SEEING THE INTANGIBLE: JULIET MORINGIELLO'S ENDURING LEGACY IN PROPERTY LAW

by

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Professor Juliet Moringiello was a pioneering voice in reimagining property law for the digital age. She championed a functional approach that looked past physical form long before such thinking became mainstream in legal scholarship. This essay describes how her scholarship planted the intellectual seeds for the 2022 Amendments to the Uniform Commercial Code that introduced the notion of control for electronic records as the functional equivalent of possession of goods. By presciently anticipating the challenges that would emerge with the advent of Bitcoin, NFTs, stablecoins, and other digital assets, she made a crucial contribution to the evolution of American commercial law.

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Introduction

It is with great sadness and deep gratitude that we join our colleagues in this special issue of the *American Bankruptcy Law Journal* to mark the passing of Professor Juliet M. Moringiello, a brilliant scholar whose contributions to commercial and property law have shaped how we understand the intersection of technology and commercial law. Juliet's influence on our work and our thinking was profound and varied. In years of collaboration, mentorship, and scholarly conversation, she taught us not only about the complexities of commercial law, but also about the importance of principled flexibility in legal analysis. Her forward-looking yet historically grounded approach to complex problems, rigorous but never at the expense of practicality, is an example of scholarship that we continue to emulate. Commercial law, after all, must serve the needs of the real world while making conceptual sense, and Juliet devoted her career to making sense of commercial law for the real world.

We worked alongside her in law reform initiatives and academia, learned from her research, and were privileged to benefit from her intellectual generosity. Thus, we lose not only a colleague, but a guiding light in our field.

In reflecting on Juliet's scholarly legacy, we note how often she saw things coming when others did not. She could identify problems and propose solutions years before they reached mainstream attention. While her contemporaries focused their attention elsewhere, Juliet perceived technological currents that would fundamentally reshape property and commercial law. Her 2007 article, *False Categories in Commercial Law: The (Ir)relevance of (In)tangibility*, stands as perhaps the most powerful exemplar of this prescience and the one that we will focus on in this essay.[1]

When she wrote *False Categories* for the *Florida State University Law Review*, there were no NFTs or digital assets, much less the legal discussions they dominate. Bitcoin would not appear for another two years, but the market for digital assets would eventually balloon to a valuation of almost $4 trillion.[2] Though most legal scholars could not even imagine these changes in 2007, Juliet saw the fundamental challenge they posed to commercial law. She did not know exactly how digital assets would be used, but she knew that the legal system's reflexive dependence on tangibility, its elemental instinct to categorize

[1] Juliet M. Moringiello, *False Categories in Commercial Law: The (Ir)relevance of (In)tangibility*, 35 FLA. ST. U. L. REV. 119 (2007).

[2] *See* Andrea Tosato & Christopher K. Odinet, *Digital Assets and the Property Question*, 78 FLA. L. REV. (forthcoming 2026), https://ssrn.com/abstract=5151907.

and define rights by reference to physical form, would prove inadequate as the basis for regulating the emerging digital economy.

The problems Juliet identified in *False Categories* were not front-page at the time. Domain names had been around for over a decade, but most commercial law scholars treated them as curiosities rather than harbingers of deeper structural challenges. Electronic commerce was expanding rapidly, but few questioned whether the existing framework of the Uniform Commercial Code could accommodate digital assets.[3] The conventional wisdom suggested that they could be slotted into existing categories.[4] Courts would adapt. Common law flexibility would suffice.

Juliet disagreed. With characteristic clarity and rigor, she demonstrated that commercial law's "adherence . . . to the notion of tangibility" created "false categories unrelated to significant legal distinctions" that would "hinder the ability of commercial law to expand to adequately accommodate electronic assets."[5] She showed how UCC Article 9's remedies provisions (which, she argued, were designed with manual possession in mind) left creditors with security interests in general intangibles without clear enforcement mechanisms.[6] She revealed how courts, when confronted with novel electronic assets, became "confound[ed]" by intangibility and made decisions that threatened to fragment commercial law across state boundaries.[7] She in

[3] At that time, scholarly, judicial, and legislative attention concentrated overwhelmingly on electronic contracting, including shrinkwrap and clickwrap agreements, the failed UCITA project, and the enactment of the Uniform Electronic Transactions Act and E-SIGN. *See, e.g.*, ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996) (enforcing a shrinkwrap license); Hill v. Gateway 2000, Inc., 105 F.3d 1147 (7th Cir. 1997) (enforcing terms shipped with the product under an accept-or-return arrangement); Amelia H. Boss, *Taking UCITA on the Road: What Lessons Have We Learned?*, 7 ROGER WMS. U. L. REV. 167 (2001) (drawing lessons from the UCITA project); Maureen A. O'Rourke, *An Essay on the Challenges of Drafting a Uniform Law of Software Contracting*, 10 LEWIS & CLARK L. REV. 925 (2006) (surveying the obstacles to a uniform law of software contracting). No comparable theoretical or statutory framework addressed the treatment of digital assets in property and commercial law. *See* Moringiello, *supra* note 1, at 121 (drawing this contrast).

[4] The "general intangibles" sub-category, added to Article 9 during its 1957 revision as a residual class for personal property not fitting the statute's enumerated collateral types, had long served as the absorptive mechanism for novel intangible assets. *See* Homer Kripke, *Suggestions for Clarifying Article 9: Intangibles, Proceeds, and Priorities*, 41 N.Y.U. L. REV. 687, 691 (1966) (describing the genesis of the category); *see also* GRANT GILMORE, SECURITY INTERESTS IN PERSONAL PROPERTY 292 (1965) (describing the original 1952 classification, which lacked a general intangibles category, as "simple-minded").

[5] Moringiello, *supra* note 1, at 120.

[6] *Id.* at 125–32.

[7] *Id.* at 137–41.

particular exposed the flawed and superficial analogy between intangible assets and intellectual property, which was a mere reflexive categorization that rested on little more than the shared absence of physical form.[8]

But perhaps most importantly, Juliet offered a path forward. Drawing on centuries of property law jurisprudence, she demonstrated that courts had always adapted concepts of possession and control when physical dominion proved impossible or impractical.[9] The challenge, she argued, was not the intangibility of electronic assets per se, but the legal system's failure to recognize that "tangibility as tangibility has no relevance to property law."[10] What mattered was not whether an asset could be physically grasped but whether dominion, excludability, and transferability could be established and maintained.

Nearly two decades after *False Categories* first appeared, Juliet's analysis has proven remarkably prescient. The 2022 Amendments to the Uniform Commercial Code (UCC), which established *controllable electronic records* as a new category of personal property, vindicate her core insight: commercial law must focus on functional attributes rather than physical form.[11] As vice chair of the drafting committee that produced these amendments and commissioner from the State of Pennsylvania, Juliet played a crucial role in translating theoretical insights into practical legal reform.[12] Her later scholarship, particularly *The Property Law of Tokens*, reflects a sophisticated engagement with how commercial law can best accommodate digital assets and related technology—an engagement informed by, yet also evolving from, her earlier work.[13]

We should recognize what has been lost since Juliet's passing. She was a scholar at the forefront of one of the central legal challenges of our

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[8] *Id.* at 149.

[9] *Id.* at 156–64.

[10] *Id.* at 164.

[11] *See* Tosato & Odinet, *supra* note 2, at 43–46 (analyzing this dimension of the 2022 UCC Amendments).

[12] U.C.C. Amendments prefatory note at vii–viii (2022). Edwin E. Smith chaired the drafting committee. Steven L. Harris served as reporter from 2019 until his passing in 2021; Charles W. Mooney Jr., his co-author and friend of many years, carried the project to completion as reporter, with Stephen L. Sepinuck as associate reporter.

