the terms of service. Locking clients out is one way

¹⁶¹ See Ann-Derrick Gaillot, *Where Does a Vine Star Go after Vine?*, THE OUTLINE, <https://theoutline.com/post/2941/vine-shutdown-one-year-later-christiana-gilles> (tracing what happened to Vine's content after Vine shut down).

¹⁶² Kravets David, *Megaupload Case Has Far-Reaching Implications for Cloud-Data Ownership Rights*, WIRED, <https://www.wired.com/2012/11/megaupload-data-what-to-do/>.

¹⁶³ *Id.*

¹⁶⁴ Ernesto Van der Sar, *MegaUpload User Data Soon to Be Destroyed*, TORRENT FREAK (Jan. 30, 2012), <https://torrentfreak.com/megaupload-user-data-soon-to-be-destroyed-120130/>; Zack Whittaker, *Megaupload Data Safe for "at Least Two Weeks,"* ZDNET (Jan. 31, 2012), <https://www.zdnet.com/article/megaupload-data-safe-for-at-least-two-weeks/>.

¹⁶⁵ Steven J. Vaughan-Nichols, *Kim Dotcom: Petabytes of Megaupload Users' Data Has Been Destroyed*, ZDNET (Jun. 19, 2013), <https://www.zdnet.com/article/kim-dotcom-petabytes-of-megaupload-users-data-has-been-destroyed/>.

¹⁶⁶ Ernesto Van der Sar, *Megaupload Hard Drives Are Unreadable, Hosting Company Warns*, <https://torrentfreak.com/megaupload-hard-drives-are-unreadable-hosting-company-warns-160518/>.

¹⁶⁷ David, *supra* note 161.

¹⁶⁸ Kravets David, *Deadline Looms for Online Gamblers to Petition for Seized Bankrolls*, WIRED (Jul. 14, 2011), <https://www.wired.com/2011/07/online-gambling-bankrolls/>.

to deny clients possession of their files. Here, the analogy to storage of physical property is again useful. Depending on the reason, companies that store tangible goods may lock out their owner of the goods.

Looking at how loss of possession works in the digital space reveals just how analogous digital storage is to physical storage. That the two forms of storage are so similar suggests that they should be governed by similar rules.

2. *Loss of Exclusion*

In digital storage, loss of exclusion is loss of privacy. That wrongdoers—whether the storage companies or intruders—can copy or read the files without taking them is risk that is particularly acute in this space. Unlike chattels, there is no limit to the number of copies of digital property that may exist and no limit on the number of people who might read a document. Having copied or read the files, these wrongdoers can vitiate the owners’ right to exclude by publishing the files or revealing the information that they contain.¹⁶⁹

Some losses of exclusion will be minorly embarrassing, perhaps revealing little more than a failure to use robust encryption. But others will be far more significant, depending on the information copied. Bailors could lose trade secrets, face security threats, or have the most intimate details of their lives exposed.¹⁷⁰

III. CLOUD STORAGE AS BAILMENT

Property students might think of bailment as one of those crusty doctrines that only professors can love. Its modern iterations, particularly in the law of warehouses, might seem a world away from the law of Silicon Valley. But this is wrong. For all of the newness of cloud storage, it is still storage.

A. *Situating Cloud Storage in the Law of Bailment*

The basic bailment is the delivery of a good to the possession of another on the expectation that the recipient will return the good at some later point. The building blocks of the transaction are what matter. To determine whether cloud storage is a bailment, there needs to be a good that is capable of being stored.¹⁷¹ The good must actually be delivered and accepted into the possession of the alleged storage company. And finally, the parties must understand that the storage company will return the good to the deliverer at some later point.

¹⁶⁹ See Lauren Henry Scholz, *Privacy as Quasi-Property*, 101 IOWA L. REV. 1113 (2016) (explaining privacy as a kind of quasi-property giving owners a relational entitlement to exclude).

¹⁷⁰ See Neil M. Richards & Woodrow Hartzog, *A Relational Turn for Data Protection?*, 4 EUR. DATA PROT. L. REV. 1, 2 (2020) (arguing that legal conceptions of privacy underestimate the power of data).

¹⁷¹ See Dickerson, *supra* note 14.

The relevant goods for this analysis are digital files.¹⁷² One example is the file containing the draft of this Article that I stored on primarily on Microsoft's OneDrive with backup copies saved to iCloud and Dropbox. Other examples are the file containing spreadsheet that I used to collect data on cloud storage contracts and the file containing the photograph that I took of my cat commandeering my keyboard. It's easy to imagine that a smartphone user with an office job might make thousands of these files each week. A retailer might have voluminous inventory records and even more voluminous security footage from its stores. Gone are the dates of a physical rolodex. Now, those little cards live in the cloud, accessible on any device through digital address books and customer relationship software. Given their close analogy to tangible property, these files are best understood as digital property.¹⁷³

That brings us to the question of whether digital property can be the subject of bailments. To be sure, the common law doctrine of bailment predates the possibility of digital property. But there is no analytical reason for limiting the law of bailment to tangibles. In many cases, digital files have replaced tangibles in form without changing their function. For example, I no longer need to preserve binders of the articles found in this Article's footnotes. I preserve the same content in digital files that I store on the cloud. That is, my digital property has relieved me of the need to maintain tangible property. Where there is something close to a 1:1 substitution of tangible property for digital property, the arguments for divorcing digital property from the rest of the private law are thin.

Still, there is uncertainty about whether bailment covers other-than-tangible goods. Despite having many attributes of property, Story argued that intangibles could not be pawned because they could not be delivered.¹⁷⁴ For certainty, legislatures sometimes passed laws specifying that certain intangibles could be pledged.¹⁷⁵ Despite earlier uncertainty, modern technology demonstrates that digital property is capable of delivery much in the same way as tangible property, albeit via digital means. So, while one cannot mail a digital greeting card to a friend by post, email can substitute for the post.

While email might demonstrate that it is possible to deliver digital files, the more difficult question is whether saving a file to the cloud is deliver to the cloud storage company. Again, finding analogs in the tangible world is instructive. If I want to preserve my drafts of this article without cluttering my office, I can corral them into redwelds that I then drop off in my own basement or remote storage unit. Dropping boxes of redwelds in my basement raises no question of bailment because I have not delivered the boxes to anyone else. But dropping the boxes in remote storage does raise questions of bailment

¹⁷² The case law on whether software or other digital goods can be the subject of bailment is thin. *See Bizrocket.com, Inc. v. Interland, Inc.*, 2005 U.S. Dist. LEXIS 47887, at *14 (S.D. Fla. May 23, 2005, No. 04-60706-CIV)(denying summary judgment on a negligent bailment claim where the moving party owned a server on which the plaintiff stored its software).

¹⁷³ *See supra* Part II.B.

¹⁷⁴ Story § 286.

¹⁷⁵ *First Natl. Bank v. Charles Nelson & Co.*, 38 Ga 391, 402 (1868).

precisely because there is a storage company that has received the property. For our purposes, the question is whether saving files to the cloud is more like putting them in one's own basement or more like putting them in remote storage.

The latter seems correct. When the creators of a file save it to the cloud, they cede at least some control over the file much in the same way that one cedes some control when using a storage company. The owners of the file, like the lessors of a storage unit or safe deposit box, retain the right to access their property and may have some control over how secure the property is, but they do not control the infrastructure that makes the storage possible. Decisions about the infrastructure lie with the cloud storage company or the owner of the self-storage site. While the storage company might grant clients some customization rights or might seek input from clients in its decision-making, as owner of the storage infrastructure, it is responsible for the infrastructure.

The question of acceptance may turn on the facts of each cloud storage providers. Where the provider makes the cloud storage space available without interacting with the client or going through any meaningful verification, the storage might be more analogous to an unsupervised, ungated parking lot—which usually does not create a bailment relationship¹⁷⁶—than to the kind of service that does. On the other hand, if the cloud storage provider is scanning the files for contraband and touting its security, the best analogy might be to the attended parking lot—which usually does create a bailment relationship.¹⁷⁷ Some scanning appears to be the norm. For example, Dropbox scans uploads for copyright infringement, even though it claims not to “read” private files.¹⁷⁸ In other words, Dropbox is able to inspect the files it hosts to limit at least some of its liability. This ability to inspect files suggest that cloud storage firms accept these files when they permit them to be saved and to remain on their servers.

B. *Possession and Control*

After cloud storage companies accept files for storage, the next question is whether they are in possession of the files. This analysis often turns on questions about whether the storage companies knows what property it stores and whether it controls that property. Cloud storage companies may not know the content or value of the files using their infrastructure, but they are knowledgeable about the fact of the storage. In this way, cloud storage companies are like the providers of safe deposit boxes.¹⁷⁹

Safe deposit boxes are secure lockers held in a vault, often at a bank but sometimes at a stand-alone safe deposit company. These lockers are supposed to protect deposited

¹⁷⁶ See *Rhodes v. Pioneer Parking Lot, Inc.*, 501 S.W. 2d 569, 571 (Tenn. 1973).

