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An Essay on Horseless Carriages and Paperless Negotiable Instruments: Some Lessons from the Article 8 Revision

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When locomotives were developed in the early part of the nineteenth century, they were called "iron horses." When automobiles were developed at the end of the nineteenth century, they were called "horseless carriages." Today, those metaphors sound quaint. It is amusing that the people of the nineteenth century could not think of these marvelous new devices in any way other than by commenting on their "horseness" or lack thereof. But were the terms really all that odd? At the time, horseness was not an incidental characteristic of modes of land transportation. From the dawn of civilization, the legs of animals—whether human or non-human—provided the only means of land transportation, and for many any centuries the horse had been the animal of choice. In a very real sense, horseness was a key concept in land transport, so any new means of land transport could quite sensibly be regarded as some variant on the horse. If the automobile had remained a plaything for the rich and our air remained pungent with the odor of manure rather than petroleum fumes, no adjective would need be added to the word "carriage" to express the assumed "horse drawn"; and an automobile still would be, in a sense more literal than metaphoric, a horseless carriage. But that's not what happened. Horses and carriages are now the curiosities; cars and trucks are the ordinary modes of land transport. Not surprisingly, then, the "horseless carriage" metaphor has become archaic. As practices change, so too must language and concepts. That, in a nutshell, is the lesson to be drawn from the past few decades'
work on the commercial law of investment securities.

Article 8 has the distinction of being the first article of the Uniform Commercial Code to reach the third generation. We have the original version,1 the 1978 version,2 and now the 1994 version.3 The original version of Article 8 was based on the traditional system in which transfer of securities was effected by physical delivery of certificates from seller to buyer. The 1978 version added new provisions dealing with "uncertificated securities." The most recent revision effort recast the law to deal more adequately with the system of securities holding through intermediaries.

For those interested in the study of the process of legal response to technological change, the somewhat checkered career of the 1978 revision of Article 8 is an extremely instructive episode. What was done in that revision project was so obviously sensible that it is hard to imagine how one could have done anything else. Indeed, there are probably many projects exactly like the 1978 revision that are currently either being considered or undertaken. We had a commercial system based on paper and a law written in terms of paper. The paper was being replaced by electronic media, so the law had to be revised to reflect that change. How do you do that? Simple; you just take the paper part out. If we had a law of paper security certificates, we add a law of paperless "uncertificated securities." So today we hear a good deal of discussion of the need for a law of electronic negotiable promissory notes, or electronic bills of lading. Or, to use current jargon, we consider rewriting the law in "media neutral" terms, so that it will not matter whether the thing in question is represented by carved stone, ink on paper, or electronic pulses. But there's the rub. Are we really so sure that the world is media neutral? To define, and hence limit, law revision projects by the effort to devise electronic equivalents of the familiar paper-based representations, such as security certificates, promissory notes, or bills of lading, is to assume that technological change will have no significant ontological consequences. We'll still have the same old things, they'll just look (or not look) a little different.

The lesson from Article 8 is that it doesn't always work that way. By the late 1960s it was clear that the traditional certificate-

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1. U.C.C. Article 8 (1968).
2. U.C.C. Article 8 (1990). The 1978 version of the U.C.C. is contained in the 1990 official version of the U.C.C.
3. U.C.C. Revised Article 8 (1994). All references to the UNIFORM COMMERCIAL CODE, the "Code" or to "Sections" refer to the 1994 official version of the UNIFORM COMMERCIAL CODE unless otherwise stated.
The securities markets were quite literally grinding to a halt because the back-office operations needed for settlement by physical delivery could not keep pace with increasing trading volume. At the time of the “paper crunch” in the late 1960s, the trading volume on the New York Stock Exchange that so seriously strained the capacities of the clearance and settlement system was in the range of 10 million shares per day. Today, the system can easily handle daily trading volume on routine days of hundreds of millions of shares. Even during the October 1987 market break, when daily trading volume reached the current record level of 608 million shares, the clearance and settlement system functioned relatively smoothly. Obviously this processing capacity could have been achieved only by the application of modern electronic information processing systems, and that is the case. Physical delivery of certificates plays only a minor role in the settlement system that processes this enormous volume of securities trading. Yet the legal rules under which the system operates are not the uncertificated securities provisions of Article 8 that were drafted in response to the obvious fact that the paper-based system had to be replaced by an electronic system.

Displaying the usual perverse tendency of the world to behave in a fashion other than that which seems most logical to a law professor, the operations people in the securities clearance and settlement system solved the problem in a different way. They have kept the paper certificates, they just don’t do anything with them. The certificates are surrendered to a securities depository, such as the Depository Trust Company, which holds the certificates on behalf of its member banks and broker, who in turn hold on behalf of themselves and their customers. Settlement of securities trades can then be effected merely by entries on the books of these intermediaries.