[13] *See* Juliet M. Moringiello & Christopher K. Odinet, *The Property Law of Tokens*, 74 FLA. L. REV. 607 (2022) [hereinafter Moringiello & Odinet, *Token Law*]; Juliet M. Moringiello & Christopher K. Odinet, *Blockchain Real Estate and NFTs*, 64 WM. & MARY L. REV. 1131 (2023); Juliet M. Moringiello & Christopher K. Odinet, *NFTs, Property Rights, And Realty*, in THE CAMBRIDGE RESEARCH HANDBOOK ON LAW AND POLICY OF NFTS (Nizan Geslevich Packin ed., 2024).

increasingly networked commercial environment: the treatment of digital assets, sometimes referred to as "intangible property" or "intangible assets." Part I describes *False Categories* and assesses its more durable contributions. Part II examines where our views differed from Juliet's initial approach to solving problems presented by intangible assets and discusses how disagreement gave way to cooperation and development. It also looks at how Juliet understood challenges to commercial law presented by digital assets as her scholarship evolved. We conclude with some final thoughts about Juliet's lasting legacy.

Writing this essay was difficult. Each citation of her work and each description of her scholarship reminded us of conversations we will never again have, ideas we will never again explore, projects we will never bring to completion together. However, the best tribute we can pay to Juliet's memory is one that gives due weight to her ideas and shows how they have been incorporated into legal scholarship and practice.

I. The Issue with Possession of Intangibles

Juliet's *False Categories* appeared in 2007 at a moment when commercial law perhaps seemed settled in its treatment of intangible assets. Its point of departure was Article 9 of the UCC, which had been revised a few years earlier to address the growing use of technology in business. Juliet argued that, despite these updates, there were still deep problems with the way in which new types of property were categorized, and that these flaws would only become more urgent as e-commerce (and digital assets more generally) continued to proliferate.

Juliet's article made three overarching arguments. First, she maintained that the notion of possession (what it actually means to "possess" something) is more flexible than many scholars appreciate. Second, she contended that courts are ill-equipped to deal with novel intangibles. Finally, she called for a framework for thinking about intangibles that emphasizes their functional (rather than physical) characteristics. Together, these three arguments provided a lens through which to analyze the problems with Article 9. Moreover, Juliet's article paved the way for the 2022 UCC Amendments, as well as an entire body of scholarship on digital assets, technology, and property law.

A. Overview of *False Categories*

Juliet organized *False Categories* around the central claim that the legal system's fixation on whether assets are tangible or intangible creates artificial

distinctions that mask what actually matters and what does not in commercial law. She built this argument, as she did in so much of her work, by moving systematically from diagnosis to historical analysis to normative solution.

The article opens with a hypothetical that would become familiar to anyone who studied her work and knew of her love for snow skiing (including as an instructor). eSnowshoes, Inc., a small online retailer, borrows $100,000 from Commercial Bank and grants the bank a security interest in its inventory, accounts receivable, and general intangibles, including its domain name and virtual assets in Second Life, an online virtual world in which users create, buy, and sell digital goods.[14] In turn, Commercial Bank perfects its interest by filing a financing statement. When eSnowshoes defaults, the bank knows exactly how to enforce its interest in the inventory (repossession) and the accounts receivable (collection from account debtors). But she then raises the question: what about the domain name and the Second Life assets? Article 9, she argues, provides no clear answer.[15]

This gap in the law, Juliet explained, stems from Article 9's dichotomous treatment of tangible and intangible rights. The statute contemplates repossession for goods and collection remedies for payment rights, but it leaves creditors with security interests in what she called "true" general intangibles (assets that are neither goods nor payment obligations) without adequate enforcement mechanisms.[16] Since garnishment laws differ so greatly from state to state (some allow the seizing of assets held by third parties, while others limit such a right to only certain types of assets), she noted that courts would be of limited assistance.[17]

Juliet then turned to case law to show how courts have struggled when intangible assets appear before them. She analyzed *Network Solutions, Inc. v. Umbro International, Inc.* and *Dorer v. Arel*, two Virginia cases involving attempts to garnish domain names.[18] In both cases, courts concluded that domain names were merely "'the product of a contract for services'" rather than property that could be seized to satisfy debts.[19] The reasoning troubled Juliet. Courts seemed to think that because domain names are intangible and require the ongoing services of a registrar, they could not be property. She thought that this logic was flawed. Deposit accounts, for example, are intangible and require

[14] Moringiello, *supra* note 1, at 119.
[15] *Id.* at 119–20.
[16] *Id.* at 128.
[17] *Id.* at 128–30.
[18] *Id.* at 138–41 (discussing Network Solutions, Inc. v. Umbro Int'l, Inc., 529 S.E.2d 80 (Va. 2000) and Dorer v. Arel, 60 F. Supp. 2d 558 (E.D. Va. 1999)).
[19] *Id.* at 139 (quoting *Network Solutions*, 529 S.E.2d at 86).

the ongoing assistance of banks, yet no one doubts they are personal property.[20] Indeed, Article 9 identifies them as a specific class of collateral.[21]

The problem, however, extended beyond domain names. Juliet examined *Kremen v. Cohen*, where the Ninth Circuit grappled with whether converting a domain name could support a tort claim.[22] The court wanted to recognize domain names as property but felt constrained by the traditional merger doctrine, which allows conversion claims only for intangible rights "merged" in tangible documents.[23] Rather than abandon this anachronistic requirement, the court performed intellectual gymnastics, declaring that domain names are "merged" in the domain name system itself in the form of an intangible, distributed database.[24] Juliet found this reasoning deeply unsatisfying.[25] The merger requirement made sense when intangible rights were actually reified in paper certificates that changed hands, such as negotiable instruments.[26] But stretching it to cover purely electronic systems was entirely unconvincing.[27]

Courts also reflexively categorized novel intangibles as intellectual property (IP), Juliet observed, even when those assets lacked the characteristics that define IP rights. Domain names are rivalrous in that only one person can use a given name at a time.[28] Intellectual property rights, by contrast, are non-rivalrous. Many people can use a copyrighted work or patented invention simultaneously, which is why IP law grants exclusive rights to incentivize creation.[29] Dealing with domain names as IP, in Juliet's view, led courts astray and obscured the real question: how should commercial law handle intangible assets that can be exclusively controlled?[30]

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[20] *Id.* at 140.

[21] U.C.C. §§ 9-102(a)(29) (defining "deposit account"), 9-203(b)(3)(D) (referencing deposit accounts in attachment rule).

[22] Moringiello, *supra* note 1, at 151–54 (discussing Kremen v. Cohen, 337 F.3d 1024 (9th Cir. 2003)).

[23] *Id.* at 152; *see also* Grant Gilmore, *Formalism and the Law of Negotiable Instruments*, 13 CREIGHTON L. REV. 441, 446–47 (1979) (tracing the development of the merger doctrine and the reification of intangible rights in paper).

[24] Moringiello, *supra* note 1, at 152–53.

[25] *Id.* at 153–54.

[26] *Id.* at 153.

[27] *Id.* at 153–54.

[28] *Id.* at 154; *see also* David Nelmark, *Virtual Property: The Challenges of Regulating Intangible, Exclusionary Property Interests Such as Domain Names*, 3 NW. J. TECH. & INTELL. PROP. 1 (2004) (discussing the property attributes of domain names); Joshua A.T. Fairfield*, Virtual Property,* 85 B.U. L. REV. 1047, 1049, 1053–54 (2005) (same).

[29] Moringiello, *supra* note 1, at 147–48.

[30] *Id.* at 148–50.