¹⁷⁷ See *Allen v. Hyatt Regency-Nashville Hotel*, 668 S.W.2d 286, 288-90 (Tenn. 1984).

¹⁷⁸ Greg Kumparak, *How Dropbox Knows When You're Sharing Copyrighted Stuff (Without Actually Looking At Your Stuff)*, TECHCRUNCH (Mar. 30, 2014), <https://social.techcrunch.com/2014/03/30/how-dropbox-knows-when-youre-sharing-copyrighted-stuff-without-actually-looking-at-your-stuff/>.

¹⁷⁹ See *supra*, Part I.B.3.

property from theft, natural disasters,¹⁸⁰ and accidental loss. Depositors pay the company rent for the box. In return, the company give the depositor a key and maintains various protocols for keeping the box secure. There is some variation in these protocols, but they typically involve some element of dual control, meaning that both the depositor's key and the bank's key is essential for opening the box. State law typically specifies the limited circumstances in which the safe deposit company can drill the box open, including non-payment of the rent, court order, and other law enforcement activity. While many people trust their most valuable goods to safe deposit boxes, there are ample stories of them failing to keep goods safe.¹⁸¹

Safe deposit boxes would seem an obvious application of the law of bailment, and many courts have held that they are.¹⁸² Still, upon closer inspection, there are several paths that safe deposit companies use to challenge any bailee liability that they may face. The first path is contract. Customers seeking a safe deposit box typically sign rental agreements. These contracts often disclaim the creation of a bailment.¹⁸³ Today, safe deposit companies can unilaterally change these contracts to add disclaimers not in place when the depositor rented the box.¹⁸⁴ Many courts have found these disclaimers to be ineffective.¹⁸⁵ For example, in *Ellenbogen v. PNC Bank, N.A.*, the Pennsylvania Superior Court explained that a disclaimer of bailment did “not dissuade [the court] that the essential relationship created under the contract was one of bailment.”¹⁸⁶ The court explained that it could not “uphold a total waiver of the fundamental legal relationship created by the contract. Such a waiver would swallow the bank's duty whole.”¹⁸⁷ Consensus that safe

¹⁸⁰ See *Seitz v. Lemay Bank & Trust Co.*, 959 S.W. 2d 458 (Mo. 1998) (upholding a verdict against a bank that failed to protect its vault from the Great Flood of 1993).

¹⁸¹ Stacy Cowley, *Safe Deposit Boxes Aren't Safe* (Published 2019), N.Y. TIMES (Jul. 19, 2019), <https://www.nytimes.com/2019/07/19/business/safe-deposit-box-theft.html>.

¹⁸² See, e.g., *Seitz v. Lemay Bank & Trust Co.*, 959 S.W. 2d 458, 461 (Mo. 1998) (“It is well settled that when a bank lets a safe deposit box to a customer, a bailment relationship is created between the bank and the customer as to the property deposited into the box.”); *James v. Webb*, 827 S.W. 2d 702, 704 (Ky. Ct. App. 1991) (“A safe deposit box and the valuables placed therein, be they jewelry, coin collections, or bearer bonds create a situation analogous to a bailment, rather than a bank account.”); see also Kenneth M. Lapine et al. 1 BANKING LAW § 10.03 (2020) (“The relationship between a bank and its customer renting a safe deposit box is that of bailee and bailor, the bailment being for hire or mutual benefit.”).

¹⁸³ See e.g., *Ellenbogen v. PNC Bank, N.A.*, 731 A.2d 175, 177 (Pa. 1999) (safe deposit agreement disclaimed creation of a bailment).

¹⁸⁴ Cowley, *supra* note 180; but see *Martin, Lucas & Chioffi, LLP v. Bank of Am.*, 714 F. Supp. 2d 303, 310 (D. Conn 2010) (declining to enforce an exculpatory clause that the bank could not prove was in the original safe deposit agreement).

¹⁸⁵ See *Smith v. Peoples Bank of Elk Valley*, 1992 Tenn. App. LEXIS 477, *10 (holding that operation of safe deposit boxes meets the *Tunkl* factors for when exculpatory clauses are ineffective).

¹⁸⁶ 731 A.2d at 177.

¹⁸⁷ *Id.*

deposit companies cannot repudiate their bailee status by contract has not prevented companies from including such repudiations in their contracts.¹⁸⁸

Still, operators of safety deposit boxes, usually banks, have argued that they are not in possession of goods stored in safety deposit boxes. One argument that most courts have rejected is that because the bank has no knowledge of what is in the safety deposit box, it is not in possession.¹⁸⁹ A similar argument claims that deposit companies are not bailees because they are not in exclusive control of the bailment.¹⁹⁰ Neither has gained traction.¹⁹¹ As the court in *Cussen v S. California Sav. Bank* explained, “the very manner of conducting this somewhat peculiar line of business contemplates that the bailee shall not know the value of the thing deposited.”¹⁹² Cloud storage seems no different. Still, the lack of exclusive control is perhaps a reason to consider the bailment that cloud storage creates as a bare-naked bailment and not the more protective bailment to a common carrier.¹⁹³

Few cases have produced as much disagreement as *Bowdon v. Pelleter*, decided in 1315.¹⁹⁴ There, one William Bowdon delivered a locked chest to a widow, Emma Pelleter. The chest was later found in a field with its lock broken and the contents missing. Bowdon sued Pelleter for detinue, to which she responded that she had been robbed, losing her own property along with the chest. Pelleter claimed that he and neither gave

¹⁸⁸ See e.g., *Saribekyan v. Bank of Am., N.A.*, 2020 Cal. App. Unpub. LEXIS 25, at *6 (Jan. 3, 2020, No. B285607) (explaining that Bank of America’s safe deposit box contract attempted to repudiate “any relation of bailor and bailee”).

¹⁸⁹ See *Natl. Safe Deposit Co. v. Stead*, 95 N.E. 973, 977 (Ill. 1911) (“the fact that the safety deposit company does not know, and that it is not expected it shall know, the character or description of the property which is deposited in such safety deposit box or safe does not change” the bailment relationship”); see also *Lockwood v. Manhattan Stor. & Warehouse Co.*, 28 AD 68, 71 (N.Y. Sup. Ct. App. Div, 1st Dept 1898) (rejecting the argument that safety deposit boxes cannot create bailments lest “it be said that a warehouseman was not in possession of silks in boxes deposited with him as warehouseman, because the boxes were nailed up and he had no access to them.”); *Cussen v. S. California Sav. Bank*, 65 P 1099, 1100 (Cal. 1901) (“Indeed, the very manner of conducting this somewhat peculiar line of business contemplates that the bailee shall not know the value of the thing deposited.”); accord *Dumlao v. Atl. Garage, Inc.*, 259 A2d 360, 362 (D.C. 1969) (holding that a hotel garage was not the bailee of goods left in a car trunk because “acceptance of such contents must be based upon either express or imputed knowledge, such as where they are in plain view.”); but see *O’Malley v. Putnam Safe Deposit Vaults, Inc.*, 458 N.E.2d 752, n.8 (Ma. App. Ct. 1983) (“In Massachusetts, the liability of a bailee is not imposed with respect to the contents of a box or other container unless the alleged bailee has knowledge of such contents.”).

¹⁹⁰ *Seitz*, 959 S.W.2d at 461 (rejecting the argument that there was no bailment because there was no exclusive control); *Martin, Lucas & Chioffi, LLP v. Bank of Am.*, 714 F Supp 2d 303, 311 (D. Conn. 2010).

¹⁹¹ See *Steinhauser v. Repko*, 249 N.E.2d 567, 571-572 (Ohio Ct. Comm. Pl. 1969) (“The courts of Ohio seem divided as to whether a safe deposit box rental is a bailment, or, as the lease in this case itself provided, a landlord-tenant relationship”).

¹⁹² 65 P 1099, 1100 (Cal. 1901).

¹⁹³ See *Stevens v. The White City*, 285 U.S. 195, 200 (1932); see also *supra*, Part I.C.