The most significant step in the Revised Article 8 project was the realization that the system of securities holding through intermediaries was sufficiently different from the traditional system in which an investor’s right to the underlying security was represented by a definitive paper certificate, or from a system of the sort contemplated by the 1978 revision, where the investor’s interest would be recorded electronically on the issuer’s shareholder registry, that it required a different set of commercial law concepts and rules. Thus, the basic organizational principle of the 1994 revision is the distinction between the direct holding system, whether certificated or not, and the indirect holding system. The 1994 revision uses the new term “security entitlement” to describe the interest of a person who holds a secu-
rity through a securities intermediary, and the new term "entitlement holder" to refer to a person who has a security entitlement. A new Part 5 of Article 8 specifies the basic rights of those who hold security entitlements, subject to any applicable regulatory law such as the federal securities laws. The term "security entitlement" is defined in section 8-102(a)(17) as the package of rights that a person who holds a security through a securities intermediary has against that securities intermediary and the property held by that securities intermediary. Like many legal concepts, however, the meaning of "security entitlement" is to be found less in any specific definition than in the matrix of rules that use the term.

The Part 5 rules provide that a securities intermediary must itself maintain a sufficient quantity of securities, however held, to satisfy all of its entitlement holders, and that the positions held by the intermediary for the entitlement holders are not subject to claims of the intermediary's general creditors. Thus, a security entitlement is not merely an in personam claim against the intermediary, but a property interest consisting of a pro-rata claim to the fungible pool of underlying securities held by the intermediary. The concept of a security entitlement does, however, include a package of rights against the intermediary. The indirect holding system rules cover such basic matters as the duty of the securities intermediary to pass through to entitlement holder the economic and legal rights of ownership of the security, including the right to receive payments and distributions, and the right to exercise any voting rights. The rules also specify that the securities intermediary has a duty to comply with authorized orders from the entitlement holder and to con-

4. U.C.C. Revised § 8-102(a)(17). More precisely, security entitlement is defined as the package of rights of a person who holds a "financial asset" through a securities intermediary. "Financial asset" is a broader term than "security." See id. §§ 8-102(a)(9), (17). For example, a banker's acceptance or other money market instrument held through a securities account is a "financial asset," but not a "security." Id. § 8-103(d). Prefatory Note III.C.9. For simplicity, this Essay will refer to securities rather than distinguishing between securities and other financial assets.

5. Id. § 8-102(a)(7).
6. Id. §§ 8-501 to 511.
7. Id. § 8-509.
8. Id. § 8-504.
9. Id. § 8-503.
10. Id. §§ 5-503(a), (b).
11. Id. § 8-505.
12. Id. § 8-506.
13. Id. § 8-507.
vert the entitlement holder's securities position into any other available form of securities holding that the customer requests, such as delivering a certificate or transferring the position to an account with another firm.\footnote{Id. § 8-508.}

To see the difference between the basic concepts of the new indirect holding system rules and those of the traditional Article 8 system, consider how settlement of a typical securities trade is analyzed under the old law and the new. Suppose that Able places an order through Broker One to sell 10,000 shares of ABC Co. stock, and that Baker places an order through Broker Two to buy 10,000 shares of ABC Co. stock. Through the trading facilities of the exchange or market on which that security is traded, Able's sell order is matched with Baker's buy order, so that a contract is formed for the purchase and sale of 10,000 shares of ABC Co. stock. By the custom and rules of the exchange or market, that contract calls for settlement five days after trade date (soon to be three days). Settlement requires that Able cause it to occur that Baker acquire a 10,000 share position in ABC stock. On the settlement date, entries are made on the records of Broker One, Broker Two, and the central securities depository so that Able's account with Broker One is debited for 10,000 shares, Baker's account with Broker Two is credited for 10,000 shares, and appropriate entries are made on the records of the depository to reflect the changes in the positions of Broker One and Broker Two.

The traditional Article 8 rules on security certificates were based on the idea that the paper certificates could be regarded as complete reifications of the underlying rights, so that the rules on transfer of securities could be written using the same basic concepts as the rules for physical goods. The ordinary mechanism for transferring property interests in chattels is physical delivery; so too, physical delivery of a security certificate was the basic method of dealing with interests in securities. The old Article 8 rules used the same conceptual structure securities transactions implemented through the indirect holding system. By virtue of the rather complex and obscure provisions in section 8-313 of the 1978 version, specifically, section 8-313(1)(d)(iii), one could conclude that once all of the entries were made on the records of Broker One, Broker Two and the depository, this resulted in the "transfer" to Baker of "a security."