Having diagnosed the problem, Juliet turned to history. Part IV of the article is a tour de force demonstration that courts have been adapting private law's possession concepts for centuries in cases where manual possession proved impractical. She started with *Pierson v. Post*, the iconic case about capturing wild foxes.[31] The New York court held that mortally wounding an animal combined with continued pursuit constitutes possession sufficient to establish property rights, even though the hunter never physically grasped the fox (a case familiar to every first-year property student).[32] The decision recognized that treating manual possession as an absolute prerequisite, whatever the circumstances, would be overly rigid and could produce absurd results.[33] What mattered was depriving the animal of its natural liberty coupled with evidence of an intention to appropriate it.[34]

Ghen v. Rich pushed the analysis further.[35] There, the custom in the whaling industry at Provincetown held that whoever killed a whale owned it, even though killed whales sink to the ocean floor and resurface days later, often miles away from where they were harpooned.[36] The court upheld this custom, reasoning that it represented "'the only act of appropriation that [was] possible in the nature of the case.'"[37] Juliet drew a crucial lesson: when manual possession is impossible, courts look to industry practices and functional control to determine ownership.[38]

She found the same pattern regarding delivery in gift law. Branding cattle, for example, constituted sufficient delivery for a donation even though the animals roamed on an open range beyond anyone's grasp.[39] Where the donor could not physically hand the item to the donee, courts began to recognize symbolic delivery and delivery through agents or other intermediaries.[40] The focus was on the donor's control over the item and ability to transfer it rather than on actual physical delivery.[41]

Juliet connected these historical examples to modern commercial law.[42] Tangibility, she observed, was already playing "a declining role" across the

[31] *Id.* at 157–59 (discussing Pierson v. Post, 3 Cai. 175 (N.Y. Sup. Ct. 1805)).
[32] *Id.* at 159.
[33] *Id.*
[34] *Id.*
[35] *Id.* at 159–60 (discussing Ghen v. Rich, 8 F. 159 (D. Mass. 1881)).
[36] *Id.* at 160.
[37] *Id.* (quoting *Ghen*, 8 F. at 162).
[38] *Id.*
[39] *Id.* at 162 (discussing Coke & Reardon v. Ikard, 87 S.W. 869 (Tex. Civ. App. 1905)).
[40] *Id.* at 160–62.
[41] *Id.* at 162.
[42] *Id.* at 155–56.

Code: the 2001 revision of Article 1 accommodated electronic contracting generally; the 2003 revision of Article 7 recognized that rights in goods in storage or transit could pass through control of an electronic document of title; and Article 9 admitted electronic chattel paper, though through transfer rules that she thought remained tied to negotiability concepts rendered irrelevant when the rights are electronic.[43]

Article 8, governing investment securities, had gone furthest, moving away from physical possession as the touchstone of property rights.[44] When securities trading became too voluminous for manual transfer of stock certificates, Article 8 was revised to introduce "control" as what Juliet called "an umbrella term," a non-unitary concept replacing but encompassing possession.[45] For certificated securities, it remains grounded in delivery and thus in possession; for uncertificated securities and security entitlements, it is achieved through agreement rather than any state of fact.[46] Yet in both cases the concept is flexible and technology-neutral, focusing on whether a person can enjoy the benefits of an asset and transfer them to others.[47]

This brought Juliet to her central prescription. Commercial law, she argued, should "discard distinctions based on the physical manifestation of assets and focus instead on the legal qualities of those assets."[48] The relevant questions are not "can I touch it?" but rather "can it be controlled?,"[49] and "can it be transferred?," and "can others be excluded from it?"[50] These functional attributes, she argued, should determine how commercial law treats an asset.[51] Courts deciding cases about electronic assets should not ask whether they fit

[43] Moringiello, *supra* note 1, at 124–25.

[44] *Id.* at 124–25.

[45] *Id.* at 155.

[46] *See* U.C.C. § 8-106(a)–(b) (certificated securities; control through delivery); *id.* § 8-106(c)–(d) (uncertificated securities and security entitlements; control through agreement).

[47] Moringiello, *supra* note 1, at 155.

[48] *Id.* at 120.

[49] In this question, "control" bears its ordinary, factual meaning: the power to use an asset and to exclude others from it. That meaning must be held apart from the defined concepts to which the UCC attaches the same word, each crafted for a specific asset class: control of electronic documents of title (§ 7-106), of investment property (§§ 8-106, 9-106), of deposit accounts (§ 9-104), of electronic copies of records evidencing chattel paper (§ 9-105), of electronic money (§ 9-105A), of letter-of-credit rights (§ 9-107), and, since 2022, of controllable electronic records, controllable accounts, and controllable payment intangibles (§§ 12-105, 9-107A). Juliet wrote in both registers, and so, unavoidably, does this essay. We return to the distinction, and to the place of Article 12 control within this crowded field, in Part II.C.

[50] *Id.* at 141.

[51] *Id.* at 132–34.

into existing categories designed for tangible property.[52] Rather, they should ask whether the relationships among persons with respect to those assets can be defined, protected, and transferred, all of which are the core concerns of property law.[53]

To return to the hypothetical that opened the article: Commercial Bank's inability to enforce its security interest in eSnowshoes' domain name and virtual assets is not, on Juliet's analysis, a failure of existing law to contemplate the specific technology.[54] Instead, it is a failure to apply general principles that have governed property for centuries.[55] The bank should be able to enforce its interest by gaining control of whatever mechanism allows the debtor to enjoy and transfer the asset (which, in this case, would be registration with the domain name registrar and providing the account credentials for Second Life). The form of the asset is irrelevant. What matters is the attributes and their function.[56]

B. Two Key Takeaways That Shaped Our Thinking

Among the contributions that *False Categories* made to commercial and property law scholarship, two stand out as particularly enduring. First, Juliet highlighted the systematic missteps that courts have consistently taken in resolving conflicts involving novel intangibles and pointed to the cognitive biases that still plague judges in this context today.[57] Second, she argued that commercial law must shift its focus to the functional properties of assets, as opposed to the form that they take. Her insights have informed our own work in this area, which we discuss below.

1. How Courts Mishandle Novel Intangibles

Juliet's first major contribution was exposing systematic patterns in judicial reasoning that lead courts astray when they encounter unfamiliar intangible assets. She identified three recurring mistakes: conflating intangibility with non-property status, reflexively categorizing intangibles as intellectual property, and attempting to force intangibles into tangible-property frameworks through tortured analogies.

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[52] *Id.* at 131–32.
[53] *Id.* at 162–64.
[54] *Id.* at 164–65; *see supra* notes 14–15 and accompanying text.
[55] *Id.* at 165.
[56] *Id.* at 162–64.
[57] *See infra* Part I.B.1.

The Virginia domain name cases above[58] provide examples of the first mistake, and they signify more than just a classification error. In those cases, courts failed to recognize domain names as property by mistakenly reasoning that intangibility meant non-property status.[59] Property, Juliet submitted, is not a thing, but is defined by the relationships among individuals with respect to a thing or other resource.[60] A domain name is an intangible resource, but the rights to enjoy it exclusively, to prevent others from using it, and to transfer it are property rights. Courts were mesmerized by intangibility and missed the point entirely.[61]

The second mistake (treating novel intangibles as intellectual property by default) also pervaded judicial reasoning. When courts assumed that intangibles that have value must be some form of IP, they collapsed the distinction between rivalrous and non-rivalrous assets. This distinction is fundamental to understanding why and how IP law works.[62] By classifying domain names as such, they borrowed inapplicable doctrines from IP law and failed to apply the appropriate principles. Instead of grappling with the proper issue (who has control over a valuable, unique, rivalrous resource?), they worried about how to balance the interests of the domain name holder with those of the public.[63] Finding guidance from trademark law was another misstep, as the purpose of trademark law is to protect source-identifying marks in order to avoid consumer confusion.[64] Generic domain names (e.g., shoes.com) have no trademark significance, but can be valuable and controlled exclusively. Referring to them as IP confused, rather than clarified, their nature.[65]

The third mistake was attempting to preserve tangible-property frameworks by forcing intangibles to "look tangible" through analogy. In *Kremen v. Cohen*, discussed above,[66] the Ninth Circuit tried to shoehorn the law

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[58] *See supra* notes 18–21 and accompanying text (discussing Network Solutions, Inc. v. Umbro Int'l, Inc., 529 S.E.2d 80 (Va. 2000) and Dorer v. Arel, 60 F. Supp. 2d 558 (E.D. Va. 1999)).

[59] Moringiello, *supra* note 1, at 139–41.