¹⁹⁴ Y.B. 8 Ed. 2, 275. Beal has cataloged the documentary issues with transcripts of this case. *supra* note 6, at 160 n.4.

her the key nor informed her what was in the chest. Bowdon denied that the chest was locked. The records do not record the jury's ultimate verdict in the case.¹⁹⁵ The question before the court was whether delivery of a locked chest created a bailment in the contents of the chest. Holmes and Coke believed that the Pelleter could not be liable on these facts because Bowdon never trusted the contents of the chest to her.¹⁹⁶ Holt, writing in *Coggs*, found the chest to be irrelevant.¹⁹⁷ Story found the bailment relevant if the concealment of the goods in the chest was meant to induce the bailee to accept a bailment that she would not otherwise accept.¹⁹⁸

Because bailees duty of care creates insurance for the bailor against certain losses, bailees need to know the risk they are assuming. They can account for the risk either by charging a higher price for the bailment or by refusing the bailment altogether. Common carriers have no such luxury, but they have benefitted from several statutory interventions protecting them from outsized insurance risk.¹⁹⁹

While the facts of *Bowdon* are fanciful today, the economics of the transaction mirror self-storage, and no-knowledge cloud storage.²⁰⁰ In self-storage leases, individuals rent designated spaces from a storage company, fill the space with their goods, and put their own lock on the space. The lock is important: it is the only way for the lessee to control the space and mark it as their own.²⁰¹ The storage company neither has knowledge of what is in the storage space nor access to the space without cutting the lock.²⁰² While self-storage would likely create a bailment relationship, most states have self-storage statutes that protect storage companies from becoming bailees of their tenants. Still, out of an abundance of caution, industry convention is to require tenants to provide their own lock and avoid handling tenant property.²⁰³ It is far from clear whether these precautions would avoid creating a bailment relationship absent the statutory protection.

Although the facts of self-storage would likely create a bailment at common law, many states have implemented law that place the risk of loss on the tenant alone.²⁰⁴ The

¹⁹⁵ Stoljar, *supra* note 6, at 18.

¹⁹⁶ *Id.* at 19.

¹⁹⁷ 2 Ld. Raym. 909 at 914.

¹⁹⁸ Story §290; *see also* Stoljar, *supra* note 6, at 20 (explaining the evidentiary difficulty of reconstructing what was in the chest if indeed the bailee was liable).

¹⁹⁹ *See supra*, Part I.C.

²⁰⁰ No-knowledge cloud storage uses encryption to prevent the storage company from reading the files it holds at any point in the storage relationship. This is different from the services that companies like Dropbox employ when they scan files for contraband before encrypting them.

²⁰¹ Jones, *supra* note 44, at 1017.

²⁰² To be clear, the storage company might have rules about what cannot be stored and may have security cameras to promote safety, but this is insufficient information for the storage company to be said to know what is in the space.

²⁰³ Jones, *supra* note 44, at 1035.

²⁰⁴ Kan. Stat. Ann. § 58-818 (2005).

Kansas statute has language common to several states: “Unless the rental agreement specifically provides otherwise, the exclusive care, custody and control of any and all personal property stored in the leased space shall remain vested in the occupant.” This logic resembles that in *Bowdon*: because the chattel-owner’s lock separates the would-be bailee from the goods, the storage creates no bailment. Other states continue to recognize self-storage units as “bailments for hire”²⁰⁵ and codify that the bailee storage companies are liable for negligence unless the contract otherwise.²⁰⁶

Today, standard form self-storage contracts almost always disclaim liability for negligence.²⁰⁷ Under these contracts, courts regularly find that tenants bear the risk of theft, even where the storage company is aware of security problems.²⁰⁸ Putting the risk of loss on the tenant on these facts may occasionally shock tenants but is mostly consistent with the common law of bailments.²⁰⁹

The enforceability of these disclaimers distinguishes self-storage from other bailments.²¹⁰ For example, in *Kane v. U-Haul International, Inc.*, the Third Circuit found that an exculpatory clause in the rental contract prevented the tenant from recovering damages for the losses caused by a leak that the bailee knew about but failed to warn the tenant about.²¹¹ The court in *Kane* even explained that “failure to notify probably constituted gross negligence” but found the exculpatory clause effective as a matter of New Jersey law since the conduct was not “wanton or willful misconduct.”²¹² In other words, bailees cannot disclaim all liability, but courts will let them contract for a very low duty of care. In *Kane*, the court noted that a tenant who wanted additional protection could always purchase insurance.²¹³

Depending on the kind of encryption used, it may be practically impossible for cloud storage companies to access the content of the files stored in their infrastructure. With

²⁰⁵ *Gonzalez v. A-1 Self Stor.*, 795 A2d 885, 886 (N.J. 2000).

²⁰⁶ *Id.* (applying New Jersey Stat. Ann. 12A 7-204 (U.C.C. §7-204) to self-storage).

²⁰⁷ *Jones*, *supra* note 44, at 1022.

²⁰⁸ *Lathers v. U-Haul Co.*, 867 So. 2d 839, 842 (La. Ct. App. 2003). Under U.C.C. Article 7, bailees cannot disclaim liability for conversion for their own use. §7-204(b).

²⁰⁹ Recall that even as early as *Coggs*, Holt imagined that liability for loss would lie with bailors who left their property with unfit bailees. 92 Eng. Rep., at 111. Here, tenants are theoretically aware of the security situation in their neighborhood and ought not leave irreplaceable property where thieves are common. Of course, there is no guarantee that self-storage will be available in more secure neighborhoods. Similarly, courts have found that storage companies are not liable for losses cause by other tenants’ misconduct. *See Jones*, *supra* note 44, at 1026.

²¹⁰ Some states also have statutes giving dry cleaners similar rights over property left for more than 180 days. KRS § 376.300; Or. Rev. Stat. Ann. § 87.214; see also *Id.* at 1045 (“self-storage facility owners enjoy legal powers that do not make sense from the perspective of property law.”)

²¹¹ 218 Fed. App’x. 163, 167 (3d Cir. 2007).

²¹² *Id.*; see also *Jones*, *supra* note 44, at 1033 (arguing that storage companies are liable only for intentional bad fail that damages tenants’ property and breach of the storage contract).

²¹³ 218 Fed. App’x. at 167.

robust encryption, it is more difficult to argue that the cloud storage company possesses the file. After all, breaking the encryption is an order of magnitude more difficult than drilling a safe deposit box or cutting the lock on a chest. The arguments around *Bowdon v. Pelleter* begin to look more applicable to cloud storage if the storage company cannot assess the files and decide if the storage fee overcomes the risk of taking on the storage.

Cloud storage also raises questions about who is in possession of the files that may differentiate it from other kinds of storage. It is almost definitional that cloud storage is available on demand. This means that the person or company that owns the files may be manipulating them—perhaps even in possession of them—on a local computer while the files live on cloud infrastructure. On these facts, the storage company may be in possession of the files but perhaps not strictly exclusive possession.

For the purposes of bailment, it is not clear that it matters if the bailor can choose when and how to break exclusive possession. Consider a workplace parking garage: the employee is in possession of the car while driving it to and from work and perhaps even during the workday while retrieving items from the car. But the garage operator may still be a bailee in possession of the car for the remainder of the workday.²¹⁴ Still, the doctrine is not settled on these questions. Some courts have held that bailments only exist where the bailee has “such full and complete possession of it as to exclude, for the time of the bailment, the possession of the owner”²¹⁵ Where the owner does not intend to relinquish control, there is no bailment.²¹⁶ For example, a store clerk handing a good to a potential customer for inspection does not create a bailment.²¹⁷ But cloud storage necessarily involves relinquishing control. After all, the cloud storage company controls the infrastructure that facilitates the storage. The cloud storage relationship is more than the ephemeral custody of the customer inspecting goods, it is a change in where the goods live.

In sum, the distinction between cloud storage and warehouse storage is thin. The introduction of tech ensures that the storage occurs through different means but the relationship between the storage company and the client remains the same. Because the law of bailment polices that relationship, not the means of storage, the law of bailment should apply to cloud storage.

C. *Cloud Storage and the Duty of Care*

Having shown that cloud storage is analogous to the bailment of tangibles, the next step is to consider storage companies duty of care, and the extent to which they may waive those duties. Here, the kind of bailment matters since the kind of bailment determines the bailee’s obligations to the bailor.

²¹⁴ See Hyatt, (explaining the conditions under which garage operators can become the bailees of cars parked on their premises).

²¹⁵ Fletcher v. Ingram, 50 N.W. 424, 425 (Wisc. 1879).

²¹⁶ Brown on Personal Property §10.4.

²¹⁷ *Id.*

Where the cloud storage company receives payment—whether in dollars or data—from the users of its services, it is most analogous to a bailment for hire or bailment for mutual benefit.²¹⁸ In these cases, the default rule would be that the bailee company would owe its customers a duty not to act negligently with respect to the stored data. This standard might compel firms to maintain security protocol at least at industry norms and, more importantly, respond more promptly to reported security flaws.²¹⁹ Bailment will not be a panacea for the lax data privacy laws in the United States, but more robust protection against data loss may in turn prevent data exposure.

An aggressive application of the law of bailment may analogize unauthorized exposure of data to the law of misdelivery.²²⁰ Historically, bailees of all kinds were strictly liable when they delivered the bailed property to the wrong person. With tangible goods, assigning blame in the case of misdelivery is easy since only one party controls the delivery—the bailee. Indeed, that the bailee alone controls delivery is often used to justify the strict liability rule.²²¹ With cloud storage, customer error creates the breach or misdelivery.²²² A strict liability rule is more difficult to justify on these facts unless it is reserved for data breaches in which there is no customer error.²²³

Depending on the jurisdiction, the cloud storage company may be able to disclaim liability for negligent acts causing harm to customers files. This kind of exculpatory clause would alert clients to the possibility of data loss. Giving consumers the option to buy insurance for an additional fee may increase the likelihood that a court will enforce the

²¹⁸ See *supra*, Part I.B.

