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**THEN AND NOW: MARK PETTIT'S *MODERN UNILATERAL CONTRACTS* IN THE 1980S AND IN THE AGE OF BLOCKCHAINS**

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Having read Jack Beermann and Fran Miller's moving and insightful essays, I find myself unable to express in further words how wonderful Mark was and how much I miss him. I ask therefore that Jack and Fran allow me to join their celebration of Mark's inimitable brilliance and generosity. What I offer today is a particular word of praise for an article by Mark which is not only my favorite, but also an extremely well regarded contribution to contract law scholarship: *Modern Unilateral Contracts*.<sup>1</sup> In this oft-cited and oft-quoted piece,<sup>2</sup> published in this *Law Review* in 1983, Mark took issue with the conventional wisdom of the time. He showed that unilateral contracts did not belong at the far margins of contract law, where Karl Llewellyn and others would have them,<sup>3</sup> but rather, very near the center, where they were doing major work for the little guy in a range of judicial proceedings.<sup>4</sup> I will first highlight the impact, both doctrinal and jurisprudential, of this article at the time Mark wrote it. I will then move the clock to the present day and discuss the striking analytical value of unilateral contracts in the age of blockchains and smart contracts—a testament to Mark's insight and evergreen legacy.

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The landscape Mark analyzed thirty-five years ago may be summed up as follows. Among the drafters of the *Restatement Second of Contracts*, the unilateral contract—"I will give you \$100 if you walk over the Brooklyn

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<sup>1</sup> Mark Pettit, Jr., *Modern Unilateral Contracts*, 63 B.U. L. Rev. 551 (1983).

<sup>2</sup> See, most recently, MELVIN A. EISENBERG, FOUNDATIONAL PRINCIPLES OF CONTRACT LAW 430 (2018) ("[I]n an important article Mark Pettit showed that the tide has come back in because unilateral contracts are now doing very significant work that could not easily be done by bilateral contracts.").

<sup>3</sup> Karl Llewellyn, *On Our Case Law of Contract: Offer and Acceptance, I.*, 48 YALE L.J. 1, 36 (1938).

<sup>4</sup> "Many of the modern unilateral contracts cases . . . involve claims by an individual offeree against an organizational offeror—the little guy against the big organization." Pettit, *supra* note 1, at 574.

Bridge”<sup>5</sup>—had fallen in disrepute because it seemed to put the offeror at the mercy of the offeree: the offeree could never be required to start or to complete his performance, while the offeror was bound to her promise as soon as the offeree set one foot on the bridge. The case of Sarah Hodgkin, a widow who had promised her farm to her daughter and son-in-law if they only would live with her through her old age, is a telling illustration of the offeror’s potential predicament:<sup>6</sup> the young couple did move in with Ms. Hodgkin but then proved to be utterly unkind; at which point the old lady realized, through legal process, that she could no longer convey the farm to others and would be stuck for life in miserable company.<sup>7</sup>

Because unilateralism is structurally at odds with the notion of consent, and for other reasons carefully dissected in Mark’s article, the drafters of the *Restatement Second* tried to purge the term “unilateral contract” from contract law.<sup>8</sup> But the legal device itself was too useful to be jettisoned. For instance, a unilateral offer of a reward—say, for finding a lost puppy—allowed the offeror to gain the help of multiple seekers, and yet to compensate only the first finder. Accordingly, the term “option contract” appeared in the *Restatement Second*, apt as the term was to capture a variety of transactions, from deferred purchases of real estate to stock options for start-up employees.<sup>9</sup> The drafters preserved as well the principle that the offeror would be bound to keep her promise as soon as the offeree began or tendered his performance, but only in the case in which she had unambiguously expressed her intent to undertake a unilateral obligation.<sup>10</sup>

Kicked out of the Restatement’s house in 1964, unilateral contracts came back through the windows of many state courts. Mark’s painstaking analysis of the case law highlighted hundreds of judicial opinions which identified offers for unilateral contracts in a variety of circumstances. Employers’ promises, often expressed through benefit plans and handbooks, emerged as the most notable

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<sup>5</sup> The Brooklyn Bridge hypothetical is a classical illustration of the unilateral contract doctrine. See, e.g., I. Maurice Wormser, *The True Conception of Unilateral Contract*, 26 YALE L.J. 136, 136 (1916).

<sup>6</sup> *Brackenbury v. Hodgkin*, 102 A. 106, 107 (Me. 1917).