[60] *Id.* at 134 (citing JOSEPH WILLIAM SINGER, INTRODUCTION TO PROPERTY (2d ed. 2005)); *cf.* Henry E. Smith, *Property as the Law of Things*, 125 HARV. L. REV. 1691 (2012) (arguing that property is organized around things, not merely interpersonal relations).

[61] Moringiello, *supra* note 1, at 147.

[62] *See supra* notes 28–30 and accompanying text (discussing the rivalrous nature of domain names and the non-rivalrous nature of intellectual creations).

[63] Moringiello, *supra* note 1, at 148–49.

[64] *Id.* at 149.

[65] *Id.* at 149–50.

[66] *See supra* notes 22–27 and accompanying text (discussing Kremen v. Cohen, 337 F.3d

of conversion into the realm of intangibles by explaining that domain names were "merged" in the domain name system itself. Juliet disagreed.[67] Under the merger doctrine, conversion reaches an intangible right only if that right is embodied in a physical document the transfer of which carries it. The domain name system does not serve this function. The Ninth Circuit's attempt to force a connection between conversion and domain names was misguided at best and did not offer guidance for future cases involving intangibles.[68]

Juliet explained that what united these three mistakes was a failure to move beyond surface categories and investigate what rights and relationships of control, transferability, and excludability attach to domain names, and how commercial law should accommodate them. Instead, courts stubbornly clung to the idea that because a domain name was intangible it could not be likened to "normal" property. Or that because it might be valuable it had to be intellectual property. Or that existing rules made sense when applied to tangible property, and so ought to be applied in the same way to intangibles as well.[69]

2. Functional Attributes Over Physical Form

Juliet's second major insight was that the law should focus on the function of assets, not their physical form.[70] This conclusion arose from her historical analysis and criticism of judicial decision-making, but it also hints at solutions that courts and legislatures might consider when faced with technological innovation, both in the past and today.[71]

Juliet argued that tangibility as such has no relevance to property law,[72] stating explicitly: "[T]he idea of tangibility as tangibility has no relevance to property law."[73] What matters, she argued, is not whether an asset can be physically grasped, but whether it possesses the features that make property rights meaningful and legally enforceable:[74] whether it can be described with sufficient certainty that parties are clear as to the rights they claim;[75] whether it can be controlled so that the owner can enjoy its benefits (what we will call the

1024 (9th Cir. 2003) and the merger doctrine).

[67] Moringiello, *supra* note 1, at 152–53.

[68] *Id.* at 153–54.

[69] *Id.* at 154–55.

[70] *Id.* at 140.

[71] *See infra* Part II.

[72] Moringiello, *supra* note 1, at 120, 164.

[73] *Id.* at 164.

[74] *Id.* at 140.

[75] *Id.* at 134.

positive element of a possessory relationship) and prevent outsiders from doing so (the negative element);[76] and whether interests in it can be assigned from one owner to another.[77] According to Juliet, the same issues apply to tangible goods, intangible payment obligations, and purely electronic interests.[78] Juliet made her case by pointing to Article 8 of the UCC, which has already taken a functional approach: by focusing on the flexible, technology-neutral concept of "control," Article 8 applies equally to certificated and uncertificated securities.[79]

Juliet asserted that commercial law should not ask what an asset is made of[80] but rather what a person can do with it.[81] Specifically, with respect to secured transactions, she argued that the key question is whether the secured party can acquire sufficient control of an asset to convey economic benefits to a third party.[82] If that is possible, then the law should support ways for them to do so.[83] If not, perhaps the asset in question should be disallowed as collateral.[84] But she cautioned that commercial law should neither refuse an asset as collateral simply because it is intangible nor admit one merely because it is tangible.[85]

Juliet also objected to the creation of new legal regimes just for specific technologies;[86] she used Judge Easterbrook's famous critique of "The Law of the Horse" (arguing that creating specialized laws for every technological advancement would result in shallow, ungeneralizable rules that miss unifying principles).[87] Domain names, virtual-world assets, and electronic assets not yet invented should not each receive a law of their own.[88] Instead, they should be

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[76] *Id.* at 141 ("whether the owner of the asset can exclude others from it"), 149 ("the domain name registrant has exclusive control over the use of its domain name"), 158 ("[f]or the purpose of Article 9 remedies, possession serves a control function").

[77] *Id.* at 153.

[78] *Id.* at 162–64.

[79] *See supra* notes 42–47 and accompanying text (discussing Article 8's introduction of "control" as an umbrella concept replacing but encompassing possession, and the distinction between certificated securities, where control remains grounded in delivery, and uncertificated securities, where control is achieved through agreement).

[80] Moringiello, *supra* note 1, at 120.

[81] *Id.* at 141.

[82] *Id.* at 157–58.

[83] *Id.* at 158.

[84] *Id.* at 164.

[85] *Id.* at 164.

[86] *See infra* Part II.

[87] Moringiello, *supra* note 1, at 141.

[88] *Id.* at 141–43.

governed by general commercial and property law principles, applied functionally.[89]

She was strongly of the opinion that categorization based on physical forms would have extremely negative implications for commercial law.[90] Classifications keyed to physical form would proliferate at an ever-increasing rate, and commercial law would find it difficult to adapt, creating confusion and uncertainty.[91] As the courts struggled with classifying new and hybrid assets, litigation would increase.[92] And commercial law would always be a step behind technological innovation, requiring legislative reform each time a new asset emerged.[93]

As we see it, Juliet was prescribing a moderate reform, but one that would have required a significant change in mindset.

On the one hand, what she was calling for was modest: no wholesale overhaul of commercial law, just a change in how the judiciary and the legislature approached questions of classification. On the other hand, it was ambitious: retraining lawyers and judges who had thought for years in terms of tangible versus intangible and goods versus intangibles to think in terms of characteristics such as control, transferability, and excludability; encouraging legislators to resist the temptation to legislate for each new technology as it arrived, instead crafting legislation based on functional attributes that cut across specific technologies.[94]

The call for a "functional approach" was prescient. As we discuss in Part II, the 2022 Amendments to the UCC adopted this approach in dealing with controllable electronic records (CERs).[95] CERs are defined by what they can do (i.e., whether they can be "controlled," as functionally defined), not by what they are made of.[96] And Juliet's 2007 article was one of the first to lay out the intellectual underpinnings for what has now become law,[97] showing how existing commercial law doctrines can be applied to electronic assets, if only we would use them.

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[89] *Id.* at 156–64.
[90] *Id.* at 141, 147, 150, 156.
[91] *Id.* at 120.
[92] *Id.* at 165.
[93] *Id.* at 120–21.
[94] *Id.* at 164.
[95] *See infra* Part II.
[96] *See infra* Part II (discussing the 2022 UCC Amendments and Juliet's later work).
[97] *See infra* Part II.

II. Points of Departure and Enduring Influence

It is important to note that Juliet's *False Categories* article both diagnosed the problems and proposed solutions. Her analysis of how courts had adapted the concept of possession (and its many parts) throughout the course of history led her to argue that commercial law should simply expand the concept of possession to accommodate electronic things.[98] In the past, possession had adapted to deal with wild animals, free-roaming livestock, and intangible rights merged into pieces of paper, so it seemed logical that possession should also be flexible enough to accommodate domain names and digital tokens.

As for us, we agreed with much of Juliet's analysis but departed from her proposed solution in one significant respect. While we shared her conviction that a possession-like framework could work for electronic assets, we believed commercial law needed a new category rather than an expansion of an old one. In our minds, this category (which came to be called "control")[99] should draw on possession's core structure (attributes-based, as Juliet advocated), but also incorporate dimensions that possession did not accommodate fully, such as shared control among multiple parties. Such a concept required its own conceptual space within the UCC.

What followed in the work of the Uniform Law Commission and the American Law Institute was something Juliet excelled at: collaborative refinement of ideas through sustained engagement. As vice chair of the drafting committee that produced the 2022 UCC Amendments, she participated in discussions about how best to accommodate CERs. The framework that emerged vindicated aspects of both her original position and the alternatives proposed by others.