²¹⁹ Present law provides little incentive for companies to respond promptly to data breaches. See Edward J. McAndrew, *The Hacked & the Hacker-for-Hire: Lessons from the Yahoo Data Breaches (So Far)*, THE NATIONAL LAW REVIEW (May 11, 2018), <https://www.natlawreview.com/article/hacked-hacker-hire-lessons-yahoo-data-breaches-so-far> (describing how Yahoo allowed hackers to exploit a security flaw for years). There are already significant questions about the security of cloud storage. Kim S. Nash, *Tech Chiefs Press Cloud Suppliers for Consistency on Security Data*, WALL ST. J. (May 20, 2020), <https://www.wsj.com/articles/tech-chiefs-press-cloud-suppliers-for-consistency-on-security-data-11589967000>.

²²⁰ Juliet E Moringiello, *Warranting Data Security*, 5 23, 82 n.166 (“One can certainly think of a data breach as a misdelivery of personal payment data.”).

²²¹ See Merrill & Smith, *supra* note 6, at 815–16.

²²² James Rundle, *Human Error Often the Culprit in Cloud Data Breaches*, WALL ST. J. (Aug. 27, 2019), <https://www.wsj.com/articles/human-error-often-the-culprit-in-cloud-data-breaches-11566898203>.

²²³ See Ryan Vacca, *Viewing Virtual Property Ownership through the Lens of Innovation*, 76 TENN. L. REV. 33, 51–53 (2008) (explaining how exculpatory clauses for lost property in virtual environments might promote innovation).

exculpatory clause.²²⁴ Some courts might require that the exculpatory clause is only enforceable where it is in place at contract formation.²²⁵ Efforts to disclaim liability for gross negligence and intentional acts are less likely to be effective.

Although there is significant variability among modern precedents on the enforceability of exculpatory clauses, there are a few themes. First, exculpatory clauses are ineffective when the bailee has allegedly converted the bailors' property.²²⁶ Second, clauses excluding liability for gross negligence and intentional malfeasance are often held unenforceable on grounds of public policy.²²⁷ Third, clauses excluding liability for negligence are disfavored, but enforceable as long as they clearly state what they disclaim and are not otherwise unconscionable or contrary to the public interest.²²⁸ There is enough room in the tests for enforceability that it can be difficult to know *ex ante* which clauses courts will enforce.²²⁹

Courts have particularly struggled to determine when efforts to lower bailee's duty of care are contrary to the public interest. In the leading case on the subject, *Tunkl v Regents of University of California*,²³⁰ the California Supreme Court the challenge as follows: "The social forces that have led to such characterization are volatile and dynamic. No definition of the concept of public interest can be contained within the four corners of a

²²⁴ See *Tunkl*, 383 P.2d 445, 445-46 (Cal. 1963) (explaining that exculpatory clauses may affect the public interest where the beneficiary "makes no provision whereby a purchaser may pay additional reasonable fees and obtain protection against negligence"); see also *Kanovsky v. At Your Door Self Stor.*, 255 Cal. Rptr.3d 578, 579 (Ct. App. Cal. 2019) (enforcing a clause disclaiming liability for water damage in a self-storage contract where the contract offered customers an insurance option that the customer declined).

²²⁵ *Saribekyan v. Bank of Am., N.A.*, 2020 Cal. App. Unpub. LEXIS 25, at *6 (Jan. 3, 2020, No. B285607).

²²⁶ See *Aetna Cas. & Sur. Co. v. Higbee Co.*, 76 N.E.2d 404, 408-09 (Ohio Ct. App. 1947); see also §7-204(b) ("Damages may be limited by a term in the warehouse receipt or storage agreement limiting the amount of liability in case of loss or damage beyond which the warehouse is not liable. Such a limitation is not effective with respect to the warehouse's liability for conversion to its own use.").

²²⁷ Restatement (Second) of Contracts § 195(1) (1988); but see Jason R. Harris, *Sources of Martina Liability for Storage and Repairs Ashore and the Effectiveness of Red Letter Clauses*, 37 J. MAR. L. & COM. 545, 551-58 (2006) (tracing a split among courts about whether maritime law allows exculpatory clauses to include all liability).

²²⁸ For example, the Arkansas Supreme Court has held that exculpatory clauses are enforceable if the party signing the release is knowledgeable about the liability being released, that party benefits from the transaction, and the contract is fairly entered into. *Jordan v. Diamond Equip. & Supply Co.*, 207 S.W.3d 525, 530 (2005). See also, *Merrill & Smith*, *supra* note 6, at 815, and *Martins et al.*, *supra* note 12, at 1286-90.

²²⁹ See *Vacca*, *supra* note 222, at 51-52 (explaining how uncertainty about the enforceability of exculpatory clauses shapes tech innovation) and James F. Hogg, *Consumer Beware: The Varied Application of Unconscionability Doctrine to Exculpation and Indemnification Clauses in Michigan, Minnesota, and Washington*, 2006 MICH. ST. L. REV. 1011 (2006) (exploring how three states take three different approaches to exculpatory clauses, leading to different substantive outcomes in cases).

²³⁰ 383 P.2d 441, 443 (Cal. 1963).

formula.” Still, the court articulated a six-factor test for determine whether transactions affect the public interest:

It concerns a business of a type generally thought suitable for public regulation. The party seeking exculpation is engaged in performing a service of great importance to the public, which is often a matter of practical necessity for some members of the public. The party holds himself out as willing to perform this service for any member of the public who seeks it, or at least for any member coming within certain established standards. As a result of the essential nature of the service, in the economic setting of the transaction, the party invoking exculpation possesses a decisive advantage of bargaining strength against any member of the public who seeks his services. In exercising a superior bargaining power, the party confronts the public with a standardized adhesion contract of exculpation and makes no provision whereby a purchaser may pay additional reasonable fees and obtain protection against negligence. Finally, as a result of the transaction, the person or property of the purchaser is placed under the control of the seller, subject to the risk of carelessness by the seller or his agents.²³¹

Hailed as the “true rule” of exculpatory clauses, *Tunkl* seemed to suggest that enforceability was at the discretion of the court.²³² Predictably, this test has produced convoluted results when courts review exculpatory clauses in bailments contracts.²³³

The extent to which exculpatory clauses are disfavored depends, in part, on the kind of bailee. So-called “professional bailees” have the most difficulty enforcing exculpatory clauses. For example, in *Griffin v Nationwide Moving & Storage Co.*,²³⁴ the Connecticut Supreme Court explained that “[a]lthough courts have tended to recognize that limitation of liability clauses for negligence may be validly contracted for by an ordinary bailee, they have demonstrated a strong tendency to hold contracts of this type against public policy when entered into by bailees in the course of dealing with the general public.”²³⁵ Likewise, the Supreme Court of Washington has held repeatedly that “professional bailees may not limit their liability for negligence.”²³⁶ Courts look to public policy to justify these limitations on the freedom of contract. Hence, in *Ellerman v Atlanta Am. Motor Hotel Corp.*,²³⁷ a case involving a car that disappeared from a hotel parking lot, the Court of Appeals of Georgia explained that the reason that “[u]nlike an ‘ordinary’ bailee the

²³¹ *Id.* at 445-46.

²³² Daniel I. Reith, *Contractual Exculpation from Tort Liability in California--The True Rule Steps Forward Comment*, 52 CALIF. L. REV. 350, 351 (1964); *see also* Martins et al., *supra* note 12, at 1286-90 (explaining the legacy of *Tunkl*).

²³³ Darby Dickerson produced a comprehensive overview of the law as of 1988 in her Note. *supra* note 14, at 132-34. The case law since then has added little certainty.

²³⁴ 446 A.2d 799 (Conn. 1982).

²³⁵ *Id.* at 804.

²³⁶ *Am. Nursery Prods. v. Indian Wells Orchards*, 797 P.2d 477, 485 (1990).

²³⁷ 191 S.E.2d 295 (Ga. App. 1972).

‘professional’ bailee is often precluded from limiting by contract liability for his own negligence” is that “the public, in dealing with innkeepers, lacks a practical equality of bargaining power and may be coerced to accede to the contractual conditions sought by the innkeeper or else be denied the needed services.”²³⁸ In many cases, state legislatures have intervened with statutes limiting bailee’s risk notwithstanding courts’ reluctance to do so.²³⁹

Beyond professional bailees and misdelivery, several courts have indicated that they will not enforce exculpatory clauses attempt to avoid the bailment relationship altogether. For example, a court may hold a bailee to a duty of care even where the underlying agreement purports to create a license with no duty of care.²⁴⁰ Similarly, courts have refused to enforce caps bailee liability that effectively eliminate the duty of care.²⁴¹

Recent commentators have argued that exculpatory clauses are allowing contract to displace guardrails established by tort and other private law doctrines.²⁴² While bailment has often been an exception to this trend, the rise of digital property creates a new opening for allowing contract to replace the traditional private law constraints on contract. Courts should not let this happen.