<sup>7</sup> *Id.* at 108. The casebook DAWSON ET AL., *CONTRACTS CASES AND COMMENT* 346 (10th ed. 2013), reports an anecdote according to which Mr. Brackenbury would regularly—and sadistically—read aloud to his mother-in-law a transcript of the judicial record of the case. In 1984, David Daskal, then a student of Mark’s, turned this story into a wonderfully humorous poem, *A Typical Evening at Home with the B’s and H’s*: “Mother dear . . . It’s time for your bedtime reading . . .” For many years thereafter, Mark recited the poem in class after a good Socratic discussion of the case. His act was irresistibly funny and made the lesson unforgettable. Following Daskal’s example, many of Mark’s students wrote contracts-inspired lyrics. The promised reward was that Mark would sing or recite their creation in class. He duly performed each time.

<sup>8</sup> A Tentative Draft of the Restatement Second of Contracts was first released in 1964.

<sup>9</sup> RESTATEMENT (SECOND) OF CONTRACTS § 87 (AM. LAW INST. 1981).

<sup>10</sup> *Id.* § 45.

category. In the United States, employment contracts are presumptively at will: employees can quit when they please and, *vice versa*, may be fired overnight for no cause whatsoever. In the 1970s this was simply the rule. But the unilateral contract device allowed judges to turn that rule into a rebuttable presumption:<sup>11</sup> insofar as the benefits plan, which usually portrayed a friendlier working environment than the at-will rule does, limited the employer's power to dismiss, its terms would be considered an offer for a new agreement, taking the place of the at-will one. The employees had not agreed to such terms in so many words, but by showing up at work any time after receiving notice of their benefits, they had set, so to speak, one foot on the bridge, making the employer's promises enforceable.<sup>12</sup> In Mark's words: "The primary reason for the popularity of unilateral contract analysis in the employment area is that the concept allows a finding of promissory liability of the employer without the necessity of finding a return promise by the employee."<sup>13</sup>

Mark's careful analysis of this line of cases was remarkable for at least two reasons. The first was that he managed to "unearth the . . . corpse" of unilateral contracts,<sup>14</sup> and in so doing made a major doctrinal contribution to the theory and practice of the law. The second was that he addressed, through the lens of contract analytics, the thorny jurisprudential question of judicial discretion and its limits.

The importance of this work in the 1980s should not be lost. American legal realists had long established that judicial precedents do not fully constrain a judge's work. Karl Llewellyn had famously declared that "Within the law, . . . rules guide, but they do not control decision. There is no precedent the judge may not at his need either file down to razor thinness or expand into a bludgeon."<sup>15</sup> But since the 1970s, critical legal scholars had begun to take that point to an extreme.<sup>16</sup> The indeterminacy thesis—namely, the idea that legal materials were a field open to ideological manipulation—seemed to be gaining scholarly strength, triggering in turn multiple strands of reactions in legal academia.<sup>17</sup>

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<sup>11</sup> Douglas A. Hedin, *A Citation History of Pine River State Bank v. Mettelle: A Study of Common Law Change, Judicial Influence, and the Birth of a Discipline*, 33 WM. MITCHELL L. REV. 297, 313 (2006).

<sup>12</sup> *Pine River v. Mettelle*, 333 N.W.2d 622 (Minn. 1983), contains a particularly clear example of this line of reasoning.

<sup>13</sup> Pettit, *supra* note 1, at 565.

<sup>14</sup> *Id.* at 551.

<sup>15</sup> KARL N. LLEWELLYN, *THE BRAMBLE BUSH* 150 (Oceana Publ'ns 1951) (1930).

<sup>16</sup> See Duncan Kennedy, *Freedom and Constraint in Adjudication: A Critical Phenomenology*, 36 J. LEGAL EDUC. 518 (1986).

<sup>17</sup> See, e.g., Kenneth J. Kress, *Legal Indeterminacy*, 77 CAL. L. REV. 283 (1989); Lawrence B. Solum, *On the Indeterminacy Crisis: Critiquing Critical Dogma*, 54 U. CHI. L. REV. 462 (1987).