The concept of transfer is so familiar that its use in the analysis of settlement of securities trades seems entirely natural, whatever the details of the particular settlement system. Yet if one looks a bit more closely at the operation of the modern clearance and settlement
system, one begins to see some difficulties with the continued use of the transfer concept. Any two major broker-dealers may have executed hundreds or even thousands of trades with each other in a given security on a single day. It would be extremely inefficient if each transaction had to be settled by making a corresponding individual entry on the records of the depository. Significant processing efficiency can be achieved by netting all of the transactions among the major players that occur each day, so that entries need be made on the depository's books only for the net changes in the positions of each participant at the end of each day. Thus, in our example, although Broker One will debit Able's account for 10,000 shares of ABC stock and Broker Two will credit Baker's account for 10,000 shares, one would not be able to identify any specific entry on the records of the depository as reflecting the transfer of those 10,000 shares from Broker One to Broker Two. Indeed, it might well turn out that Broker One had a net receive position and Broker Two a net deliver position for that settlement date. How, then, is one to give coherent meaning to the concept that settlement of the trade between Able and Baker occurs by transfer of 10,000 shares of ABC stock from Able to Baker?

Actually, current Article 8 fineses this question. Though current section 8-313 permits one to conclude that a transfer occurred to Baker, it never actually says that this was a transfer from Able to Baker; indeed, it never says anything about who the transferor was. To be sure, there are ways of tidying up the transfer analysis. One could analyze the steps in the settlement process one by one, so that however the positions between Broker One and Broker Two may have been adjusted, the final step in which an entry was made on Broker Two's records crediting Baker's account for 10,000 shares could be described as a transfer from Broker Two to Baker. The key point, however, is that the only reason that one would need to trace the path of an individual item of property through the settlement process is to enable one, by the technique made famous by Procrustes, to squeeze the analysis into the same conceptual structure used for simple face to face deliveries of discrete identifiable physical objects.

Revised Article 8 takes a different approach to the analysis of settlement of securities transactions through the indirect holding system. Section 8-501(b) provides that "a person acquires a security entitlement if a securities intermediary . . . indicates by book entry that a financial asset has been credited to the person's securities account." Thus, when Broker Two credits Baker's account for 10,000 shares of ABC stock, Baker acquires a security entitlement to 10,000
shares of ABC stock.\textsuperscript{15} That security entitlement is a package of rights against Broker Two and the property held by Broker Two, but the step by which Baker acquired that package of rights and interest is not described by Revised Article 8 as a "transfer" of something from Broker Two to Baker.

Traditionally, one of the principal objectives of the commercial law of investment securities was to assure that the title of a purchaser was secure even though the transaction in which the purchaser acquired its interest may have been wrongful against someone else. Negotiability rules accomplished that objective by providing that a purchaser who took delivery of a security certificate in proper form acquires it free from any adverse claims if the purchaser gave value and acted without notice of any adverse claim. If we think of the task of law revision in this area in terms of finding electronic equivalents for the traditional paper-based negotiable security certificates, the redescription of the property interest of a person whose interest in a security is reflected in electronic records would seem to call for finding an electronic equivalent of negotiability. Viewed most narrowly, the question would seem to be "Are security entitlements negotiable?" That, however, is not a particularly helpful way of framing the question. The specific rules and concepts associated with negotiability are inextricably entwined with the system in which abstract rights are reified in pieces of paper which are then transferred from person to person. If we shift away from a commercial law analysis of settlement of securities trades based on the concept of a transfer of a discrete thing from person to person, there is no need or occasion to ask the traditional questions posed by negotiability doctrines.

Asking whether a purchaser takes an item of property free from, or subject to, property claims presupposes that the purchaser has the same thing that someone else used to have.\textsuperscript{16} Thus, asking whether an electronic representation of a security or other financial right is "negotiable" is a bit like asking whether a car with a flat tire is a lame horseless carriage. There is, to be sure, an important question to be addressed here. But, to continue the metaphor, the question is not whether the horseless carriage needs to be reshod or has to be shot, the question is whether we can keep the vehicle running. So too with the commercial law of the securities settlement system. Rather

\textsuperscript{15} Similarly, if settlement of the 10,000 shares traded between Broker One and Broker Two were effected by an individual entry on the books of securities depository, Broker Two would have acquired a security entitlement to 10,000 shares of ABC stock when its account with the securities depository was credited.

than asking whether security entitlements are, or could be, "negotiable," we need to ask whether the questions for which negotiability rules were the answer will also arise in an electronic environment, and if so, we need to provide appropriate solutions.