In recent decades, software has evolved away from being a product that customers purchase and own into being a service to which customers subscribe. This shift “focuses on separating the *possession* and *ownership* of software from its *use*.”²⁴³ This focus on use puts contract at the center of the law of technology. For consumers, these contracts are classic adhesion contracts: tech firms set the terms then consumers either accept the terms or walk away. Larger firms may be able to customize their technology contracts.²⁴⁴ Either way, the elevation of the service contract tends centers consent at the expense of the procedural and substantive guardrails that other private law doctrines have historically provided. That is, focusing on the service contract alone limits the analytical tools through which we might understand the technology.

²³⁸ *Id* at 296.

²³⁹ *See supra*, Part I.A.

²⁴⁰ *See e.g.*, *Allen v. Hyatt Regency-Nashville Hotel*, 668 S.W.2d 286, 288-90 (Tenn. 1984) (explaining that the defendant parking garage could not use language printed on the back of a ticket to transform a bailment into a license to avoid liability for harm to the car).

²⁴¹ *See e.g.*, *Allright, Inc. v. Elledge*, 508 S.W.2d 864, 869 (Tex. App. 1974) (rejecting a \$100 liability cap in a parking contract as void against public policy); *see also* *Dickerson*, *supra* note 14, at 139–42 (explaining courts’ reluctance to enforce exculpatory clauses in bailment agreements where the parties have unequal information and bargaining power).

²⁴² *See* *Martins et al.*, *supra* note 12; *Fairfield*, *supra* note 16.

²⁴³ M. Turner et al., *Turning Software into a Service*, 36 *COMPUTER* 38 (Oct. 2003) (emphasis in original).

²⁴⁴ *But see* *OVERLY & KALYVAS*, *supra* note 12 (explaining that even for businesses there is often little room to negotiate the terms of technology contracts).

Even in jurisdictions that allow bailees to disclaim liability for negligence, there is no guarantee that courts will enforce such a clause in a cloud storage contract. Courts may find such a clause to be unconscionable or against the public interest according to the factors in *Tunkl*. In a dispute over lost data, both the cloud storage company and the upset client would have strong arguments on their side.

The client would argue that there is asymmetric information about the risk of either loss of possession or loss of privacy. Most cloud storage clients cannot vet the security of the system. It is unobservable in a way that the security around self-storage or a safe deposit box is not. Indeed, merely allowing clients to vet the security of cloud storage infrastructure would likely create risk for other users. For these reasons, allowing the bailee can also use contract to lower their duty of care or cap their liability may create significant moral hazard.²⁴⁵ With enforceable waivers, the bailee would face only limited incentives to act carefully from ex ante market forces, and similarly limited incentives from ex post liability rule.

For their part, cloud storage providers can argue that their exculpatory clause poses no grave risk to the public interest because there is a competitive market offering several options. Moreover, most digital files can be copied infinitely, enabling clients to efficiently insure their own data. Finally, the industry standard may coalesce around broad disclaimers for lost data, such that consumers should expect to maintain duplicates of their data. Clauses, like those in some of the contracts in the sample, that require customers to maintain a backup of their data may nudge courts towards enforcing exculpatory clauses. It is even possible that this duplication norm is efficient if marginal increases in security on any one cloud are comparatively expensive.

Differentiation within the industry on the level of security provided may suggest that enforcing some exculpatory clauses is in the public interest, assuming that firms price their products accordingly. Individuals and firms that need additional protection for their digital property might choose a service offering more premium protection. This differentiation already exists in the market for storage of tangible chattel, just compare self-storage to the safe deposit box. The law can trust consumers to choose among cloud storage providers just as it trusts consumers to choose between safe deposit boxes and self-storage. Alternatively, clients can contract with the cloud storage provider for a higher standard of care, much like a person can deliver a chattel to a bailee “for safekeeping.” The ability to contract for a higher duty of care is as old as the law of bailment itself.²⁴⁶ Presumably, cloud storage companies would charge a premium for taking on such risk.

These same arguments likely support allowing cloud storage providers to cap their liability based on the fee charged. These arguments are especially strong where the companies have no knowledge of the value of the data their clients store with them. Such a cap would be consistent with many of the statutory interventions in self-storage and

²⁴⁵ See Merrill & Smith, *supra* note 6, at 815 (explaining information asymmetries in bailments).

²⁴⁶ See *supra*, Part I.A.

U.C.C. Article 7. While safe deposit companies have not been able to avoid liability as bailees for hire, they have attempted to cap their liability by contract. For example, in *Saribekyan v. Bank of America, N.A.*, the bank allegedly lost millions of dollars of its client's valuables when it drilled her box in connection with closing the branch.²⁴⁷ The safe deposit rental contract purported to limit damages to 10 times the annual rent on the box. Bank of America argued that this provision was necessary because it had no knowledge of the content of the boxes. The trial court enforced the liability cap, but the Court of Appeal reversed, explaining that "if this is a confidential, but not safe or secure, box, then it needs to expressly disclose that fact and to disclaim in a much more obvious fashion that it is renting a deposit box that may ultimately prove to be insecure."²⁴⁸ The court concluded that the limit was unconscionable given the disconnect between the service that purported to provide in safe deposit boxes and the service actually described in the contract.²⁴⁹ Whether other courts follow *Saribekyan* remains to be seen.

Where the cloud storage company offers its services for free, particularly if it is not monetizing customer data, the cloud storage company may be more analogous to Holt's volunteer or gratuitous bailee than to a bailment for hire. Still, having made themselves available as a bailee, the volunteer owes the bailor a minimal duty of care.²⁵⁰

Recognizing cloud storage as a bailment does impose a duty of care on cloud storage providers, but it also offers protections from liability. A cloud storage company facing lawsuits from losses attributable to hacking may find refuge in the long line of cases holding that bailees are not liable for losses attributable to theft provided that they exercise reasonable care in preventing the theft.²⁵¹ Somewhat more fancifully, if the hack comes from abroad, they may find an especially effective shield in the old enemy of the king defense,²⁵² which protected bailees from liability when said enemies injured or destroyed

²⁴⁷ *Saribekyan v. Bank of Am., N.A.*, 2020 Cal. App. Unpub. LEXIS 25, at *8-10 (Jan. 3, 2020, No. B285607).

²⁴⁸ *Id.* at *29-30.

²⁴⁹ *Id.*

²⁵⁰ See *Thorne v. Deas*, 4 Johns 84 (N.Y. 1809) (explaining that once a volunteer undertakes a bailment, he owes the bailor a duty of care).

²⁵¹ See *supra*, Part I.A.

²⁵² Some of the most curious rules of bailment impose liability on those charged with detaining others, usually pursuant to the criminal law. Sheriffs and goalers were kinds of public employment that traditionally carried a higher standard of care. Wardens were historically thought to be bailees with the prisoners themselves being the bailment. Courts imposed a particularly high duty of care on wardens, holding them responsible for prisoners' escape even if "traitors or rebels" assisted in the escape. Only acts of god or enemies of the kind would discharge wardens from their liability. Beale, *supra* note 6, at 163. See also Southcott, 43 Eliz. 44 (1601) ("if the enemies of the king break a prison and let the prisoners at large, the warden of the prison may discharge himself for the escape; but if the prison be broken by traitors or rebels it is otherwise, because he has a remedy over against them, and it was his fault that he did not guard them more careful."); *Coggs v. Bernard*, 92 Eng. Rep. 107, 112 (1703) ("The law charges this person thus intrusted to carry goods, against all events but acts of God and of the enemies of the King.").

the stored property. Though born in a world a feuding states, the defense remains vibrant in admiralty given the persistent threat of piracy.²⁵³

In sum, because bailees' duty of care arises out of their relationship with their bailors, regardless of contract, it is far from clear that contract alone can undo that duty. Were these bailments of tangible goods, there would be ample case law holding that parties cannot disclaim the bailment relationship. Cloud storage is sufficiently analogous to traditional storage that this case law should apply. That is, we should not allow the novelty of the technology to overshadow the legal frameworks that we have for analyzing its relationships.