A. Her Position: Expanding Possession to Accommodate Intangibles

Having demonstrated in *False Categories* that possession has always been a flexible concept (adapted by courts across centuries to accommodate assets that cannot be manually grasped), Juliet drew what seemed to her the logical conclusion: commercial law should expand possession to cover electronic assets as well.[100] This was indeed an informed choice. She had

[98] Moringiello, *supra* note 1, at 165.

[99] On the several defined concepts that share the name "control" in the UCC, see *supra* note 49. On the relationship between Article 12 control and its statutory namesakes, see *infra* notes 147 and 162.

[100] *Id.* at 164–65.

praised the purpose-built concept of control that Article 8 crafted for investment securities, describing it, as we noted above, as an umbrella term.[101] But a solution of that kind requires a statute, and she thought it senseless to demand fresh legislation for every new generation of assets.[102] To her mind, there was no need for new categories or novel frameworks: the existing concept of possession, properly understood, could do the required work.[103]

To be sure, her reasoning was easily understood. As the historical cases she surveyed demonstrated, courts had repeatedly adapted possession to instances in which manual apprehension of the asset was practically impossible.[104] If possession could adapt to these varied circumstances, each presenting the same practical impossibility, then it could adapt to domain names, electronic accounts, and other digital assets.[105] Indeed, the adjustments required were no more dramatic than those courts had already made.[106] They simply needed to continue what was essentially a centuries-old pattern.[107]

To that end, Juliet identified what she saw as the crucial functional requirements. For possession to work with electronic assets, the law needed to focus on two elements that had always mattered more than physical grasping: the ability to *enjoy* the benefits of an asset and the ability to *exclude others* from those benefits, the positive and negative elements introduced above.[108] The first of these was what she called possession's "control function": from *Pierson v. Post*, "we learn that mortal wounding combined with continued pursuit constitutes control."[109] A person possesses a whale when they have killed it and can claim it upon its resurfacing, even though the whale spent days at the bottom of the ocean beyond anyone's physical reach.[110] A person possesses cattle when they have branded them and can identify them as their own, even

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[101] Moringiello, *supra* note 1, at 155; *supra* notes 44–50 and accompanying text.

[102] Moringiello, *supra* note 1, at 165 ("[I]t would be senseless to revise the Uniform Commercial Code every time a novel form of asset is developed.").

[103] *Id.* at 165.

[104] *Id.* at 156–64 (discussing Juliet's analysis of wild animal, whaling, and livestock cases).

[105] Moringiello, *supra* note 1, at 164–65.

[106] *Id.* at 165.

[107] *Id.* at 164.

[108] *See supra* Part I.B.2; Moringiello, *supra* note 1, at 149 (referencing a registrant's "exclusive control over the use of its domain name"), 158 (noting possession "serves a control function").

[109] Moringiello, *supra* note 1, at 158–59. Her "control function" speaks in the factual register, not in any of the UCC's defined senses. *See supra* note 49.

[110] Moringiello, *supra* note 1, at 159–60 (discussing Ghen v. Rich, 8 F. 159 (D. Mass. 1881)).

though the cattle might be grazing miles away.[111] Why should a person not possess a domain name when they control the registration and can use, enjoy, and transfer it?[112]

She further argued that the Article 9 framework reinforced this view.[113] Possession already played a central role in secured transactions.[114] Taking possession of collateral could substitute for a written security agreement in creating an enforceable security interest[115] and served as an alternative to filing a financing statement for purposes of perfection.[116] For certain asset classes, moreover, possession conferred a non-temporal priority that defeated even prior perfected security interests.[117] This is a rule grounded in public notice: unlike a filing, which must be searched, possession is visible and gives notice to the world by its very nature.[118] Juliet saw no reason this framework could not extend to electronic assets.[119] If a secured party could obtain the registration of a debtor's domain name, and with it the ability to enjoy the asset and to exclude all others from it, they would hold the same powers afforded by possession over goods, including the ability to transfer the value of the collateral.[120]

She did acknowledge, however, that some adaptation would be required.[121] In her eyes, physical delivery, which works for tangible goods, could not work for electronic assets.[122] But courts had long recognized alternatives to physical delivery: symbolic delivery, constructive delivery, and delivery through agents all served the same function when manual transfer was impractical.[123] For electronic assets, "delivery" might mean transferring account credentials, reassigning registrations, or providing access codes.[124] The

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[111] *Id.* at 162 (discussing Coke & Reardon v. Ikard, 87 S.W. 869 (Tex. Civ. App. 1905)).

[112] *Id.* at 138–41.

[113] *Id.* at 125–32.

[114] *Id.* at 157.

[115] *See* U.C.C. § 9-203(b)(3)(B) (identifying possession as alternative to authenticated security agreement).

[116] *See* U.C.C. § 9-313; Moringiello, *supra* note 1, at 125–27.

[117] *See* U.C.C. § 9-330(a)–(b) (chattel paper); *id.* § 9-331 (negotiable instruments, negotiable documents). The general priority rule under Article 9 is temporal: the first to file or perfect prevails. U.C.C. § 9-322(a)(1).

[118] Moringiello, *supra* note 1, at 125–27; *see also id.* at 158 ("The purpose of perfection is to give notice to the whole world that someone other than the debtor may have a property interest in the collateral.").

[119] *Id.* at 164.

[120] *Id.* at 164.

[121] *Id.* at 161–63.

[122] *Id.* at 160–61.

[123] Moringiello, *supra* note 1, at 160–62.

[124] *Id.* at 149–50.

mechanism would differ, but the function would remain the same: vesting in another person the enjoyment of the asset and the power to exclude all others from it.[125]

Juliet was particularly insistent that commercial law should resist creating asset-specific rules,[126] invoking Judge Easterbrook's critique of "The Law of the Horse" as noted above.[127] She believed that possession is and has always been a functional concept, defined by capabilities rather than physical characteristics, and capable of governing any asset where those capabilities can be established.[128]

Karl Llewellyn, the chief reporter of the UCC, was an ardent supporter of flexibility and evolution in the common law.[129] He believed that courts should adapt the UCC to reflect changes in commercial practices rather than treating the Code as a static rulebook.[130] Article 9 of the UCC was partially drafted by Grant Gilmore, who argued that commercial law must change with technology and cautioned against attempts to lock legal concepts into place.[131] There is a long tradition in property law of using cases to adapt the law to new circumstances, and expanding the concept of possession to include electronic assets would be in keeping with this tradition.[132] It would also avoid the creation of new legal concepts, which would be more complex for courts to administer and more difficult to fit into the existing web of law. Possession is a familiar concept,[133] and extending its reach is simpler than fashioning novel categories with uncertain attributes.[134]

The assets before her in 2007 fit that pattern readily. A domain name is a unique, rivalrous asset whose use is commanded through a single registration record. Juliet could therefore close *False Categories* with the observation that

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[125] *Id.* at 164.

[126] *Id.* at 165.

[127] *Id.* at 141.

[128] *Id.* at 157–58, 164.

[129] Karl N. Llewellyn, *Why a Commercial Code?*, 22 TENN. L. REV. 779, 779 (1953); Karl N. Llewellyn, *Why We Need the Uniform Commercial Code*, 10 FLA. L. REV. 367, 378 (1957).

[130] Moringiello, *supra* note 1, at 131–32 (recounting the drafters' aim of a code "clear enough to facilitate known transactions and flexible enough to allow judicial decisions to fill the statutory gaps").

[131] *See id.* at 131; Grant Gilmore, *Article 9: What It Does Not Do For the Future*, 26 LA. L. REV. 300, 300 (1966).

[132] Moringiello, *supra* note 1, at 165.

[133] *See* Richard A. Epstein, *Possession as the Root of Title*, 13 GA. L. REV. 1221 (1979) (offering a qualified defense of the rule that possession is the root of title); Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73 (1985) (explaining possession as a communication of one's claim to the world).