The real question, then, is what legal rules need be established in order to ensure that a person who holds securities through a securities intermediary does not face the risk of losing her position if someone else contends that the transaction which resulted in the person having that position was wrongful. For example, suppose that Able in the example described above had been holding the 10,000 shares of ABC stock as trustee for Claimant, and that Able acted in violation of her obligations as trustee in selling the stock. Could Claimant assert an adverse claim to the 10,000 share position that Baker now holds through the account with Broker Two? The answer might well be no, simply because the item of property that Baker holds is not the "same thing" as the item that Able previously held as trustee for Claimant. There might however, be a plausible argument, via equity tracing rules and constructive trust doctrines, that Claimant's interest followed through the steps in the transaction so that it could be asserted against the property in Baker's hands. In any event, from the perspective of the design of commercial law rules, a system of rules for securities settlement would obviously be incomplete if it did not deal directly with this problem. Revised Article 8 does just that—it deals directly with the issue. Section 8-502 provides that "An action based on an adverse claim to a financial asset, whether framed in conversion, replevin, constructive trust, equitable lien, or other theory, may not be asserted against a person who acquires a security entitlement under Section 8-501 for value and without notice of the adverse claim." There is no need to ask whether a security entitlement is or is not "negotiable;" nor is there is there any need to answer the metaphysical question whether the security entitlement that Baker has is the "same thing" that Able previously had. All that is necessary it to state the issue directly and provide a clear answer.

Much the same story can be told with respect to the other major concern in the commercial law of securities—providing a simple and certain structure for the creation of security interests in investment securities. The traditional rules concerning security interests in investment securities were based on the common law pledge. A secured party who wished to obtain the fullest measure of protection would take physical possession of the certificate representing the security, with any necessary indorsement. This physical delivery sufficed to give the secured party "possession" of the collateral and thereby es-
establish an effective common law pledge. Moreover the pledgee could qualify as a “bona fide purchaser” who took free from adverse claims and thereby assure priority over any other claimants, including holders of conflicting security interests. Revised Article 8, and related provisions of Article 9, set out a new structure of rules that deal directly with the requirements for attachment, perfection, and priorities of security interests in investment securities.\textsuperscript{17} The new rules are based on the concept of “control.” The formal definition of control, set out in section 8-106, is somewhat complex, but the basic point is simple. A secured party obtains control if the secured party has done whatever is necessary, given the way that the security is held, to assure itself that it can have the collateral sold off without further consent or action by the debtor. Thus, as with respect to issues of adverse claim protection, it is neither necessary nor useful to ask what it would mean to obtain “possession” or “constructive possession” of something which by definition is not a physical object capable of possession. Rather, the task is to accomplish the objectives that the old rules accomplished through physical concepts, but do so without reliance on physical concepts.

In one of my earliest essays on the Article 8 revision project, I described the modern indirect holding system in language which at the time struck me a rather clever: “For most, if not all, of the securities held through DTC, physical certificates representing DTC’s total position do exist. These ‘jumbo certificates,’ however, are never delivered from person to person. Rather they are stored in carefully guarded vaults, where they live out their wholly uneventful lives as testaments to the difficulties of adapting legal structures to rapidly changing commercial practices.”\textsuperscript{18} When I first learned about this system, the only word I could think of to describe it was “silly.” Indeed, during the most enjoyable part of my job as Reporter—going on “field trips” to see how the system worked—I insisted that someone pull out one of these certificates so that I could actually see and touch it, mostly because I couldn’t help but feel a bit skeptical about whether there really were any such certificates. But as I reflect upon the phenomenon now, a few years later, I see it somewhat differently. The fact that the certificates in an immobilized securities depository system are essentially irrelevant points to some rather important things about the task of adapting law to technological change. In this setting—and I suspect in many others—the movement from a paper

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\textsuperscript{17} U.C.C. Revised § 9-115 (1994).
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to an electronic environment has not simply been a matter of changing predicates of unchanging legal objects; the significant objects themselves have changed. In the traditional securities holding system, the key relationship for commercial law was that between the investor and the issuer, and that relationship could be analyzed by application of property concepts to a physical embodiment of the underlying rights. In the modern indirect holding system, it remains just as true that for most purposes the key relationship is that between the investor and the issuer, but for purposes of the commercial law rules concerning the mechanics of settlement the key relationship is that between an investor and its securities intermediary. That relationship is neither represented by any physical or metaphysical object, nor capable of analysis in terms drawn from the property law of physical objects. As the significant legal objects change, so too must the legal language. A car is not really a horseless carriage, and a securities position recorded electronically is not really an electronic certificate.