IV. EMPIRICAL ANALYSIS OF CLOUD STORAGE CONTRACTS

Having outlined the basics of bailment doctrine and the mechanics of cloud storage, it is time to ask how cloud storage companies understand their storage obligations. To study this question, I pulled a sample of 61 contracts used by 58 cloud storage companies and reviewed their terms. This Part describes the sample, its limitations, and findings. This study does not purport to be comprehensive. Rather, its goal is to provide a snapshot of industry norms in early 2020.²⁵⁴

A. Methodology and Limitations

To build a sample of contracts from cloud storage providers, I needed a workable definition of cloud storage company. Leaning on NIST's definition, I defined cloud storage companies as any company that provides cloud-based data storage services to its customers as a core part of its business. This definition is meant to exclude two types of related businesses: those that primarily provide data management services for companies that choose to keep their data on their own local network and companies that only store incidental data in cloud-based systems. For example, a network security business that stores its customer relationship data in the cloud would not be on my initial list, nor would a dentist with a digital address book would be.

To build this list I relied on media reports to develop a list of companies providing cloud storage services. This list included both consumer-facing companies, like Dropbox and Facebook,²⁵⁵ and business-oriented companies, like Amazon Web Services (AWS). This initial list included companies in a range of sizes, from mid-sized firms like Wasabi,

²⁵³ King Ocean Cent. Am. v. Precision Cutting Servs., 717 So. 2d 507, 511 (Fla. 1998) (explaining the application of the enemies of the king defense to common carriers at sea); *see also* Cent. of G. R. Co. v. Lippman, 36 S.E. 202, 206 (1900) (railroads); (Montgomery Ward & Co. v. N. Pac. Term. Co., 128 F.Supp 475, 492 (D. Or. 1953) (railroads and trucking lines).

²⁵⁴ Although 2020 was a highly unusual year given the global coronavirus pandemic and disputed election in the United States, there is no reason to assume that those events would have caused companies to make changes to their cloud storage contracts.

²⁵⁵ Although Facebook is best known as a social media company, both Facebook and Instagram enable users to store large numbers of photos and other media.

to giants like AWS and Google. This list was by no means comprehensive. It almost certainly excludes cloud storage companies that have attracted little media attention.

Having built an initial list of 58 companies with 61 cloud storage services,²⁵⁶ I searched these companies' websites for the contracts that they offered prospective customers. Of the cloud storage products in the sample, I found the storage contracts for 59 of them. Firms typically styled these contracts as "terms of use" or "terms of service." Working with a team of research assistants, I downloaded these contracts over the summer of 2020. These contracts comprise the sample.²⁵⁷ Having pulled the sample of contracts, I then read them and recorded any terms relating to the companies' liability for damaged, lost, stolen, or accidentally released data.

This sample has several key limitations. First, as described above, it is not drawn from any comprehensive list of cloud storage companies. It is possible that the companies that I was able to identify through media reports are meaningfully different from the companies that I was unable to identify. Relying on media reports also likely skews the sample towards consumer-facing companies. Second, the sample does not include any contracts that firms did not make publicly available on their website. While few companies appeared to offer potential clients the opportunity to negotiate the terms of their agreement, it is reasonable to assume that some clients, especially large clients, can and do negotiate for nonstandard terms. These customized contracts are not readily available on public websites, and therefore not in the sample. Finally, in many cases, it is impossible to determine if a company is providing its own cloud infrastructure or relying on another company, notably AWS. This means that I cannot know if the contract between the cloud infrastructure provider and the cloud storage company influences the terms that the cloud storage company makes publicly available. Despite these limitations, this sample provides a snapshot of the terms that cloud storage companies offer to consumers and business unwilling or unable to negotiate custom terms.

B. Results and Analysis

A manual review of the contracts in the sample revealed that 52 had one or more terms attempting to limit liability for data loss. MSP 360's disclaimer is typical. It provides that "We are not responsible for content residing on the Website. In no event shall we be held liable for any loss of any Content. It is your sole responsibility to maintain appropriate backup of your Content. ...We Make no guarantee that the data you need will be available."²⁵⁸ Microsoft Azure's terms specify that "in no event" will Microsoft be liable for data loss.²⁵⁹ Consumer-facing products like Box, Dropbox, Evernote, Flickr, and

²⁵⁶ Three companies in this sample, Facebook, Google, and Microsoft offer multiple cloud-storage products with distinct contracts.

²⁵⁷ My team also attempted to use the WayBack machine to find older versions of these contracts, but the coverage was too spotty to be useful.

²⁵⁸ Cloudberry Lab (since renamed MSP 360) (pulled 2020-04-30).

²⁵⁹ Microsoft Azure (pulled 2020-04-30).

iCloud all contain similar terms. One of the most aggressive disclaimers in the sample belongs to Dribbble, which caters to designers. Dribbble has customers agree that “under no legal theory” with it be liable for loss of data.²⁶⁰

Some companies include what David Hoffman calls “precatory fine print”—instructions dictating how consumers should use the product or service.²⁶¹ In this sample precatory fine print often specifies that customers should maintain at least one additional copy of their data. For example, Rackspace’s contract provides that “Although the service may be used as a backup service, Customer agrees that Customer shall maintain at least one additional copy of Customer’s Customer Data somewhere other than on the Rackspace Public Cloud Services.” Hostmonster’s contract says, “you will be solely responsible to for backing-up all Subscriber Content, including HostMonster’s servers. This is an affirmative duty.” Photobucket uses similar terms.²⁶² These terms put customers in a bind: to lose one’s data is to be in breach of contract.

Only one contract actually used the term “bailment” at the time of this study. BackupVault’s contract provides that “No bailment or similar obligation is created between the Subscriber and Host-it Ltd with respect to the Subscriber’s stored encrypted data.”²⁶³ Amazon Web Service’s contract explicitly disclaimed “any duties of a bailee or warehouseman” in 2017,²⁶⁴ but that language is not in the contract available on its website at the time of this study.

Beyond limiting their liability for lost data, 38 contracts in the sample explicitly reserve the right to delete customer data. Some specify that they will provide notice before deleting data, but others reserve the right to delete data at their discretion. Some tie this right to delete to non-payment or violation of the terms of use, but most of these clauses leave the company with broad discretion over when to delete customer data.

V. COMPLICATIONS & IMPLICATIONS

A. *The Missing Common Law*

Since the Middle Ages, common law courts have been the institution charged with promulgating the law of bailment and adjusting it to accommodate emerging forms of property and new technologies. While the common law process is imperfect, it guaranteed that the law was constantly subject to revision. Any case presenting new technology would challenge the court hearing the case to fit that technology into existing law.

Over the past century, the common law has been left to wither. Its replacements, codification, arbitration, and to a lesser extent, federal diversity jurisdiction, are hardly as

²⁶⁰ Dribbble TOS (pulled 2020-06-25).

²⁶¹ David A. Hoffman, *Relational Contracts of Adhesion*, 85 U. CHI. L. REV. 1395, 1398 (2018).

²⁶² Photobucket TOS (pulled 2020-06-25).

²⁶³ BackupVault Term of Service (pulled 2020-04-30).

²⁶⁴ Amazon 2017 (on file with author).

robust.²⁶⁵ For over a century, commentators have hotly debated the merits of the common law as compared to codification.²⁶⁶ As state legislatures have codified the law of bailment, they have potentially prevented it from evolving to accommodate new technologies such as cloud storage.²⁶⁷ For example, if a state has a bailment statute that covers only tangible goods, a judge hearing a case about digital property must decide whether the statute is inapplicable to digital property or the statute prohibits bailments of digital property. The latter position is arguably more deferential to the legislature. It may be especially appealing when suspicion of judicial overreach runs high. To be sure, legislatures can and do periodically update the law, but that process is tied less to the needs of any one case and more to the political economy.

The shift away from traditional common-law judging suggests that only a statute will firmly locate cloud storage in the law of bailment. One solution is to codify the duty of care that cloud storage providers owe their clients. This approach has the benefit of directly tackling the problem at hand, but it risks inserting rigid code into a rapidly evolving space.

The second force limiting the common law's adaptation to new technology is arbitration.²⁶⁸ Digital storage is always the creature of an explicit contract—the terms of service. Cloud storage companies almost always include arbitration provisions in these terms,²⁶⁹ meaning that if one did lose customers' data, it is extremely unlikely that there would ever be a precedential court opinion explaining whether, and if so, how, cloud storage companies act as bailors for their customers.²⁷⁰

Given the value of the data stored on the cloud, the uncertainty around the applicable law is remarkable. We might attribute some of that uncertainty to the lack of significant

²⁶⁵ See Samuel Issacharoff & Florencia Marotta-Wurgler, *The Hollowed out Common Law*, 67 UCLA L. REV. 600 (2020) (finding that contracts involving newer technologies lack adjudication by courts of apex jurisdiction).

²⁶⁶ See generally Aniceto Masferrer, *The Passionate Discussion among Common Lawyers about Postbellum American Codification: An Approach to Its Legal Argumentation*, 40 ARIZ. ST. L.J. 173 (2008) (tracing the history of the debate between codification and the common law).

²⁶⁷ See Aniceto Masferrer, *Defense of the Common Law against Postbellum American Codification: Reasonable and Fallacious Argumentation*, 50 AM. J. LEGAL HIST. 355, 388 (2008) (explaining that a common argument against codification was that codes were rigid).