With usual composure, as well as faith in the power of lawyerly technique, Mark duly chronicled the work of highly creative judges, who had applied a rather stale doctrine to advance pro-employee causes. Letting the cases speak for themselves, Mark demonstrated the enduring malleability of legal precedent and courts' ability to pursue progressive goals with no rupture in the chain of stare decisis. While he "eschew[ed] provocative language,"<sup>18</sup> he did note the relevance of personal convictions in judicial deliberation: "[p]erhaps judges are motivated by some underlying sense of values such as fairness or equality or even redistribution of wealth—values similar to those that might motivate legislators to enact a minimum wage law . . . ."<sup>19</sup> And in his typical quest for integrity, Mark—at heart a realist—argued for a higher degree of transparency in judicial motivations.<sup>20</sup>

Yet Mark did not and would not embrace the indeterminacy thesis, not even in its mildest version; rather, he drew his own line in the sand between appropriate judicial reach and undue law making from the bench: judges, he thought, were *not* supposed to superimpose community standards of solidarity upon freely given assent. Insofar as the finding of a promissory obligation depended on terms somehow put forth by the employer, and was therefore credibly tethered to a classical notion of autonomy, he would endorse judicial opinions as perhaps "stretching the point but still defensible."<sup>21</sup> Beyond that line, he would become calmly critical of judicial reasoning, and would take apart the unilateral contract device whenever he found it misapplied.<sup>22</sup> In his quiet but powerful way, Mark therefore brought his important research to bear on a major jurisprudential debate of his time.

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The modern unilateral contract is even more modern today. In fact, it is avant-garde. Mark, who managed to be a twenty-first-century rock star when he sang the classics and discussed old chestnuts of contract law, would have found this turn of events somehow intriguing. He and I were supposed to meet and talk about new forms of unilateral contracts this past May, but his illness worsened

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<sup>18</sup> Jeremy Telman, Teaching Assistants: Mark Pettit, Jr. (2007) [https://lawprofessors.typepad.com/contractsprof\\_blog/2007/09/teaching-assist.html](https://lawprofessors.typepad.com/contractsprof_blog/2007/09/teaching-assist.html) [<https://perma.cc/ZV6H-SD4Y>].

<sup>19</sup> Pettit, *supra* note 1, at 582.

<sup>20</sup> *Id.* at 593 ("All that we can hope for from judges is an explicit recognition of [their] justifications for imposing (or denying) liability and a candid articulation of the relative role of [such] justifications in the decisionmaking process.").

<sup>21</sup> *Id.* at 579 (footnote omitted).

<sup>22</sup> *See id.* at 577 (noting that, in the absence of at least implied promises of benefits, "unilateral contract is an inappropriate rationalization that allows judges to avoid confronting their true motivations"); *id.* at 579 (critically discussing cases he found "difficult to reconcile with the promissory principle").

rapidly and put an end to our conversation. I take this as an opportunity to keep it going.

Today, offers of reward are a key component of the blockchain technology, which is the new frontier of the digital economy.<sup>23</sup> The notorious Bitcoin, an early and imperfect, but already widespread type of cryptocurrency, is a prize to be cashed out only upon performance of hard work.<sup>24</sup> Instead of crossing the Brooklyn Bridge, offerees are asked to solve complex mathematical problems—so complex, indeed, that their solutions must be “mined” like precious gems through massive computational efforts. The miner who first solves the riddle of the moment and delivers a digital “proof of work” is rewarded with Bitcoins.<sup>25</sup>

Coin mining occurs in what is known as the first layer of the blockchain ecosystem. The second layer consists of the range of digital transactions that coin owners have access to—i.e. the things and services we can buy if we dare enter the new crypto-world. Many such transactions take the form of smart contracts—agreements in digital form that are self-executing and self-performing:<sup>26</sup> as with a vending machine, which ejects our treat if and only if we pay upfront, in a smart contract the desired performance is triggered by a string of encoded events, immutably stored onto a blockchain infrastructure. Plenty of open-source code is available to programmers of all stripes to design transactions in smart-contract form, from car rentals to supply chains.<sup>27</sup> Interestingly, the unilateral contract template features prominently also in this second layer of the blockchain technology: U.S. scholars have noted that insofar as smart contracts can be deemed true contracts in a legal sense, they are likely to be of the unilateral type.<sup>28</sup>

The ultra-modern unilateral contract can look like this:

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...  
require(sigR.length == threshold);
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<sup>23</sup> Kevin Werbach & Nicolas Cornell, *Contracts Ex Machina*, 67 DUKE L.J. 313 (2017-2018).

<sup>24</sup> PRIMAVERA DE FILIPPI & AARON WRIGHT, BLOCKCHAIN AND THE LAW. THE RULE OF CODE 26-27 (2018).

<sup>25</sup> *Id.* at 13. Not all cryptocurrencies require mining (a cumbersome and energy-guzzling process) or proof of work. Algorand, for instance, adopts an alternative “proof of stake” model. ALGORAND, [www.algorand.com](http://www.algorand.com) [<https://perma.cc/U9UX-8GFE>] (last visited Nov. 25, 2018).

<sup>26</sup> Cryptographer Nick Szabo is usually credited for coining the label “smart contracts.” See Werbach & Cornell, *supra* note 23, at 314 n.2, 319.