[134] *See* Moringiello, *supra* note 1, at 164.

"it is a small conceptual jump from determining control over a wild fox to finding control over a domain name."[135] The registrant's relationship to the domain name is quite similar to that between a whaler and a whale: one identifiable person enjoys the asset and excludes everyone else, without ever grasping it. For assets of that architecture, possession refashioned around functional control was a complete answer.

Yet Juliet's proposal, elegant as we think it was, did raise questions that would become central to the debates surrounding the 2022 UCC Amendments. Could possession really stretch far enough to cover assets that exist only as data entries in distributed systems? Would calling something "possession" when it lacked any component of physical dominion create more confusion than clarity? Could the elaborate doctrinal apparatus of possession, developed over centuries for corporeal things, accommodate the forms of shared control that digital assets demand? Would exclusivity, long understood through the lens of material occupation, need to be reconceived fundamentally to accommodate cryptographic mechanisms? And was there value in signaling (through new terminology) that electronic assets present distinct challenges even if they can be governed by possession-like principles? These questions did not indicate flaws in Juliet's analysis; rather they reflected the genuine difficulty of accommodating novel things within inherited legal categories.

B. Our Position: Control as a Distinct Category

As we remarked in Part I of this essay, we found Juliet's analysis compelling in many respects. Her observation that possession has always been flexible convinced us that a functionally similar framework could govern electronic assets. If the relationship between a person and a digital asset can replicate the state of fact to which the rules of possession have always attached legal consequences (dominion, excludability, and transferability), then a framework derived from possession makes functional sense. On this foundational point, we agreed entirely.

But we departed from Juliet's proposed solution. Rather than expanding the concept of possession to cover electronic assets, during the time of the drafting of the 2022 UCC Amendments, we believed commercial law should create a new category. This was not a rejection of her core ideas. Rather, it reflected a different judgment about how best to translate those ideas into the architecture of the UCC.

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[135] *Id.* at 165.

Our reasoning started with a foundational observation about the concept of possession itself. Since Roman law, possession has been understood as requiring physical dominion over a corporeal thing.[136] In the common law tradition, from Blackstone to Pollock and Holmes, albeit with differences regarding the exact confines of possession or the nature of the requisite intent, there has been consistent agreement on the principle that possession is only possible for corporeal things.[137] The Restatement (Fourth) of Property continues this lineage into contemporary American law, defining possession as applying only when "a person has established effective control over a physical thing" and categorically stating that intangible property "is not subject to possession, except perhaps in a metaphorical sense."[138] Although the UCC does not define possession, the concept is throughout the Code and invoked only in relation to tangible, movable things.[139] Extending possession to electronic assets would therefore not represent a modest adaptation of a flexible concept. It would remove a foundational element of the doctrine as understood across legal traditions for over two millennia.

Extending the doctrine of possession to digital assets is problematic. Difficulties arise in determining the types of assets to which the doctrine applies, the means by which digital assets are possessed and transferred, and the duties and rights of possessing parties, especially when other parties claim

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[136] FRIEDRICH CARL VON SAVIGNY, TREATISE ON THE LAW OF POSSESSION; OR, THE JUS POSSESSIONIS OF THE CIVIL LAW 1–7 (Sir Erskine Perry trans., 6th ed. 1848); *see also* THE INSTITUTES OF JUSTINIAN 2.1.12 (J.B. Moyle trans., 5th ed. 1913).

[137] Blackstone drew the foundational distinction between property "in possession," where a person has the actual enjoyment of a thing, and property "in action," where a person holds a bare right without occupation or enjoyment; his examples of things capable of possession are exclusively corporeal. 2 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND 389 (1766). Pollock limited corporeal possession to things susceptible of "manual occupation." FREDERICK POLLOCK & ROBERT SAMUEL WRIGHT, AN ESSAY ON POSSESSION IN THE COMMON LAW 36 (1888). Holmes agreed that possession requires physical power over the object possessed, differing only on the nature of the requisite intent. Richard A. Posner, *Savigny, Holmes, and the Law and Economics of Possession*, 86 VA. L. REV. 535, 547 (2000) ("Holmes agrees with Savigny that possession requires physical power over the object possessed . . . conjoined with a certain intent. Only, for Holmes, the requisite intent is merely the intent to exclude others.").

[138] RESTATEMENT (FOURTH) OF PROPERTY § 1.2.1.1, cmt. i (A.L.I. 2025).

[139] *See* U.C.C. § 9-313 (permitting perfection by possession for goods, instruments, tangible chattel paper, tangible documents of title, certificated securities, and money); Douglas G. Baird & Thomas H. Jackson, *Possession and Ownership: An Examination of the Scope of Article 9*, 35 STAN. L. REV. 175 (1983); Robert A. Zadek, *The Uniform Commercial Code's Misplaced Emphasis on Possession*, 28 LOY. L.A. L. REV. 391 (1994).

ownership or have competing interests.[140] Existing rules on the nature and consequences of possession would reach digital assets only to the extent that courts could justify each extension by analogy. As a result, there would be one set of rules for the possession of physical things and another for digital assets, leading to legal confusion instead of doctrinal simplicity.

In agreement with Juliet, we believed that the new category should draw on possession's core structure. Like possession, it should be a state of fact: a determination of whether a person stands in a particular factual relationship to an asset, not a question of legal entitlement.[141] Moreover, it should incorporate the positive and negative elements that we distilled above from Juliet's account of possession, together with the capacity to transfer both.[142]

Yet the concept we envisioned for digital assets would need to depart from possession in significant respects. The first departure concerned exclusivity. For possession, exclusivity is achieved through physical dominion in that others would need to physically displace the possessor to gain access.[143] Regarding digital assets, exclusivity would need to operate through different mechanisms entirely, mediated by cryptographic keys, system protocols, or registration systems. The system in which an electronic record is recorded may be programmed to cause changes, including transfers or modifications of benefits, without any physical act. A new concept would need to accommodate these realities while preserving the core idea that one identifiable person holds the relevant powers.

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[140] *See* D.R. Harris, *The Concept of Possession in English Law*, in OXFORD ESSAYS IN JURISPRUDENCE: A COLLABORATIVE WORK 69 (A.G. Guest ed., 1961); Baird & Jackson, *supra* note 139.

[141] POLLOCK & WRIGHT, *supra* note 137, at 13–14 ("Occupation or control is a matter of fact, and cannot of itself be dependent on matter of law.").

[142] *See supra* Part I.B.2; Moringiello, *supra* note 1, at 143–46, 158. The two-element decomposition is our synthesis, but it distills a long tradition in the possession literature. *See* SAVIGNY, *supra* note 136, at 2 (possession is the condition in which "not only one's own dealing with the thing is physically possible, but every other person's dealing with it is capable of being excluded"); Pollock & Wright, *supra* note 137, at 13 (effective occupation is that which suffices "to exclude strangers from interfering with the occupier's use and enjoyment"; quoting with approval Terry's formula that "any power to use and exclude others, however small, will suffice," given the requisite intent); OLIVER WENDELL HOLMES, JR., THE COMMON LAW 220 (1881) (the power to use a thing "is a physical power which I have without the aid of the law"; what the law adds is "to prevent other men to a greater or less extent from interfering with my use or abuse"); JOHN W. SALMOND, JURISPRUDENCE 298 (7TH ED. 1924) ("The possession of a material object is the continuing exercise of a claim to the exclusive use of it.").

[143] RESTATEMENT (FOURTH) OF PROPERTY, *supra* note 138, § 1.2.1.1, cmt. i.