²⁶⁸ See generally MARGARET JANE RADIN, *BOILERPLATE: THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW* (Princeton University Press 2014) (explaining how arbitration pushes the resolution of publicly-imposed obligations into private tribunals).

²⁶⁹ See David Horton, *Infinite Arbitration Clauses*, 168 U. PA. L. REV. 633, 657–60 (Jan. 2020) (arguing that companies have been expanding the scope of their arbitration clauses beyond the agreements that contain the arbitration provision); and *Mey v. DIRECTV*, 971 F.3d 284, 287 (4th Cir. 2020) (holding that companies may compel arbitration even where the relevant arbitration provision is only in a contract between the consumer and an affiliated company).

²⁷⁰ See J. Maria Glover, *Disappearing Claims and the Erosion of Substantive Law*, 124 YALE L.J. 3052, 3076–81 (2015) (explaining how arbitration thwarts the public evolution of the law).

losses of data stored in the cloud, but that alone does not justify the uncertainty. After all, courts developed the law of bailment over a myriad of small cases—individual coats, horses, and other small chattels. From MegaUpload to Tumblr and beyond, these kinds of small losses have already occurred. What is more, it is not clear how the law of cloud storage can become more certain. Not only are their few cases in state courts over which to develop precedent, but given piecemeal codification, it is unclear that courts will believe themselves to be institutions competent to promulgate rules.

Absent any law of bailment that contemplates cloud storage, the law of contract will be its alpha and omega. While contract has the benefit of private ordering, or at least the fiction thereof, it is potentially inefficient. The law of bailment has always been a system of default rules that spare parties inefficient negotiations for routine transactions. Eliminate those defaults and either parties must negotiate even small deals, or the less powerful party must accept the terms on offer. That is, cloud storage could become another topic of contract-as-product.²⁷¹

Finally, even if the question of whether cloud storage creates a bailment was before a court, it would likely be a federal court sitting in diversity jurisdiction. Cloud storage, is, almost by definition, accessible anywhere meaning that the clients who could experience data loss are likely to be diverse to the cloud storage company. Such a court would look to the state common law but might feel less empowered to push the boundaries of that law. And even if it did, its opinion would not become the new common law of the applicable state but would stand on its own as law outside the law.²⁷²

B. *The Fourth Amendment*

Recognizing that cloud storage creates a bailment relationship may shape the future of Fourth Amendment jurisprudence.²⁷³ In *Carpenter v. United States*,²⁷⁴ the Supreme

²⁷¹ See Russell Korobkin, *Bounded Rationality, Standard Form Contracts, and Unconscionability*, 70 U. CHI. L. REV. 1203, 1206 (2003) (“Terms that govern the contractual relationship between buyer and seller are attributes of the product in question, just as are the product’s price and physical attributes.”); and Margaret Jane Radin, *Boilerplate Today: The Rise of Modularity and the Waning of Consent Boilerplate*, 104 MICH. L. REV. 1223, 1230 (2006) (“The collapse of contract into product has conceptually been in the offing for a long time; but it has really come to fruition now that both terms and products are digitized.”).

²⁷² Issacharoff & Marotta-Wurgler, *supra* note 264, at 607–8.

²⁷³ Eric Johnson, *Lost in the Cloud: Cloud Storage, Privacy, and Suggestions for Protecting Users’ Data*, 69 STAN. L. REV. 867, 885–95 (2017); Aaron J. Gold, *Obscured by Clouds: The Fourth Amendment and Searching Cloud Storage Accounts through Locally Installed Software*, 56 WM. & MARY L. REV. 2321, 2324–25 (2015); See Laurie Buchan Serafino, *I Know My Rights, So You Go’n Need a Warrant for That: The Fourth Amendment, Riley’s Impact, and Warrantless Searches of Third-Party Clouds*, 19 BERKELEY J. CRIM. L. 154, 162–63 (2014); David A Couillard, *Defogging the Cloud: Applying Fourth Amendment Principles to Evolving Privacy Expectations in Cloud Computing*, 93 MINN. L. REV. 35 (2009); see also Lucas Issacharoff & Kyle Wirsha, *Restoring Reason to the Third Party Doctrine*, 100 MINN. L. REV. 985, 993 (2016) (contemplating the intersection of cloud storage and the third-party doctrine).

²⁷⁴ 138 S. Ct. 2206 (2018).

Court held that the Fourth Amendment protects cell phone location information held by cell phone service providers. *Carpenter* appeared to endorse the idea that some technological innovations as the “modern-day equivalent” of searches subject to the Fourth Amendment.²⁷⁵

Carpenter is a departure away from a privacy-based theory of the Fourth Amendment towards a positive law approach.²⁷⁶ In its decision in *Katz v. United States*,²⁷⁷ the Supreme Court held that searches trigger the Fourth Amendment when they implicate an “expectation of privacy” that “society is prepared to recognize as ‘reasonable.’”²⁷⁸ Over time, the Court recognized the third-party doctrine as an exception to the reasonable expectation of privacy test. The third-party doctrine provided that individuals have no reasonable expectation of privacy to information provided to third parties.²⁷⁹ *Carpenter* appears to scales back the third-party doctrine, after all, the cell phone location data at issue in the case was held not by the target of the search, but by that individual’s cell phone service provider. In doing so, the justices looked to other areas of law for a place to anchor search doctrine.

For the purposes of this Article, the relevant question is how these tests interact with cloud storage. On the one hand, many cloud storage customers take great care and expense to preserve the privacy of the information that they store in the cloud. On the other hand, the cloud storage provider would seem to be the classic third party, especially where the cloud storage can and does read its clients’ files for its own purposes. The problem of how technological innovations interact with the Fourth Amendment is not new.²⁸⁰ In *Kyllo v. United States*,²⁸¹ which held that police need a warrant to scan a home with a thermo imaging device, the court grappled with the question of “what limits there are upon this power of technology to shrink the realm of guaranteed privacy.”²⁸²

Fourth Amendment scholarship is rich with theories about how to square the amendment’s protections with technological innovations.²⁸³ Prior to *Carpenter*, a few

²⁷⁵ *Carpenter*, 138 S. Ct. at 2222 (praising Justice Kennedy’s “modern-day equivalent” test); see also Paul Ohm, *The Many Revolutions of Carpenter*, 32 HARV. J. L. & TECH. 357, 360 (2019).

²⁷⁶ Daniel Epps, *Justifying the Fourth Amendment* (working paper on file with author).

²⁷⁷ 389 U. S. 347 (1967).

²⁷⁸ *Id.* at 361.

²⁷⁹ *Smith v. Maryland*, 442 U. S. 735, 743–744 (1979) (use of a pin register to log phone calls does not violate the Fourth Amendment because the information is disclosed to the phone company); *United States v. Miller*, 425 U. S. 435, 443 (1976) (no reasonable expectation of privacy in bank record).

²⁸⁰ See Matthew Tokson & Ari Ezra Waldman, *Social Norms in Fourth Amendment Law*, 120 MICH. L. REV. __ (2021).

²⁸¹ 533 U.S. 27 (2001).

²⁸² *Id.* at 34-35.

²⁸³ E.g., David Alan Sklansky, *Too Much Information: How Not to Think about Privacy and the Fourth Amendment*, 102 CALIF. L. REV. 1069, 1119–21 (2014) (reconceptualizing the privacy violations of electronic surveillance).

leading theories looked to property, among other sources, for a more meaningful anchor than a “reasonable” “expectation of privacy.” Notably, Will Baude and James Stern argued that the positive law should be a floor for Fourth Amendment protections.²⁸⁴ They would have courts ask, “whether it was unlawful for an ordinary private actor to do what the government’s agents did.”²⁸⁵ This suggests that understanding how technology fits into traditional private law concepts, like bailment, is essential to understanding how the Fourth Amendment interacts with this technology.²⁸⁶

Justice Gorsuch addressed this question in his dissent in *Carpenter*.²⁸⁷ He observed how smartphones and other technology have rapidly shifted how individuals “do most everything.”²⁸⁸ He explained that “[e]ven our most private documents—those that, in other eras, we would have locked safely in a desk drawer or destroyed—now reside on third party servers.” Under *Smith v. Maryland*²⁸⁹ and *United States v. Miller*,²⁹⁰ the Fourth Amendment would permit police to search the digitally stored files without a warrant, “on the theory that no one reasonably expects any of it will be kept private.”²⁹¹ The rule in both cases is categorical: any disclosure to a third party destroys the reasonable expectation of privacy. The problem with this argument, according to Justice Gorsuch, is that “no one believes that, if they ever did.”²⁹²

Justice Gorsuch asked a rhetorical question that highlights the absurdity of the doctrine: “Can the government demand a copy of all your e-mails from Google or Microsoft without implicating your Fourth Amendment rights?”²⁹³ Criticizing the third-party doc-

²⁸⁴ See William Baude & James Y. Stern, *The Positive Law Model of the Fourth Amendment*, 129 HARV. L. REV. 1821 (2016); Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 809–14 (2004); but see Sherry F. Colb, *A World without Privacy: Why Property Does Not Define the Limits of the Right against Unreasonable Searches and Seizures Correspondence*, 102 MICH. L. REV. 889 (2004) and Richard M. Re, *The Positive Law Floor*, 129 HARV. L. REV. F. 313 (2016).