<sup>27</sup> DE FILIPPI & WRIGHT, *supra* note 24, at 82 (noting that smart contracts libraries of open-source code can develop online, thereby offering a range of off-the-rack functionalities to myriad users).

<sup>28</sup> See Max Raskin, *The Law and Legality of Smart Contracts*, 1 GEO. L. & TECH. REV. 305, 314 (2017); Werbach & Cornell, *supra* note 23, at 343; Mykyta Sokolov, Smart Legal Contract As a Future of Contracts Enforcement (May 25, 2018) (unpublished manuscript at 18 & n.82), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3208292](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3208292) [<https://perma.cc/63E7-MXN4>].

```

require(sigR.length == sigS.length && sigR.length == sigV.length);
//HTB MODIFICATION: First payout is for testing, second payout is for
when album is mixed and should be no more than 1/3 of balance
  if (nonce == 0) {
    require(value < 0.1 ether);
  }
  else if (nonce == 1) {
    require(value <= this.balance/3)
  }
  ...29

```

Translated into prose, computer codes of this sort compel a payment of crypto-tokens if and only if the system detects a given result—the functional equivalent of pets returned and bridges crossed. The computer program excerpted above embodies a recent arrangement between a group of metalcore musicians, *Horse the Band*,<sup>30</sup> and their faithful follower Conrad Barski.<sup>31</sup> The band members were musically stuck and could not get their new album together.<sup>32</sup> Barski was thirsty for new songs and would be happy to pay the musicians real money. At this point, the tech-savvy artists suggested the smart contract avenue—with payment in Ether cryptocurrencies<sup>33</sup>—and Barski obliged.<sup>34</sup> The sum offered by Barski, the promisor, was placed in digital escrow, and would be paid out to *Horse the Band*, the promisee, in installments upon the release of new songs.<sup>35</sup>

The structure of the unilateral contract is all there: a promise for an act. Technology facilitates this arrangement. Strangers can trust each other without involving any intermediary. The escrow fund is secured through encryption, so

<sup>29</sup> *drcode/htb-multisig*, GITHUB, [https://github.com/drcode/htb-multisig/blob/master/htb\\_multisig.sol](https://github.com/drcode/htb-multisig/blob/master/htb_multisig.sol) [<https://perma.cc/R57G-ZRNJ>] (last visited Nov. 25, 2018). The full smart contract consist of 94 lines. Any owner of the cryptocurrency “Ether” can partake in the funding of *Horse the Band*.

<sup>30</sup> *Horse the Band*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Horse\\_the\\_Band](https://en.wikipedia.org/wiki/Horse_the_Band) [<https://perma.cc/6B2F-AR65>] (last visited Nov. 25, 2018).

<sup>31</sup> Barski offers plenty of detail on the history and purpose of this transaction. See Conrad Barski, *Changing the Music Industry with Smart Contracts . . . In the Small*, MEDIUM (Feb. 7, 2018), [https://medium.com/@conrad\\_9565/changing-the-music-industry-with-smart-contracts-in-the-small-dccaac4a6ab8](https://medium.com/@conrad_9565/changing-the-music-industry-with-smart-contracts-in-the-small-dccaac4a6ab8) [<https://perma.cc/HZ2Q-PUQK>]. Those of us familiar with Mark’s teaching style know what fun it would be to watch him turn these facts into a memorable skit.

<sup>32</sup> *Id.*

<sup>33</sup> ETHEREUM, [www.ethereum.org](http://www.ethereum.org) [<https://perma.cc/UYZ7-PWEL>] (last visited Nov. 25, 2018).

<sup>34</sup> Conrad Barski, *The HORSE the Band Smart Contract is Live!*, MEDIUM (Feb. 23, 2018), [https://medium.com/@conrad\\_9565/the-horse-the-band-production-contract-is-live-6fa8b74fdc80](https://medium.com/@conrad_9565/the-horse-the-band-production-contract-is-live-6fa8b74fdc80) [<https://perma.cc/2RKE-CD6C>].

<sup>35</sup> *Id.*

that no trusted third party need hold the key to the electronic vault.<sup>36</sup> Digital rights managers can be bypassed. The deal is clear: no songs, no pay; and, as per the unilateral contract template, no liability of the promisee. No artist should be held to any output quantity, as that would run counter to creative freedom. Only the promisor is conditionally bound.