The second departure concerned shared control. The law recognizes common or joint possession, but the corporeal nature of possessed things has always limited its practical significance.[144] Digital assets allow several types of shared authority (multi-signature arrangements, escrows, governance mediated by smart contracts) that the law of joint possession was never designed to accommodate. Take, for example, a multi-signature wallet with three cryptographic keys that give access to a digital asset, any two of which are sufficient to transfer that asset or invoke any of its functions. In such a wallet, no single key holder can enjoy the asset alone or exclude the other two, and a key holder can prevent a disposition only together with another key holder. Joint possession was designed for situations in which several individuals hold a thing in common and another person can dispossess them by yanking it away in the physical sense. A new concept is needed to distinguish carefully between symmetric arrangements, where several individuals share authority on equal terms, and asymmetric arrangements, where one individual has the power to veto or override the others. Such distinctions are essential in the commercial circulation of digital assets but have no analogue in the law of joint possession.

Our solution was to preserve the basic insight of her foundational principle (that commercial law needs to be informed by a functional rather than a formal approach) while also making explicit that control can be cryptographic and shared. To make this functional approach technology-neutral, we suggested defining control without reference to physical properties. It would not matter, for example, whether control was achieved through private keys, account credentials, registry systems, or technologies not yet invented.

Juliet's second principle was that the law should not impose asset-specific rules,[145] and so we suggested that control should be defined in the same way for domain names as it is for cryptocurrency or NFTs. While the answers to whether someone can exercise control over an electronic asset and exclude others, or enjoy and transfer the benefits of that control, might differ according to the technology in question, the legal analysis would be the same in every case.

To be sure, our disagreement with Juliet was not foundational. Both our approaches aimed at the same goals: ensuring that commercial law could accommodate electronic assets through functional analysis, rejecting the idea that tangibility matters as such, and focusing on dominion, excludability, and

[144] *See* POLLOCK & WRIGHT, *supra* note 137, at 20–21 (stating the rule that possession "is single and exclusive" and explaining that where several persons hold jointly "there is not a plural possession, but a single possession exercised by or on behalf of several persons").

[145] *See* Moringiello, *supra* note 1, at 156 (citing Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207).

transferability as the key factors. But we believed that a new concept would better serve these shared goals, not least because it would afford the flexibility to address features of digital assets (cryptographic exclusivity, shared control, protocol-mediated governance) that the law of possession, built for corporeal things, was never designed to accommodate.

As we will discuss in the next section, the 2022 UCC Amendments adopted the control framework, and Juliet played a central role in shaping it.

C. Convergence and Her Later Work

The 2022 Amendments to the UCC represent one of the most significant developments in commercial law in decades.[146] At their heart lies a new Article 12, which establishes "controllable electronic records" as a distinct category of personal property and makes "control" the organizing principle for their commercial circulation.[147] Juliet served as a commissioner from Pennsylvania and vice chair of the drafting committee that produced these amendments. She actively participated in drafting Article 12, helping to shape it over years of hard work and debate.[148] Article 12 reflects her core belief that commercial law should turn on the functional attributes of assets. However, instead of expanding possession, it creates an autonomous concept: control.

The very definition of a CER is built around the concept of control. A CER is "a record stored in an electronic medium that can be subjected to control."[149] An electronic record that cannot be subjected to control falls outside Article 12 entirely. Control is thus the gateway to the framework's application.[150]

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[146] *See* Tosato & Odinet, *supra* note 2.

[147] U.C.C. § 12-102(a)(1) (Am. L. Inst. & Unif. L. Comm'n 2022); *see also* Tosato & Odinet, *supra* note 2. A reminder is warranted here, *see supra* note 49: the "control" that organizes Article 12 is a newly defined concept, distinct both from the factual usage that runs through *False Categories* and from every earlier defined control in the UCC. In technique, the drafters did for CERs what Article 8 had done for investment securities: they crafted a standalone concept, purpose-built for a single asset class. In substance, the new concept differs from all of its statutory namesakes: it is a state of fact, constituted by the three powers of § 12-105(a) held with the requisite exclusivity, however that position was attained. The official comments describe it as "a proxy for and a functional equivalent of the transfer of physical possession of goods." U.C.C. § 12-105 cmt. 9.

[148] U.C.C. Amendments prefatory note, *supra* note 12, at vii–viii.

[149] U.C.C. § 12-102(a)(1).

[150] *See* Tosato & Odinet, *supra* note 2 (discussing control as the organizing principle of Article 12 and the definition of CERs as built around the concept of control).

Control, in turn, is defined functionally through three specific powers. A person has control of a CER when they have the power: (1) "to avail [themselves] of substantially all the benefit from the electronic record"; (2) to "prevent others from availing themselves of substantially all the benefit from the electronic record"; and (3) to "transfer control . . . to another person," along with the ability for that person to transfer control to yet another person.[151] These three powers are the statutory embodiments of the positive and negative elements that we traced through *False Categories*,[152] with the addition of a third power that ensures the asset can circulate in commerce in the same way that possession enables the transfer of tangible goods.

Article 12 puts into effect what we see as the reimagined exclusivity that we think is essential to make this concept work. Section 12-105(d) says that a person's powers are presumed to be exclusive if the person has those powers, so the onus is not on the person asserting control to prove the powers were exclusive.[153] Section 12-105(e) extends the concept of control to cases where a person acknowledges that they are holding the record on another person's behalf, covering situations where records are held by digital custodians, arrangements that have no precise analogue in the law of possession.[154] Finally, under § 12-105(b)(1), a person's power remains exclusive even if the electronic record, an associated record, or the system in which it is recorded "limits the use of the electronic record or has a protocol programmed to cause a change, including a transfer or loss of control or a modification of benefits afforded by the electronic record."[155]

The treatment of shared control is equally innovative. The law provides that a person's power over a digital asset remains exclusive even if it is shared

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[151] U.C.C. § 12-105(a).

[152] *See supra* Part I.B.2; Moringiello, *supra* note 1, at 149, 158.

[153] U.C.C. § 12-105(d); *see also id.* § 12-105 cmt. 5 (discussing the presumption of exclusivity and its relationship to § 1-206).

[154] *Id.* § 12-105(e); *see also id.* § 12-105 cmt. 8 (discussing control through another person and its relationship to agency principles and § 9-313(c)). The law of possession is not without functional relatives: possession has long been attained through agents and custodians, and a secured party may take possession through a bailee's acknowledgment. U.C.C. §§ 9-312(c), (d), 9-313(c). The analogue is nonetheless imprecise. A bailment presupposes delivery of a corporeal thing and vests possession in the bailee. § 12-105(e) instead attributes control, a state of fact defined by powers over an electronic record, to the beneficiary of the custodian's acknowledgment. The official comments treat the custodial holding of control as continuous with older practice even as its object and mechanics differ. *See id.* § 12-105 cmt. 9 ("Although the concept of shared control is newly introduced in the UCC, holding possession or control for another is not.").

[155] U.C.C. § 12-105(b)(1).

with others, provided it falls under § 12-105(b)(2).[156] This allows arrangements in which, say, four people share control of a digital asset but the powers can be exercised only by three of the four acting together. Section 12-105(c) then delineates when sharing does not preserve exclusivity: a person whose exercise of power depends on the cooperation of another who can act unilaterally, or who is the transferor of the interest, does not satisfy the exclusivity requirement.[157] These rules are novel and offer flexibility in control arrangements for digital assets. Indeed, they are equipped to handle innovative ways of control in practice, such as via multi-signature wallets, escrows, or governance schemes dictated by smart contracts.

Control is also an element of the definition of a qualifying purchaser under Article 12. A qualifying purchaser takes free of claims to a property interest in the record, receiving protection analogous to that afforded a holder in due course of a negotiable instrument under Article 3.[158] Only a person who obtains control of the CER is eligible for this protected status,[159] reinforcing once again the centrality of control to the framework.

Juliet had pointed out in 2007 that there was inadequate guidance in Article 9 on enforcement against general intangibles encumbered by a security interest. The statute contemplated repossession as a remedy for goods and collection as a remedy for payment rights but provided no parallel option for other intangibles.[160] The amendments to Article 9, and Article 12 itself, addressed Juliet's concerns comprehensively.