²⁸⁵ Baude & Stern, *supra* note 282, at 1826.

²⁸⁶ See Ian Samuel, *Carpenter and the Property Vocabulary*, HARVARD LAW REVIEW BLOG (Dec. 8, 2017), <https://blog.harvardlawreview.org/carpenter-and-the-property-vocabulary/> (exploring the usefulness of bailment for Fourth Amendment purposes).

²⁸⁷ 138 S. Ct. at 2262.

²⁸⁸ *Id.*

²⁸⁹ 442 U. S. 735 (1979).

²⁹⁰ 425 U. S. 435, 443 (1976).

²⁹¹ 138 S. Ct. at 2262.

²⁹² *Id.*; see also Orin Kerr, *The Case for the Third-Party Doctrine*, 107 MICH. L. REV. 561, 564 (2009) (describing the third-party doctrine as “not only wrong, but horribly wrong” and collecting criticism).

²⁹³ 138 S. Ct. at 2262. Justice Gorsuch also asked whether the government can “secure your DNA from 23andMe without a warrant or probable cause?” *Id.* This Article will put that second question aside for now because it is possible that there is some distinction between data that an individual creates and stores with a third party and data that the third party creates then stores for the individual.

trine, Justice Gorsuch emphasized that “[c]onsenting to give a third party access to private papers that remain my property is not the same thing as consenting to a search of those papers by the government.”²⁹⁴ Instead of relying on the third-party doctrine and fraught notions of privacy, Justice Gorsuch proposes to re-hitch Fourth Amendment doctrine to the private law.²⁹⁵

The Fourth Amendment “the right of the people to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures.” According to Justice Gorsuch, the “original understanding, the traditional approach asked if a house, paper or effect was *yours* under law. No more was needed to trigger the Fourth Amendment.”²⁹⁶ In this formulation, the common law determinations of ownership would determine whether the Fourth Amendment applied to a particular search. This formulation would all but eliminate the third-party doctrine. Gorsuch offers a series of colorful examples:

Ever hand a private document to a friend to be returned? Toss your keys to a valet at a restaurant? Ask your neighbor to look after your dog while you travel? You would not expect the friend to share the document with others; the valet to lend your car to his buddy; or the neighbor to put Fido up for adoption.²⁹⁷

To be sure, these examples all cover tangible goods that have long been the subject of the doctrine of bailment. But Justice Gorsuch does not intent to cabin these doctrines to their historical uses or to cases in which the target of the search owns property in fee simple. He explained that “[t]hese ancient principles may help us address modern data cases too. Just because you entrust your data—in some cases, your modern-day papers and effects—to a third party may not mean you lose any Fourth Amendment interest in its contents” rather the Fourth Amendment protects both the “specific rights known at the founding” and “their modern analogs too.”²⁹⁸

Under Justice Gorsuch’s argument, the applicability of Fourth Amendment protections to cloud storage should depend, at least in part, on whether cloud storage is a bailment or at least the modern analog of a bailment.²⁹⁹ This Article has demonstrated that bailment is the best way to understand cloud storage, even if cloud storage providers resist conceiving of themselves as bailees.

²⁹⁴ *Id.*

²⁹⁵ *Id.* at 2264.

²⁹⁶ *Id.* at 2268 (emphasis in original).

²⁹⁷ *Id.* at 2269.

²⁹⁸ *Id.*

²⁹⁹ See Johnson, *supra* note 272 (exploring how the Fourth Amendment doctrine maps onto cloud storage); see also Michael J. O’Connor, *Digital Bailments*, 22 U. PA. J. CONST. L. 1271, 1306–9 (2019–2020) (observing that bailment doctrine might be important to Fourth Amendment doctrine, but not explaining how bailment would apply to cloud storage).

C. *The Future of Ownership*

Recognizing digital files as something that can be the subject of bailment may radically transform consumers' relationship with digital media. Today, firms structure the contracts around downloaded books, music, movies and other media so that consumers have a license in the media, but not title.³⁰⁰ Consumers may believe that they own these digital files, but they do not.³⁰¹ Although there are many critics of this license regime,³⁰² eliminating it may not lead to greater consumer ownership of digital media. Recall that one of Holt's third category of bailment is hired goods.³⁰³ This relationship, which covers equipment rental among other things, gives consumers use and enjoyment of the goods "without the burdens of becoming and remaining the owner" while the lessor receives rent.³⁰⁴ In a world in which digital files can be bailed, digital media distributors could restructure their contracts to make consumers bailees of the media they download. Like someone renting a U-Haul truck, the consumer could keep the files as long as they paid for it. In this framework, there would be nothing suspicious about the media distributor taking its property, the files, back at the termination of the bailment. Although rooted squarely in property doctrine, a bailments approach to digital media downloads be subject to the same criticisms as the present licensing regime. Namely, it might contradict consumer expectations and deny consumers autonomy over their possessions.

CONCLUSION

Bailment is a relationship between two parties. While it can seem complex with its many categories and periodic procedural nonsense, the core is quite simple: bailment is the law of entrusting our things to other people. As a private law doctrine, it gives the force of law to the trust on which subsequent transactions rely. This much has been true for at least a millennium. In that time, the doctrine has weathered countless changes in society, forms of property ownership, and technology. As a concept, bailment is as flexible as it is essential.

Having robust default rules regarding who can trust whom for what is efficient. These rules should capture what the parties would negotiate for if they could negotiate efficiently and without grossly unequal bargaining power. That is, these rules reflect the expectations of reasonable individuals. Failure to extend these rules to the emerging digital economy risks further disconnecting the law from the expectations of society at large. This disconnect is not good for the legitimacy of the law.

³⁰⁰ See generally AARON PERZANOWSKI & JASON SCHULTZ, *THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY* (MIT Press 2016).

³⁰¹ Aaron Perzanowski & Chris Jay Hoofnagle, *What We Buy When We Buy Now*, 165 U. PA. L. REV. 315, 320–22 (2017).

³⁰² PERZANOWSKI & SCHULTZ, *supra* note 298, at 57–81, FAIRFIELD, *supra* note 148.

³⁰³ See *supra* Part I.C.

³⁰⁴ *Cintrone v. Hertz Truck Leasing & Rental Serv.*, 212 A.2d 769, 776 (N.J. 1965).

More broadly, the law of technology without background principles of private law is the law of suckers. The tech companies will insulate themselves from responsibility to their customers with contract. The effect of these contracts will be to bind the consumer alone. Firms will draft themselves unilateral modification and erect procedural barriers to enforcing any remaining rights. The gist will be that anyone who appears to trust technology with something they value is embarrassingly naïve. Sure, consumers thought they were paying a firm for secure storage, but they should have read the fine print that said the firm could delete their files at will—*everyone* knows to back up their backup. Adding salt to the wound, the user who fails to have a backup for their backup may even be in breach of contract if the contract contains precatory terms.³⁰⁵

Reputational concerns may police behavior at the margins but does little to align the promise of these products with the substance of their contracts. The companies purport to be storage companies, but then waive liability for loss of data. Even resources for lawyers helping their business clients enter into cloud storage contracts warn that there will be broad disclaimers of liability that may be difficult, if not impossible, to negotiate.³⁰⁶

Ceding the large swaths private law to contracts is a pointless abdication³⁰⁷—technology fits into the robust doctrinal framework of the private law. An earlier generation of common law judges might have recognized this fit over through the natural flow of cases. Those days have long since passed. But that does not mean that common law concepts should be abandoned. Instead, any statutory law of cloud storage should be built on the law of bailment, much in the same way that the statutory law of warehousing is.

³⁰⁵ Hoffman, *supra* note 260, at 1401–8 (explaining how firms can and do use terms of use to motivate user behavior).

³⁰⁶ See DAVID W. TOLLEN, *THE TECH CONTRACTS HANDBOOK: CLOUD COMPUTING AGREEMENTS, SOFTWARE LICENSES, AND OTHER IT CONTRACTS FOR LAWYERS AND BUSINESSPEOPLE* (American Bar Association 2d ed. ed. Jan. 2016); OVERLY & KALYVAS, *supra* note 12.

³⁰⁷ See Deborah A. DeMott, *Beyond Metaphor: An Analysis of Fiduciary Obligation*, 1988 DUKE L.J. 879, 893–97 (1988) (pushing back on the idea that contract can explain and therefor govern fiduciary law).