There are, to be sure, limits to the unilateral contract analogy. More generally, as pointed out by Kevin Werbach and Nicolas Cornell, contract law as we know it is no perfect match for the world of smart contracts.<sup>37</sup> Contract law is usually retrospective and remedial, i.e. designed to prod the unyielding promisor.<sup>38</sup> In the case of smart contracts, by contrast, the promisor's performance is—through the use of technology—absolutely guaranteed: promises are enshrined in irreversible blockchain code and payment is automatic when all “if” clauses are satisfied.<sup>39</sup> Legal analysis in the case of smart contracts is therefore in large part prospective, as legal doctrines inform the structure of agreements during the coding phase.<sup>40</sup> Post-performance, the role of contract law in smart contract disputes may rather pertain to restitution issues or to any harmful consequences of performance, especially if and when coding bugs emerge.

The potential of smart contracts cannot be overstated. As Mark noted *ante litteram*,<sup>41</sup> and Professor Ian Ayres more recently proved,<sup>42</sup> these modern unilateral contracts can expand the range of private autonomy and enable agreements that will generate net welfare gains. Ayres highlights the possibility of new and better social contracts: socially conscious citizens might voluntarily undertake additional fiscal responsibility towards funding a common goal, but only upon condition that a sufficient number of like-minded fellows do the same.<sup>43</sup> To be sure, this sort of deal was prototyped long ago. Contract law aficionados will recall that Mary Yates Johnson premised her note to Allegheny College with the clause “in consideration of others subscribing.”<sup>44</sup> But because back then she could not be sure that others would give to the same cause, she might very well end up being the sole contributor to the college fund. Granted,

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<sup>36</sup> Werbach & Cornell, *supra* note 23, at 344 (“Smart contracts mimic the functionality of escrow. The smart contract code can place Bitcoins or other cryptocurrency tokens in a suspended state on the blockchain, where they cannot be spent until performance of the contract.”).

<sup>37</sup> *Id.* at 341.

<sup>38</sup> *Id.*

<sup>39</sup> *Id.* at 361.

<sup>40</sup> *Id.* at 371.

<sup>41</sup> Pettit, *supra* note 1, at 596 (concluding that the unilateral contract construct had been used, contrary to Llewellyn's intuition, to expand private autonomy).

<sup>42</sup> Ian Ayres, *Voluntary Taxation and Beyond: The Promise of Social Contracting Voting Mechanisms*, 19 AM. L. & ECON. REV. 1 (2017).

<sup>43</sup> *Id.*

<sup>44</sup> Allegheny Coll. v. Nat'l Chautauqua Cty. Bank of Jamestown, 159 N.E. 173 (N.Y. 1927).

she might have added exact conditions to her promise, such as the reaching of a minimum campaign capital, and then might have abstained from giving if the stated threshold was not reached. Nonetheless, she would have irreversibly disclosed her intent to give. Today, via the smart contract tool, she could achieve the same goal with privacy and anonymity, thereby perhaps being willing—as per Ayres’s result—to promise more.

Skepticism looms large over smart contracts, cryptocurrencies, and blockchains in general. Doing away with intermediaries cuts transaction costs to zero and is by definition efficient, but it also eliminates an often apposite checkpoint and, in large scale, may prompt undesirable outcomes.<sup>45</sup> Anonymity facilitates the shared expression of aspirational goals, but it may also nurture criminal intention, enable flash-mob aggregation, and accelerate the funding of criminal or subversive activities.<sup>46</sup> Most importantly, government regulation of private autonomy becomes hard and, if not properly implemented, may prove altogether impossible. It is time to pay attention.<sup>47</sup> Blockchain technology is not just the future of the internet. It is the twenty-first-century version of nuclear fission: in some ways wondrous, in some other ways terrifying, and in any case profoundly transformative.

How fitting, for Mark, to spot unilateral contracts’ analytical power decades ago and to equip us with an apt scholarly framework as we begin to comprehend blockchains. A talented miner, not of coins but of constructs of great potential, Mark was classical and poised in every way, yet ultimately, fabulously cool.

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<sup>45</sup> Rory Van Loo, *Making Innovation More Competitive: The Case of Fintech*, 65 UCLA L. REV. 232, 249-52 (2018).

<sup>46</sup> DE FILIPPI & WRIGHT, *supra* note 24, at 4.

<sup>47</sup> *See id.* at 6 (“Systems deployed on a blockchain . . . will be harder to control and regulate.”); Kevin Werbach, *The Song Remains the Same: What Cyberlaw Might Teach the Next Internet Economy*, 69 FLA. L. REV. 887 (2018) (concluding, optimistically, that “[i]n the end, the emerging businesses will welcome government engagement, and regulatory actors will accept creative solutions to achieve their goals”).