Control of a CER may substitute for a signed security agreement in creating an enforceable security interest.[161] A secured party may perfect its

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[156] *Id.* § 12-105(b)(2); *see also id.* § 12-105 cmt. 5 (Example 2, illustrating a four-party multi-signature arrangement in which exercise of powers requires action by three of the four participants).

[157] *Id.* § 12-105(c); *see also id.* § 12-105 cmt. 5 (Examples 3–7, illustrating when shared power does and does not preserve exclusivity); *id.* § 12-105 cmt. 9 (explaining the rationale for disqualifying transferees from the benefit of shared power when the transferor retains a blocking power). The common law knew concurrent possession, but only by collapsing it into a single possession held by or for several persons, *see supra* note 144, and possession through agents and custodians was familiar, *see supra* note 154; neither yields a rule for authority exercisable only in combination, still less for sorting symmetric from asymmetric configurations of shared power.

[158] *Id.* § 12-104(e).

[159] *See id.* § 12-105 cmt. 1 ("[O]nly a person having control of a controllable electronic record is eligible to become a qualifying purchaser."); *see also id.* § 12-104(g) (noting the "no-action" rule protects qualifying purchasers).

[160] Moringiello, *supra* note 1, at 125–31.

[161] U.C.C. § 9-203(b)(3)(D); *see also* Tosato & Odinet, *supra* note 2, at 43–49 (analyzing the secured transactions framework for CERs); Christopher K. Odinet & Andrea Tosato,

interest by obtaining control,[162] and in such cases takes priority over competing interests perfected by other methods, including prior filings.[163]

Relatedly, enforcement proceeds through control. A secured party with control of a CER may dispose of it just as it would dispose of goods it holds in possession. Enforcement against a CER thus parallels that against tangible collateral.

The concept of control that Article 12 adopted was thus not the expansion of possession that Juliet had originally proposed in *False Categories*. Yet her later scholarship confirms that she came to embrace this choice. In *The Property Law of Tokens*, co-authored in the FLORIDA LAW REVIEW in 2022 with one of us, she worked squarely within the framework that emerged from the collaborative drafting process, analyzing how the law should treat digital assets built on blockchain technology.[164] The article traced the history of legal tokenization from negotiable instruments through securities to NFTs, showing that NFTs fail to perform the tethering function that characterizes every

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Floating Liens Over Crypto-in-Commerce, 99 IND. L.J. 367, 386–87 (2023) [hereinafter Odinet & Tosato, *Floating Lien*] (explaining that the 2022 UCC Amendments dispense with a signed security agreement where the secured party takes control of a CER pursuant to the debtor's security agreement).

[162] U.C.C. §§ 9-107A, 9-314. Perfection by control is not unique to CERs. Under § 9-314(a), a security interest in "controllable accounts, controllable electronic records, controllable payment intangibles, deposit accounts, electronic documents, electronic money, investment property, or letter-of-credit rights may be perfected by control of the collateral under Section 7-106, 9-104, 9-105A, 9-106, 9-107, or 9-107A," and § 9-314A provides likewise for chattel paper. Each of those provisions, however, deploys its own concept of control. Control of a deposit account, of investment property held through an intermediary, and of an electronic copy of a record evidencing chattel paper rests, in whole or in substantial part, on an agreement with, or the cooperation of, an identified party: the bank agrees to follow the secured party's instructions, the securities intermediary agrees to comply with entitlement orders, the system identifies the secured party as the assignee. *See* U.C.C. §§ 9-104(a), 8-106(c)–(d), 9-106, 9-105. Article 12 control involves no such undertaking; it is a state of fact. *See supra* notes 49, 147; *see also* Tosato & Odinet, *supra* note 2, at 43–49 (analyzing the secured transactions framework for CERs); R. Wilson Freyermuth, Christopher K. Odinet & Andrea Tosato, *Crypto in Real Estate Finance*, 75 ALA. L. REV. 93, 119–20 (2023) (describing perfection by control of an NFT that qualifies as a CER and the priority advantages that make control the preferable method).

[163] U.C.C. § 9-326A. For the policy rationale underlying this non-temporal priority rule, see UNIDROIT, Principles on Digital Assets and Private Law, Principle 16 & cmt. 2 (2023) (identifying four justifications: the controlling secured party's greater reliance on the encumbered asset; the impracticality of registry searches for digital assets where the transferor may be unidentifiable; alignment with margin lending practice; and the controlling secured party's superior enforcement position).

[164] Moringiello & Odinet, *Token Law*, *supra* note 13, at 615–25.

historically recognized form of legal token.[165] It also identified the secured transactions problems that arise when NFTs are classified as general intangibles under the pre-amendment UCC, citing *False Categories* for the proposition that Article 9 lacks adequate remedies for non-payment intangibles.[166] Nowhere in those pages did she argue that the amendments should have expanded possession instead of creating control.

This evolution in Juliet's work exemplifies something crucial about her as a scholar. She held strong positions based on careful analysis, but she remained open to engagement with alternative views and was willing to refine her thinking when new arguments or new circumstances warranted. The Juliet who wrote *False Categories* in 2007 proposed expanding possession because that seemed the most elegant solution to the problems she had identified at that point in time, several years before the advent of Bitcoin. The Juliet who helped draft the 2022 UCC Amendments and wrote *The Property Law of Tokens* embraced control as a distinct category. Juliet's last published work reflects her evolving views on the law as technology progressed. Distributed ledgers now make it possible for a person to hold exclusive powers over a digital asset without any intermediary serving as the registrar, a state of affairs that the domain names of 2007 scarcely foreshadowed. Whereas she once advocated for extending existing concepts of possession to digital assets, the processes of law reform eventually led her to appreciate the benefits of carving out a new concept for CERs, thus achieving her policy aims while sidestepping the doctrinal difficulties that such an expansion would have entailed.

Juliet wholeheartedly engaged with law reform projects, not merely to advance certain arguments, but to see them through to implementation and thereafter to assess how well they met her goals. Her writings thus reflect her intellectual journey from first articulating problems, to recommending law reforms, to observing how they operated in practice.

We lost Juliet before we could fully explore with her the implications of the framework she helped create. Difficult questions remain, not least the challenges posed by tokenization. Tokenization of tangible assets raises novel questions about how a CER representing rights in a physical thing interacts with the UCC categories governing that thing. Tokenization of intangible assets, securities above all, raises still harder questions about the relationship between Article 12 and the existing regimes governing the assets that CERs purport to represent.[167] How courts should apply Article 12's principles to assets that push

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[165] *Id.* at 621.

[166] *Id.* at 661.

[167] *See* Tosato & Odinet, *supra* note 2 (discussing the challenges of tokenization within the

the boundaries of what "control" means is an open and pressing question. We would have valued Juliet's insights. But her work, from *False Categories* through her later scholarship and her service with the Uniform Law Commission, provides the intellectual foundation for addressing them.

Conclusion

In Juliet's passing, we lost a scholar whose vision extended beyond the horizon that others could see, who identified fundamental problems before they became crises, and who offered solutions grounded in careful historical analysis and deep theoretical insight. We also lost a collaborator who brought intellectual rigor and genuine openness to the difficult work of translating theory into statutory language. Juliet listened to others just as carefully as she argued her views. And, perhaps most importantly, she was also open to refining her positions through engagement with others rather than always clinging to her initial views. We lost a matchless mentor who invested countless hours in the development of others (including both of us) and who celebrated their successes just as though they were her own. Juliet understood that scholarship advances best through the generous sharing of ideas. But most of all, we have lost a friend whose warmth, humor, and humanity made the sometimes-isolating work of legal scholarship feel like a collective endeavor.

Juliet's work endures in the 2022 UCC Amendments, in the scholarship of those she influenced, and in the example she set for what it means to be both rigorous and generous, both principled and flexible, both historically grounded and forward-looking. The conversations we will never have with her represent an irreplaceable loss. But, at the same time, the foundation she built (in law, in scholarship, and in the large community of people whose lives she touched) will continue to shape commercial law for many generations to come.

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framework of the 2022 UCC Amendments).